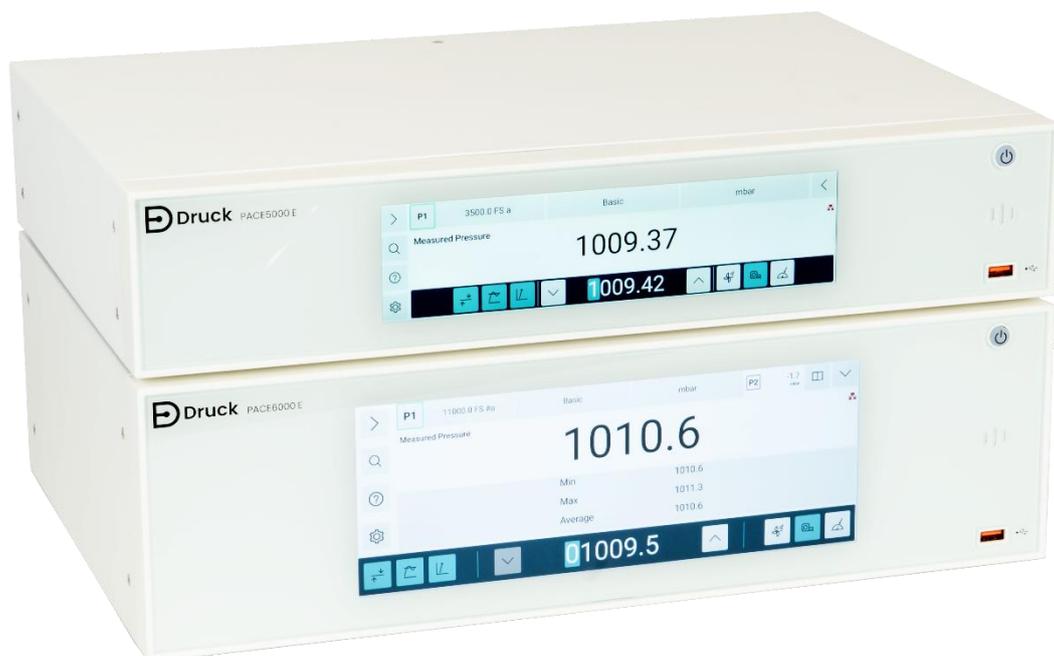# Druck

PACE5000 E
PACE6000 E

Pressure Automated Calibration Equipment

SCPI Remote Communications Manual

Introduction

This technical manual provides SCPI protocol instructions for the remote control of the PACE 'E' Series indicators and controllers.

Safety

- The manufacturer has designed this product to be safe when operated using the procedures detailed in this manual. Do not use this product for any other purpose than that stated.

- This publication contains operating and safety instructions that must be followed to make sure of safe operation and to maintain the equipment in a safe condition. The safety instructions are either warnings or cautions issued to protect the user and the equipment from injury or damage.

- Use qualified[*] programming technicians and good engineering practice for all procedures in this publication.

Pressure

Do not apply pressure greater the maximum safe working pressure to the PACE 'E' Series.

Maintenance

The PACE 'E' Series must be maintained using the manufacturer's procedures and should be carried out by authorized service agents or the manufacturer's service departments.

Technical Advice

For technical advice contact the manufacturer or subsidiary.

Associated Documents

A beginners Guide to SCPI by Barry Eppler, Published by Addison-Wesley Publishing Company Inc. for Hewlett Packard (ISBN 0-201-56350-9)

Abbreviations

The following abbreviations are used in this manual; abbreviations are the same in the singular and plural.

Abbreviation	Description
a	Absolute
ASCII	American Standard Code for Information Interchange
e.g.	For example
g	Gauge
i.e.	That is

---

[*] A programming technician must have the necessary specialist knowledge of programming, technical knowledge, and documentation to carry out the required work on the PACE 'E' Series.

Abbreviation	Description
IEEE 488	Institute of Electrical and Electronic Engineers standard 488 (for programmable devices with a digital interface)
m	Meter
max	Maximum
mbar	Millibar
min	Minute or minimum
MWP	Maximum Working Pressure
PACE	Pressure Automated Calibration Equipment
RS 232	Serial communications standard
Rx	Receive data
SCPI	Standard Commands for Programmable Instruments
Tx	Transmit data
UUT	Unit Under Test
+ve	Positive
-ve	Negative
°C	Degrees Celsius
°F	Degrees Fahrenheit

Pressure Measurement Units

The following units are used in this manual:

Abbreviation	Description
ATM	Atmosphere
BAR	bar
CMH2O	Centimeters of water at 20°C
CMHG	Centimeters of mercury
FTH2O	Feet of water at 20°C
FTH2O4	Feet of water at 4°C
HPA	Hecto Pascals
INH2O	Inches of water at 20°C
INH2O4	Inches of water at 4°C
INH2O60	Inches of water at 60°F
INHG	Inches of mercury
KG/CM2	Kilogrammes per square centimeter
KG/M2	Kilogrammes per square meter
KPA	Kilo Pascals
LB/FT2	Pounds per square foot
MH2O	Meters of water
MHG	Meters of mercury
MMH2O	Milli-meters of water
MMHG	Milli-meters of mercury

Abbreviation	Description
MPA	Mega Pascals
PA	Pascals
PSI	Pounds per square inch
TORR	Torr MBAR Millibar

Code Definitions

The following codes are used in this manual:

Abbreviation	Description
ABOR	Abort
ADDR	Address
AVER	Average
ALT	Altitude
AMPL	Amplitude
ATOD	Analog to Digital
BAR	Barometer
BRID	Bridge
CAL	Calibration
CAT	Catalogue
CDIS	C disable (calibration disable)
CEN	C enable (calibration enable) CLS Clear
COMM	Communicate
COMP	Compensate
COND	Condition
CONF	Configuration
CONT	Controller
CONV	Convert
CORR	Correction
COUN	Count
DEF	Define
DIAG	Diagnostic
DIOD	Diode
DISP	Display
EAV	Error in error queue
EFF	Effort
ENAB	Enable
EOI	End of input
ERR	Error
ESB	Summary bit from standard event
ESE	Event status enable

Abbreviation	Description
ESR	Event status register
EVEN	Event
FILT	Filter
FREQ	Frequency
FULL	Full scale
GTL	Go to local
HEAD	Head
IDN	Identification
IMM	Immediate
INL	In limit
INP	Input
INST	Instrument
ISOL	Isolation
LEV	Level
LIM	Limit
LLO	Local lock out
LOG	Logical
LPAS	Low pass (filter)
MAV	Message available in output queue
MEAS	Measure
MSS	Summary bit after SRQ
NEGC	Negative Calibration
OFFS	Offset
OPC	Operational condition
OPER	Operation
OPT	Option
OSB	Summary bit from standard operations status register
OVER	Overshoot
OUTP	Output
PAR	Parity
PASS	Password
PERC	Percent
POIN	Points
PRES	Pressure
QUE	Queue
QUES	Questionable
RANG	Range
REF	Reference
RES	Resolution

Abbreviation	Description
RES	Reset
SAMP	Sample
SENS	Sense
SEPT	Set point
SER	Serial
SOUR	Source
SPE	Speed
SRE	Service requests enable
SRQ	Service request
STAR	Start
STB	Status register query
STAT	State
SYST	System
TIM	Time to set point
UNIT	Unit of pressure
VAL	Value
VALV	Valve
VERS	Version
VOL	Volume

Contents

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Tables

1 Introduction

1.1 General

The communication interfaces of the PACE 'E' Series provide remote control of the instrument from a suitable computer or controller. The SCPI protocol enables any instrument with a SCPI facility to be controlled using the same standardized set of commands, ensuring interoperability and ease of integration. The PACE 'E' Series implements the full SCPI command set using the defined SCPI syntax.

The PACE 'E' series supports a wide range of modern communication interfaces for enhanced connectivity and flexibility. These include:

- **USB Virtual COM Port (VCP)**

  Emulates a traditional serial port over USB, allowing SCPI commands to be sent over a virtual serial interface.

- **USB Test & Measurement Class (TMC)**

  Enables USB-based communication conforming to the USBTMC protocol, widely supported by T&M software environments.

- **VXI-11**

  A TCP/IP-based communication protocol standardized for instrumentation, enabling control over LAN.

- **HiSLIP (High-Speed LAN Instrument Protocol)**

  A modern, high-performance protocol for LAN-based instrument communication, offering faster transfer speeds than VXI-11.

- **Raw TCP Socket**

  Allows direct socket-level communication using SCPI commands without any intermediate protocol layer.

- **SCPI over TLS**

  Provides secure, encrypted communication over TCP/IP using the TLS (Transport Layer Security) protocol for SCPI command transmission.

- **HTTP/HTTPS**

  Enables control and monitoring of the instrument via web-based applications or REST-style interfaces, optionally secured with HTTPS.

The following sections describe and define each instrument command used by the PACE 'E' Series.
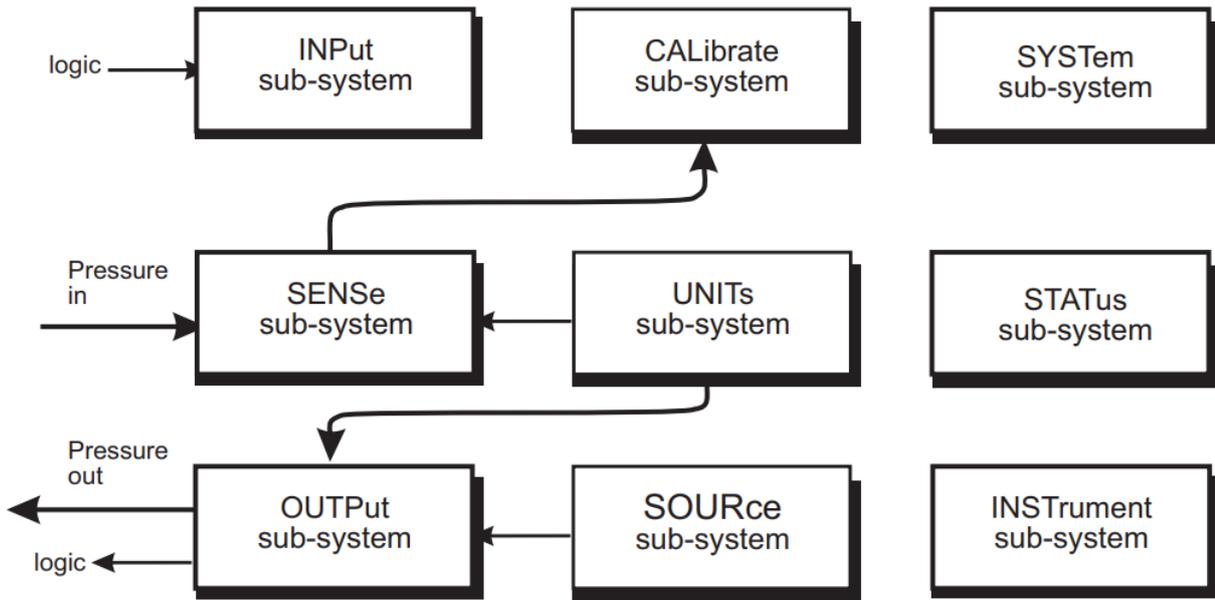
Figure 1-1: System Model

1.2 System Model

SCPI starts with a high-level block diagram of the measurement functions of the instrument. Each functional block is broken down into smaller block diagrams. SCPI contains a hierarchy of commands called a subsystem that maps directly to the hierarchy of the block diagram.

1.3 Remote/Local Operation

Most commands received over the SCPI interface automatically puts the PACE 'E' Series into remote control mode and disables the front panel touchscreen. Sending the LOC command returns the PACE 'E' Series to local control mode and enables the front panel touchscreen.

2 Command Structure

This section describes the structure of the commands and data sent and received by a PACE 'E' Series Controller/Calibrator.

2.1 Notation

All SCPI commands are based on a hierarchical tree structure consisting of key words and parameters. Associated commands are grouped together under a common node in the hierarchy.
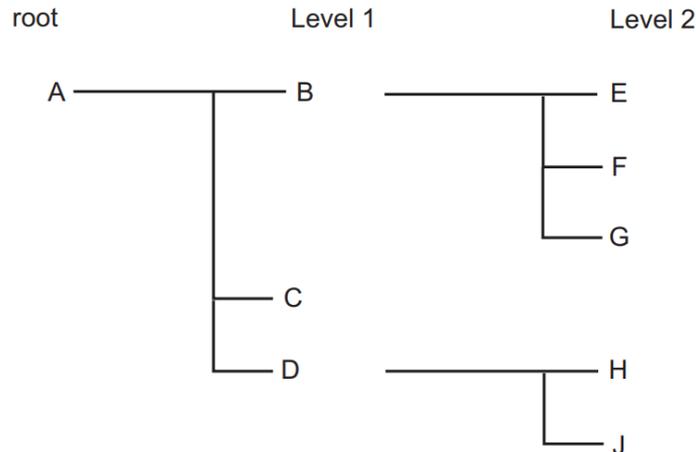
In the command tree the command A is the root command. A tree pointer is used to decode the SCPI commands. At power-up the pointer goes to the root command.

2.2 Message Terminators

All SCPI commands are terminated by line feed i.e., either <newline> (ASCII character, decimal 10), EOI for IEEE. After receiving a termination character the tree pointer returns to the root command.

2.2.1 Colon

A colon moves the current path down one level in the command tree, (e.g., the colon in SOURCE:PRESSURE specifies PRESSURE the is one level below SOURCE). When the colon is the first character of the command, it specifies that the next command is a root level command (e.g., :SOURCE specifies that SOURCE is a root level command).

2.2.2 Semicolon

A semicolon separates two commands in the same message without changing the tree pointer. e.g., with reference to the tree:

```
:A:B:E;F;G
```

This equivalent to sending three messages:

```
:A:B:E
:A:B:F
:A:B:G
```

2.2.3 Commas

If a command requires more than one parameter, separate adjacent parameters by using a comma. A comma does not affect the tree pointer.

(e.g.) `:SYSTEM:TIME 10,25,30`

To execute a command the full path to the command must be specified:

(e.g.) :OUTPut:STATe ON

This turns the pressure controller on.

Note: There must be a space between the command words and the parameter. In the above example there is a space between: STATe and ON.

SCPI commands are not case sensitive and may have a short form.

(e.g.): OUTP is the short form of OUTPUT.

Some nodes can be the default node and these key words are optional when programming the command. The instrument processes the command, with the same effect, with or without the option node. In this manual [] enclose [default notes].

(e.g.): SOURce[:PRESsure:][:LEVel][:IMMediate][:AMPlitude] 5.0

can be sent as

:SOURce:PRESsure:LEVel 5.0

or

:SOURce 5.0

This sets the set-point to 5.0

2.3 Program Headers

Program headers are keywords that identify the command. The program headers follow the syntax described in section 7.6 of IEEE 488.2. Instruments shall accept both upper and lowercase characters without distinguishing between the cases. Program headers consist of two distinct types, common command headers and instrument-control headers.

2.3.1 Common Command and Query Headers

The common command and query program header syntax, specified in IEEE 488.2, are defined as follows:

Command

*<PROGRAM MNEMONIC>

Query

*< PROGRAM MNEMONIC>?

2.3.2 Instrument Control Command and Query Headers

The instrument control command and query program header syntax controls and extracts data from the instrument as follows:

Command

:<MNEMONIC>

:<MNEMONIC> <PARAMETER>

Query

:<MNEMONIC>?

Instrument command headers can have a numeric suffix to identify each of several cases of the same header; the numeric suffix applies to both the long and short forms. All commands headers without a numeric suffix assume the value 1.

e.g.,

:OUTPut:LOGic1?

is the same as

:OUTPut:LOGic?

2.3.3 Queries

A query is a program header with an attached question mark character (?). On receiving a query, the current settings are loaded in the output buffer. A query does not affect the operation or setup of the instrument.

When the parameter of a command contains enumerated character data, both long form and short form are recognized. A query causes the return of data in the short form. Querying numeric parameters causes the resulting data to be returned in the units selected by the instrument unless specified otherwise.

2.4 SCPI Data Types

A variety of data types can be sent to the instrument as parameters or sent out from the instrument as response data.

2.4.1 Decimal Data

All normal decimal expressions are accepted including optional signs, decimal point and scientific notation.

Note: This includes floating point data.

The following are valid:

123

45.67

-2.6

4.6e-10

.76

A suffix multiplier can be added to the numeric value.

:SOUR 100 m

would set the programmable output to 0.1 units (100m units).

The multipliers supported are:

Table 2-1: Supported Multiplier

Mnemonic	Multiplier
A	1e-18
G	1e+9
K	1e+3
M	1e-3
T	1e+12

If a real value is sent to the instrument when an integer is expected, it will be rounded to an integer.

2.4.2 Integer Data

Integer data are whole numbers (containing no decimal places). A query of an integer value returns numbers containing no decimal places.

Note: Integer values can be specified in binary, octal or hexadecimal formats using the suffix letters (upper or lower case) B, Q and H respectively.

Table 2-2: Binary, Octal and Hexadecimal Formats

Format	Description
#B1010	Binary representation of 10
#Q71	Octal representation of 57
#HFA[a]	Hexadecimal representation of 250

a. Hexadecimal digits A-F can be in upper or lower case.

2.4.3 Enumerated Character Data

Enumerated characters are used for data that has a finite number of values; enumerated parameters use mnemonics to represent each valid setting.

The mnemonics have long and short forms just like command mnemonics.

The following example selects the maximum rate mode:

```
:SOURce:PRESsure:SLEW:MODE MAXimum
```

A query of an enumerated parameter always returns the short form data in upper case.

Example:

```
:SOURce:PRESsure:SLEW:MODE?
```

Queries rate mode, reply:

```
:SOUR:PRES:SLEW:MODE MAX
```

2.4.4 Boolean Data

Boolean data can only be one of two conditions; the numbers 1 and 0. Boolean can be "on" or "off", queries return 1 or 0.

Example:

```
:OUTPut:STATe 1
```

A query of Boolean data always returns 1 or 0.

2.4.5 String Data

String data can only contain ASCII characters in the range of decimal 32 to 127. A string must start with a double "quote" (ASCII 34) or a single `quote` (ASCII 39) and end with the same character.

Note: Characters in a string in either double "quote" or single `quote` are case sensitive.

Example: 1:

```
:SOURCe[:PRESsure]:RANGe '2.00barg'
```

Example: 2:

```
:SOURCe[:PRESsure]:RANGe "2.00barg"
```

Selects the 2-bar g range.

A query of a string parameter always returns the string in double "quotes".

3 Status System

The status reporting system informs the external controller that an event has occurred. This information is in the form of a service request (SRQ) using IEEE 488 or an SRQ message using RS 232.

The PACE 'E' Series uses status reporting as defined in IEEE 488.2 with the implementation of status registers.

The `OPERation` status registers have been implemented to comply with the SCPI protocol. These are registers where the individual bits are summary bits of the status of the instrument. Since the SCPI protocol does not include pressure instruments, bit 10 of both these registers are used as a pressure summary bit. This pressure summary bit is expanded to two, 16-bit registers (Bit 15 is not used and is always zero).

The only bit implemented in the operation status register is bit 10 (summary of the pressure operation status).

A summary bit is the final output of a data structure, it is a single bit that shows the status of one or more related events in the instrument. The basic structure of a summary bit:

• Condition register
• Event register
• Enable register
• Logical ANDing of the Event and Enable registers
• Summary bit that summarizes the result using OR logic

3.1 Condition Register

This register shows the current status of the device. The condition register is constantly updated - the bits in the register are set or reset showing the current condition.

3.1.1 Event Register

The event register shows an event that occurs in the condition register (a condition bit goes from low to high). This condition change is stored and only reset when the event register is read or the *CLS command sent.

3.1.2 Enable Register

This register allows the results of the event register to pass through to the next cascaded register and enables the user to select the event that should generate the final SRQ event. The status system implemented in the instrument is shown in the following diagram:

Note: Initial values of registers are 0, with the queues empty.
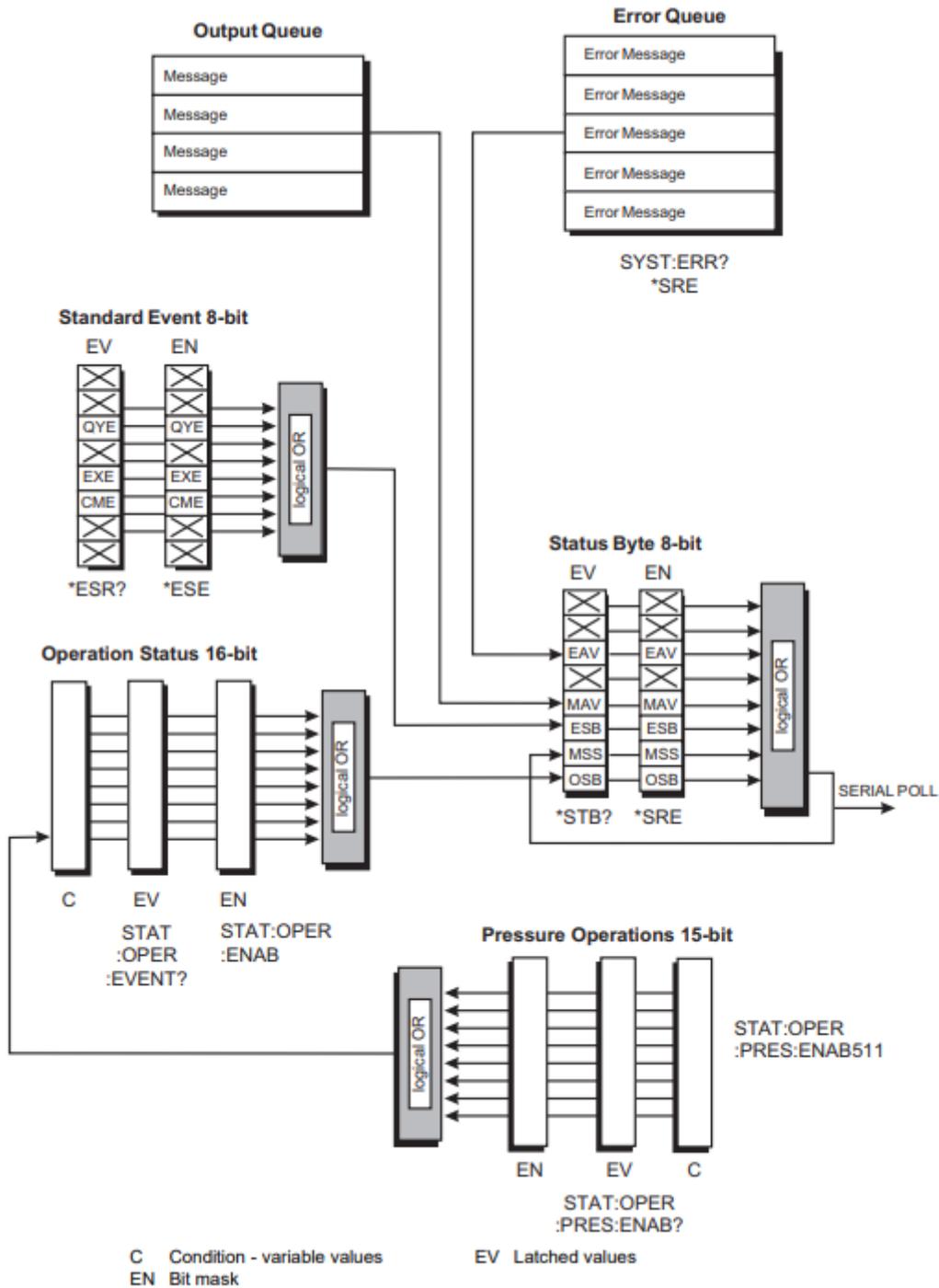
Figure 3-1: Status System

3.2 Output Queue

The output queue is a text readable data queue that is read through the IEEE 488 talk command. The queue is cleared by reading all elements in it or by the `*CLS` command.

Every time a query has been successfully completed, the response, in a text readable format is placed at the end of the output queue. If the MAV bit in the "Status Byte" was previously cleared it will be set. The output queue can contain up to 256 characters. If there is not enough space in the output queue for a new message, the error -350, "Queue overflow" will be placed into the error queue and the most recent output message will be lost.

3.3 Standard Event Group

The standard event group are 8-bit registers that are read by the IEEE 488 standard commands. The event register is cleared by reading it; the event and enable registers are cleared by the *CLS command.
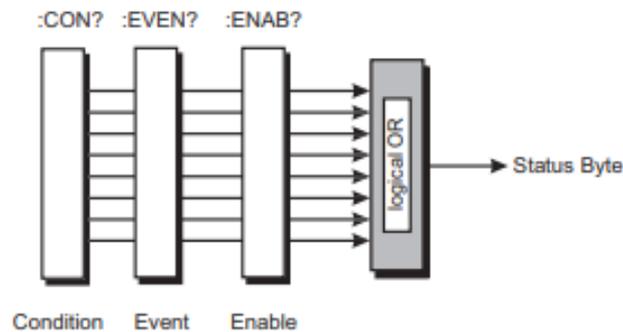
Bits within the standard event condition register are set by system errors and events. In addition to setting the status bits, a text message will be placed in the error queue. The ESB bit in the status byte sets if the associated bit in the event enable register is set. The enable register may be set through the *ESE command so that selected standard events cause the ESB bit to be set. The system events that set each bit are as follows:

Table 3-1: Standard Event Register

Bit	Name	Description	Meaning/data
0	OPC	Not used	Reserved - returns 0
1	RQC	Not used	Reserved - returns 0
2	QYE	-400 to -499	Query errors
3	DDE	Not used	Reserved - returns 0
4	EXE	-200 to -299	Execution errors
5	CME	-100 to -199	Command errors
6	URQ	Not used	Reserved - returns 0
7	PON	Not used	Reserved - returns 0

3.4 Operation Status Group

The operation status group are 16-bit registers that are read by the STAT:OPER:PRES commands. The event register is cleared by reading it; the event and enable registers are cleared by the *CLS command.

When a standard operation condition occurs, an appropriate bit is set in the condition register (this clears when the condition no longer exists). The bit is then latched in the event register. If the associated bit in the enable register is set, the OPR bit in the status byte sets. The enable register may be set through the STAT:OPER:PRES:ENAB command so that only selected standard operation events cause the OPR bit to set.

Problems can occur with some IEEE 488 controllers reading 16-bit unsigned numbers. All registers in this group do not use bit 15. The enable bit cannot be set and when read returns 0. The condition register is defined as follows:

3.4.1 Vent Complete

This signal occurs when the controller has been requested to vent and the vent has completed or timed out.

3.4.2 Range Change Complete

This signal occurs when the controller has been requested to perform a range change and the range change is complete.

3.4.3 In-Limits Reached

This signal is set every time the controlled pressure is within the specified limits. The signal is only generated if the pressure has been within limits for a user defined wait time period.

3.4.4 Zero Complete

This signal is generated when a manual or timed zero is complete. If the zero times out then this signal is also generated.

Table 3-2: Operation Status Register

Bit (1)	Data (2)	Bit (3)	Data (4)
0	Vent complete	1	Range change complete
2	In-limits reached	3	Zero complete
4	Auto-zero started	5	Fill time, timed-out
6	Reserved - returns 0	7	Reserved - returns 0
8	Reserved - returns 0	9	Reserved - returns 0
10	Reserved - returns 0	11	Reserved - returns 0
12	Reserved - returns 0	13	Reserved - returns 0
14	Reserved - returns 0	15	Reserved - returns 0

3.4.5 Auto Zero Started

When the controller is in the auto zero mode this signal indicates that the auto zero process has started. The zero complete signal indicates that the zero process has finished.

3.4.6 Fill Timed Out

Fill time out is not supported by PACE5000 E or PACE6000 E. Refer instead to the 'INLimits' query.

3.5 Status Byte Group

The status byte group are 8-bit registers that are read by the IEEE 488 standard commands. The event register is cleared by reading it; the event and enable registers are cleared by the *CLS command.
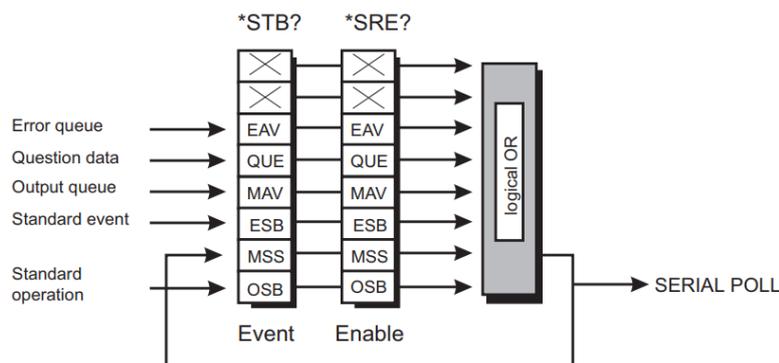
Bits within the status byte are a summary of other data structures in the status system. These bits will become set if other parts of the status system indicates that they should do so (i.e., a message in the output queue or error queue or, a condition and enable set in a register pair).

If the associated bit in the status enable register is set, a serial poll is generated and bit 6 is set. The enable register may be set through the `*SRE` command so that only selected status bits cause a serial poll.

Note: Bit 6 of the enable register is always set to 0.

There are some small differences between `*STB?` and serial polling. Either method can be used to read the state of bits 0-5 and bit 7. The reading method is different for bit 6 when using `*STB?` and serial poll. In general, use serial polling inside interrupt service routines, not `*STB?`

Bit 2 - EAV sets when there is an error in the error queue. The `:SYST:ERR?` command has to be sent to retrieve the error. The error queue buffers a maximum of five errors. When no more errors are available the message "No Error" is returned.

Bit 4 - MAV sets when there is a message available in the output queue.

Bit 5 - ESB sets when a standard event has occurred in the Standard Event Register.

Bit 6 - MSS sets when an SRQ is generated - SRQ sets when both the Status byte and the Service Request Enable register are at logic 1 (AND function).

3.5.1 RS 232 Specific

A service request (SRQ) produces the message:

    `:SRQ <value>`

where:

    `<value>` = the contents of the status summary byte.

The status system data structure sets each bit as follows:

Table 3-3: Status Byte Register

Bit	Name	Description
0	-	Reserved - returns 0
1	-	Reserved - returns 0
2	EAV	Error in error queue
3	-	Reserved - returns 0
4	MAV	Messages available in output queue
5	ESB	Summary bit from standard event
6	MSS	Summary bit after service request - SRQ
7	OSB	Summary bit from standard operations status

Example commands using the Status Byte and Status Byte Enable registers:

`*SRE 16`   Generate an SRQ interrupt when messages are available.

`*SRE?`   Find out what events are enabled to generate SRQ interrupts.

`*STB?`   Read and clear the Status Byte Enable register.

3.5.2 IEEE 488.2 Specific

Bit 7 - OSB sets when the pressure operations register bit 10 changes state. The operations register is a 16 bit register only using bit 10. This bit is a summary of the pressure operations register.

3.5.2.1 Status Reporting Register Structure

To set-up the status reporting system.

1. All status registers should be cleared by the command:
   `*CLS 2`.
2. The Pressure Operations Event register has to be set to enable the Pressure Operations Condition Register to send all the events to be reported; use the command:

   `:STAT:OPER:PRES:ENAB 511`

   The enabled events may also be read by the query:
   `:STAT:OPER:PRES:ENAB? 3`.
3. The Operation Status Event register must then be enabled to read bit 10 by the command:

   `:STAT:OPER:ENAB 1024`

   The enabled events may also be read by the query:

   `:STAT:OPER:ENAB?`

4. The status request to enable the SRQ must then be set.
   To enable only the Operation Status register (OSB) send the command:

   `*SRE 128`

   To enable the Operation Status register (OSB) and the Error Queue (EAV) send the command:

   `*SRE 132`

   This register may also be read by the query:

   `*SRE?`

   An event occurring generates an SRQ, the Status Byte should be queried to find the source of the event.
   If bit 2 of the Status Byte Register is set the error queue can be read by the query:

3.6 Instrument Errors

Any instrument error that occurs, either programming errors or execution errors, is stored in an error queue which is separate from the main output queue. The errors can be read by issuing the following command query:

   `:SYST:ERR?`

The error queue can hold up to five errors. Each time the error queue is queried the instrument responds with the next stored error in the queue. The response consists of an error number followed by a string describing the error. When the error queue is empty the instrument responds with:

   `:SYST:ERR 0, No error`

Querying the error queue clears the storage location in the error buffer. If more than five errors occur, before being queried, the 'Queue overflow; Error queue overflow' message is placed into the error queue. All subsequent errors are lost until the error queue is cleared.

4 Errors

Negative error numbers are used for the standard SCPI errors. Following the error numbers, a message describes the error. An error, when detected, is held in the error queue.

When `SYST:ERR?` Is sent any error in the error queue sets the error bit in the event status register.

4.1 Error Numbers

Each error detected causes an error number with an error message to be returned as follows:

Table 4-1: Errors -100 to -199

Error Code	Error Message
-100	-100, "Command error"
-101	-101, "Invalid character"
-102	-102, "Syntax error"
-103	-103, "Invalid separator"
-104	-104, "Data type error"
-105	-105, "GET not allowed"
-108	-108, "Parameter not allowed"
-109	-109, "Missing parameter"
-110	-110, "Command header error"
-111	-111, "Header separator error"
-112	-112, "Program mnemonic too long"
-113	-113, "Undefined header"
-114	-114, "Header suffix out of range"
-115	-115, "Unexpected number of parameters"
-120	-120, "Numeric data error"
-121	-121, "Invalid character in number"
-123	-123, "Exponent too large"
-124	-124, "Too many digits"
-128	-128, "Numeric data not allowed"
-130	-130, "Suffix error"
-131	-131, "Invalid suffix"
-134	-134, "Suffix too long"
-138	-138, "Suffix not allowed"
-140	-140, "Character data error"
-141	-141, "Invalid character data"
-144	-144, "Character data too long"
-148	-148, "Character data not allowed"
-150	-150, "String data error"
-151	-151, "Invalid string data"
-158	-158, "String data not allowed"
-160	-160, "Block data error"
-161	-161, "Invalid block data"

-168	-168, "Block data not allowed"
-170	-170, "Expression error"
-171	-171, "Invalid expression"
-178	-178, "Expression data not allowed"
-180	-180, "Macro error"
-181	-181, "Invalid outside macro definition"
-183	-183, "Invalid inside macro definition"
-184	-184, "Macro parameter error"

Table 4-2: Errors -200 to -299

Error Code	Error Message
-200	-200, "Execution error"
-201	-201, "Invalid while in local"
-202	-202, "Settings lost due to rtl"
-203	-203, "Command protected"
-210	-210, "Trigger error"
-211	-211, "Trigger ignored"
-212	-212, "Arm ignored"
-213	-213, "Init ignored"
-214	-214, "Trigger deadlock"
-215	-215, "Arm deadlock"
-220	-220, "Parameter error"
-221	-221, "Settings conflict"
-222	-222, "Data out of range"
-223	-223, "Too much data"
-224	-224, "Illegal parameter value"
-225	-225, "Out of memory"
-226	-226, "Lists not same length"
-230	-230, "Data corrupt or stale"
-231	-231, "Data questionable"
-233	-233, "Invalid version"
-240	-240, "Hardware error"
-241	-241, "Hardware missing"
-250	-250, "Mass storage error"
-251	-251, "Missing mass storage"
-252	-252, "Missing media"
-253	-253, "Corrupt media"
-254	-254, "Media full"
-255	-255, "Directory full"
-256	-256, "File name not found"
-257	-257, "File name error"

-258	-258, "Media protected"
-260	-260, "Expression error"
-261	-261, "Math error in expression"
-270	-270, "Macro error"
-271	-271, "Macro syntax error"
-272	-272, "Macro execution error"
-273	-273, "Illegal macro label"
-274	-274, "Macro parameter error"
-275	-275, "Macro definition too long"
-276	-276, "Macro recursion error"
-277	-277, "Macro redefinition not allowed"
-278	-278, "Macro header not found"
-280	-280, "Program error"
-281	-281, "Cannot create program"
-282	-282, "Illegal program name"
-283	-283, "Illegal variable name"
-284	-284, "Program currently running"
-285	-285, "Program syntax error"
-286	-286, "Program runtime error"
-290	-290, "Memory use error"
-291	-291, "Out of memory"
-292	-292, "Referenced name does not exist"
-293	-293, "Referenced name already exists"
-294	-294, "Incompatible type"

Table 4-3: Errors -300 to -399

Error Code	Error Message
-300	-300, "Device specific error"
-310	-310, "System error"
-311	-311, "Memory error"
-312	-312, "PUD memory lost"
-313	-313, "Calibration memory lost"
-314	-314, "Save/recall memory lost"
-315	-315, "Configuration memory lost"
-320	-320, "Storage fault"
-321	-321, "Out of memory"
-330	-330, "Self-test failed"
-340	-340, "Calibration failed"
-350	-350, "Queue overflow"
-360	-360, "Communication error"
-361	-361, "Parity error in program message"

-362	-362, "Framing error in program message"
-363	-363, "Input buffer overrun"
-365	-365, "Time out error"

Table 4-4: Errors -400 to -800

Error Code	Error Message
-400	-400, "Query error"
-410	-410, "Query INTERRUPTED"
-420	-420, "Query UNTERMINATED"
-430	-430, "Query DEADLOCKED"
-440	-440, "Query UNTERMINATED after indefinite response"
-500	-500, "Power on"
-600	-600, "User request"
-700	-700, "Request control"
-800	-800, "Operation complete"

5 Command and Query Summary

The following lists of all the SCPI commands and queries that apply to the instrument.

5.1 Command Structure

Some of the commands in the following summary are enabled at specific times and conditions, most can be enabled at any time. The command structure divides into subsystems as follows:

Table 5-1: Command Subsystem

Command	Description
:CALibration	Calibration commands
:INPut	Switch input of the control module
:INSTrument	Instrument specific commands
:OUTPut	Controls the output pressure and logical outputs
:SENSe	Directs the instrument to measure selected parameters
:SOURce	The commands that control the pressure outputs
:STATus	Instrument state
:SYSTem	Errors and SCPI version
:UNIT	Sets the units for the instrument
Mandatory SCPI Commands	Three letter commands, prefixed by '*'
Instrument Control	Commands Three letter commands, prefixed by ':'

5.2 Command and Query Details

This section describes each command in detail including parameters passed to it and response data returned. The general short form command is shown at the top of each page. The following information is then given:

Applicability	A list of instruments that accepts and responds to the command or query.
Command Syntax	The upper case represents the short form command.
Parameter	Type: DECIMAL, INTEGER, ENUMERATED CHARACTER, BOOLEAN or STRING.
Short form	The short alternative for the command to be effective.
Function	Basic function of the command.
Default	The default value or the maximum and minimum values where appropriate.
Query Syntax	The upper case represents the short form command.
Parameter	Type: DECIMAL, INTEGER, ENUMERATED CHARACTER, BOOLEAN or STRING.
Short form	The short alternative for the command to be effective.
Function	Basic function of the command.
Response	Data returned by the instrument following the query command.
Description	Details of the command and query with any conditions of use and any related commands.

Note: Many of the command descriptions contain an example code: sent (Tx) to the instrument and the data received (Rx) from the instrument.

5.3 Dual Module Instruments

Sending and receiving to a module must include either number 1 or 2 after the first part of the command or query. Without the module number, a dual module instrument defaults to module 1.

In Auto Range, we assume that there is only one virtual Auto Range channel even if two controllers are there, so even if commands are sent to individual channels 1 and 2, the result of the virtual Auto Range channel will be returned.

For example:

> :SENS1:PRES or :SENS2:PRES will return the current pressure of the Auto Range instead of returning the pressure on individual controllers.

5.4 Enabling the legacy format

SCPI Settings under Communications Settings - lets you change the SCPI mode. You can change SCPI communications from Standard mode (default) to Legacy PACE Mode. The difference is that in Legacy Mode, the SCPI command is echoed back, followed by the response. If you wish to run any existing scripts of SCPI commands developed for Legacy PACE, select Legacy mode before running them.

You can also select Standard mode by sending SCPI command

> `:SYSTem:ECHO 0`

and Legacy mode by sending SCPI command

> `:SYSTem:ECHO 1`

For example:

With the legacy PACE mode,

Tx	Rx	Remarks
:SYST:DATE 2024, 5, 9	-	Set a date
:SYST:DATE?	:SYST:DATE 2024, 5, 9	Return the date followed by command

With Standard mode,

Tx	Rx	Remarks
:SYST:DATE 2024, 5, 9	-	Set a date
:SYST:DATE?	2024, 5, 9	Return the date

5.5 Special characters in the Command Syntax

Characters	Meaning	Example
|	A vertical stroke between keywords or parameters indicates alternative choices. For parameters, the effect of the command varies depending on the choice.	`:SYSTem:AREA EURope|USA|JAPan|MALaysia|ASIA|ROW` The regions separated by the vertical stroke are the choices.
[]	Square brackets indicate that the enclosed keywords or parameters are optional when composing the command. These implied keywords or parameters will be executed even if they are omitted.	`:SOURce[x][:PRESsure]:INLimits:TIME` The `x` which is the header prefix, and the `PRESsure` is optional here.
<>	Angle brackets around a word (or words) indicate they are not to be	`:SOURce[x][:PRESsure]:INLimits:TIME <value>`

	used literally in the command. They represent the needed item.	Here `<value>` should be replaced with actual in-limit time

`{}`	Braces indicate that parameters can optionally be used in the command once, several times, or not at all.	`[:SOURce]:LIST:POWer <value>{, <value>}`
		A single power listing:
		`:LIST:POWer 5`
		A series of power listings:
		`:LIST:POWer 5,10,15,20`

5.6 Commands

CALibration

Description

The CALibration subsystem enables the calibration of the pressure transducers, zero valve open/close/status, pressure zero function, and the timed zero function. A pressure range that is not displayed or is displayed can be calibrated. Refer to the user manual for further details. An example calibration process sample is shown below:

Tx	Rx	Remarks
:Inst:Cat1:All?	:INST:CAT:ALL "3.50barg","10.00barg","1.00barg","BAROMETER","4.50bara"	Queries the catalogue of sensors fitted.
:SYST:ERR?	:SYST:ERR 0, No error	Queries the error queue, no errors.
:SOUR1:PRES:RANG?	:SOUR:PRES:RANG "4.50bara"	Queries for the currently selected displayed range.
:SENS1:PRES:RANG?	:SENS:PRES:RANG "3.50barg"	Queries for the currently selected SCPI range.
:SENS1:PRES?	:SENS:PRES -0.0004259	Pressure reading from the currently selected SCPI range ("3.50barg").
:SENS1:PRES:RANG "BAROMETER"	None	Selects the Barometer as the currently selected SCPI range for calibration.
:SENS1:PRES:RANG?	:SENS:PRES:RANG "BAROMETER"	Confirms the Barometer range is selected.
:SENS1:PRES?	:SENS:PRES 1005.7201013	Confirms the correct range is selected by reading the Barometer pressure output.
:SYST:ERR?	:SYST:ERR 0, No error	Queries the error queue, no errors.
:SYST:PASS:CEN:STAT?	:SYST:PASS:CEN:STAT 0	Queries for calibration mode status, calibration mode is disabled.
:SYST:PASS:CEN 2317100	None	Enables calibration mode.
:SYST:PASS:CEN:STAT?	:SYST:PASS:CEN:STAT 1	Confirms calibration mode is enabled.
:SENS1:PRES?	:SENS:PRES 1150.0000	Apply the calibration pressure and check the applied pressure is stable.
:CAL1:PRES:VAL1 1150.0000	None	Sends the 1st calibration pressure of 1150.0000mbar.

:CAL1:PRES:VAL1?	:CAL:PRES:VAL 1150.0000000	Confirms the first calibration point pressure is received.
:SYST:ERR?	:SYST:ERR 0, No error	Queries the error queue, no errors.
:SENS1:PRES?	:SENS:PRES 750.0000	Apply the calibration pressure and check the applied pressure is stable.
:CAL1:PRES:VAL2 750.0000	None	Sends the 2nd calibration pressure of 750.0000mbar.
:CAL1:PRES:VAL2?	:CAL:PRES:VAL 750.0000000	Confirms the 2nd calibration point pressure is received.
:SYST:ERR?	:SYST:ERR 0, No error	Queries the error queue, no errors.
:CAL1:PRES:ACC 1	None	Accepts and implements the calibration.
:SYST:PASS:CEN:STAT?	:SYST:PASS:CEN:STAT 0	Calibration mode disabled.

:CAL:PRES:ABOR

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:ABOR

Command Syntax

:CALibration[x][:PRESsure]:ABORt

where x = is the module number (default is 1)

Function: Aborts calibration values

Description

Aborts the current calibration and exits calibration mode. To query calibration mode status, enable calibration mode and disable calibration mode refer to commands:":SYST:PASS:CDIS", ":SYST:PASS:CED" and ":SYST:PASS:CEN:STAT:".

Example

Tx	Rx	Remarks
:CAL:PRES:ABORt		Aborts calibration values

Possible Errors

Error	Description
-114,"Header suffix out of range"	Invalid CM ID
-241,"Hardware missing"	Hardware missing
-203,"Command protected"	Calibration mode not enabled
1011,"Invalid Operation"	Invalid Operation

:CAL:PRES:ACC

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:ACC

Command Syntax

`:CALibration[x][:PRESsure]:ACCept 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: 1 - accept, 0 - reject

Function: Accepts a calibration and exits calibration mode

Description

Valid only when calibration is enabled, this command accepts the calibration after entry of the calibration values and measured pressure readings are now adjusted within a few seconds as the new calibration is implemented. Gauge sensors normally require entry of three calibration values whereas absolute sensors normally require entry of only two calibration values. To query calibration mode status, enable calibration mode and disable calibration mode refer to commands ":SYST:PASS:CEN:STAT", ":SYST:PASS:CED" and ":SYST:PASS:CDIS".

Example

Tx	Rx	Remarks
:CAL:PRES:ACC 1		Command accepts calibration and exit from calibration mode.

Possible Errors

Error	Description
-114,"Header suffix out of range"	Invalid CM ID
-241,"Hardware missing"	Hardware missing
-203,"Command protected"	Calibration mode not enabled
1011,"Invalid Operation"	Invalid Operation

:CAL:PRES:PER:MAX

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:PER:MAX

Query Syntax

`:CALibration[x][:PRESsure]:PERiod:MAXimum?`

where x = is the module number (default is 1)

Function: The command to query the maximum calibration period in days.

Response: The maximum calibration period in days.

Description

This commands is to get the maximum calibration period for the sensors.

Example

Tx	Rx	Remarks
:CAL:PRES:PERIOD:MAX?	:CAL:PRES:PERIOD:MAX 1825	Retrieves the maximum calibration period.

Possible Errors

Error	Description
-114,"Header suffix out of range"	Invalid CM ID
-241,"Hardware missing"	Hardware missing

:CAL:PRES:PER:MIN

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:PER:MIN

Query Syntax

`:CALibration[x][:PRESsure]:PERiod:MINimum?`

where x = is the module number (default is 1)

Function: The command to query the minimum calibration period in days.

Response: The minimum calibration period in days.

Description

This commands is to get the minimum calibration period for the sensors.

Example

Tx	Rx	Remarks
:CAL:PRES:PERIOD:MIN?	:CAL:PRES:PERIOD:MIN 7	Retrieves the minimum calibration period.

Possible Errors

Error	Description
-114,"Header suffix out of range"	Invalid CM ID
-241,"Hardware missing"	Hardware missing

:CAL:PRES:POIN

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:POIN

Query Syntax

`:CALibration[x][:PRESsure]:POINt?`

where x = is the module number (default is 1)

Function: Gets the number of calibration points

Response: Integer: No of Calibration points.

Description

Valid only when calibration is enabled, this queries the number of calibration points. To enable calibration mode use the ":SYST:PASS:CED" command. To disable calibration mode use the ":SYST:PASS:CDIS" command. To query the current status of calibration mode use the ":SYST[x]:PASS:CEN:STAT?". To check for systems errors use the ":SYST:ERR?" query.

Example

x	Tx	Rx	Remarks
1	:CAL:PRES:POIN?	:CAL1:PRES:POIN 3	
2	:CAL2:PRES:POIN?	:CAL2:PRES:POIN 3	
	:SYST:ERR?	:SYST:ERR 0, "No error"	No errors, error queue empty.

Possible Errors

Error	Description
-114,"Header suffix out of range"	Invalid CM ID
-241,"Hardware missing"	Hardware missing
-203,"Command protected"	Calibration mode not enabled
-365,"Time out error"	Time out

:CAL:PRES:VAL

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:VAL

Command Syntax

`:CALibration[x][:PRESsure]:VALue[y] <cmd_param>`

where x = is the module number (default is 1) , y = is the calibration data point (default is 1)

Parameter: Double: Calibration value.

Function: Enables calibration value to be entered at each calibration point.

Query Syntax

`:CALibration[x][:PRESsure]:VALue[y]?`

where x = is the module number (default is 1) , y = is the calibration data point (default is 1)

Function: Queries calibration point y value of module x.

Response: Returns pressure value for VALue[y] of module [x].

Description

Valid only when calibration is enabled. This command enables a calibration value to be entered during the calibration process. The query gets the calibration value. If a calibration point is entered incorrectly, it can be re-entered assuming the correct applied pressure is still present. Once the calibration is accepted the point values entered adjust the calibration of the range selected for calibration. Gauge sensors normally require entry of three calibration points whereas absolute sensors normally require entry of only two calibration points.To query calibration mode status, enable calibration mode and disable calibration mode refer to commands ":SYST:PASS:CDIS", ":SYST:PASS:CED" and ":SYST:PASS:CEN:STAT".

Example

Tx	Rx	Remarks
:CAL1:PRES:VAL1 -955.0000	None	1st Calibration point and value.
:CAL1:PRES:VAL1?	:CAL:PRES:VAL -955.0000000	Confirms the value was entered correctly.
:CAL1:PRES:VAL2 -5.0000	None	2nd Calibration point and value
:CAL1:PRES:VAL2?	:CAL:PRES:VAL2-5.0000000	Confirms the value was entered correctly.
:CAL1:PRES:VAL3 245	None	3rd Calibration point and value.
:CAL1:PRES:VAL3?	:CAL:PRES:VAL3 245.0000000	Incorrect value entered for calibration point 3.
:CAL1:PRES:VAL3 2495.0000	None	Correct value entered for calibration point 3.
:CAL1:PRES:VAL3?	:CAL:PRES:VAL3 2495.0000000	Correct value entered for calibration point 3 validated.
:CAL1:PRES:ACC 1	None	Calibration accepted.

Possible Errors

Error	Description

-114,"Header suffix out of range"	Invalid CM ID
-220,"Parameter error"	Parameter error
-241,"Hardware missing"	Hardware missing
-203,"Command protected"	Calibration mode not enabled
-365,"Time out error"	Time out-222,"Data out of range"

:CAL:PRES:ZERO:AUTO

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:ZERO:AUTO

Command Syntax

`:CALibration[x][:PRESsure]:ZERO:AUTO 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: 0 - Deactivates a zero process, 1 - Activates a zero process

Function: Automatic pressure zeroing

Query Syntax

`:CALibration[x][:PRESsure]:ZERO:AUTO?`

where x = is the module number (default is 1)

Function: Query progress of zero

Response: Boolean: 0 - Zero complete or not in progress, 1 - Zero in progress.

Description

This command starts or aborts a zero process. The progress of the zero can be monitored by using the query.

Example

Tx	Rx	Remarks
:CAL1:PRES:ZERO:AUTO?	:CAL:PRES:ZERO:AUTO 0	Queries the zero status, zero status is complete or not in progress
:SENS:PRES?	:SENS:PRES 900.00	Returns the current pressure
:CAL:PRES:ZERO:MODE?	:CAL:PRES:ZERO:MODE MANual	The current mode is Manual
:CAL:PRES:ZERO:AUTO 1		Initiates a manual-zero process
:CAL1:PRES:ZERO:AUTO?	:CAL:PRES:ZERO:AUTO 1	Queries the zero status, A manual-zero process is in progress
:SENS:PRES?	:SENS:PRES 21.092354	After some time, the pressure will be reducing to zero
:SENS:PRES?	:SENS:PRES 0.00	Current pressure is zero
:CAL:PRES:ZERO:AUTO?	:CAL:PRES:ZERO:AUTO 0	The manual zero operation completed

Possible Errors

Error	Description
-114,"Suffix out of range"	Invalid CM ID
-241,"Hardware missing"	Hardware missing
-294,"Incompatible type"	Invalid mode

:CAL:PRES:ZERO:ISOL:VALV:STAT

CAUTION: Opening the isolation valve with high-pressure in the system can cause the equipment to malfunction. Reduce the system pressure to zero gauge and make sure the controller is OFF before opening the isolation valve.

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:ZERO:ISOL:VALV

Command Syntax

`:CALibration[x][:PRESsure]:ZERO:ISOLation:VALVe[:STATe] 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: 1 - Isolation valve is closed, 0 - Isolation valve is open

Function: Opens and closes zero isolation valve.

Query Syntax

`:CALibration[x][:PRESsure]:ZERO:ISOLation:VALVe[:STATe]?`

where x = is the module number (default is 1)

Function: Queries state of isolation valve.

Response: Boolean: 1 - Isolation valve is closed, 0 - Isolation valve is open.

Description

This command is used to open or close isolation valve for Pressure Zero

Example

Tx	Rx	Remarks
:CAL:PRES:ZERO:ISOL:VALV?	:CAL:PRES:ZERO:ISOL:VALV:STAT 1	Query returns the current state of isolation valve as closed.
:CAL:PRES:ZERO:ISOL:VALV 0		Set the valve state as open
:CAL:PRES:ZERO:ISOL:VALV?	:CAL:PRES:ZERO:ISOL:VALV:STAT 0	Query returns the current state of isolation valve as open.

Possible Errors

Error	Description
-114,"Header suffix out of range"	Invalid CM ID
-241,"Hardware missing"	Hardware missing
-294,"Incompatible type"	Invalid mode

:CAL:PRES:ZERO:MODE

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:ZERO:MODE

Command Syntax

`:CALibration[x][:PRESsure]:ZERO:MODE MANual|AUTO|TIMed`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (MANual, AUTO, TIMed): pressure zero modes

Function: To set the Pressure Zero modes

Query Syntax

`:CALibration[x][:PRESsure]:ZERO:MODE?`

where x = is the module number (default is 1)

Function: To get the Pressure Zero modes

Response: Enum: Pressure zero modes 1. MANUAL 2. AUTO 3. TIMED

Description

To get or set the pressure zero modes.

Example

Tx	Rx	Remarks
:CAL:PRES:ZERO:MODE?	:CAL:PRES:ZERO:MODE MANual	Query returns the current mode
:CAL:PRES:ZERO:MODE AUTO		Set the mode to AUTO
:CAL:PRES:ZERO:MODE?	:CAL:PRES:ZERO:MODE AUTO	Query returns the mode as AUTO

Possible Errors

Error	Description
-114,"Header suffix out of range"	Invalid CM ID
-241,"Hardware missing"	Hardware missing
-294,"Incompatible type"	Invalid mode
-221,"Settings Conflict"	Not Basic type

:CAL:PRES:ZERO:REF

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:ZERO:REF

Command Syntax

`:CALibration[x][:PRESsure]:ZERO:REFerence 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: ON or OFF

Function: Pressure zeroing the reference sensor.

Query Syntax

`:CALibration[x][:PRESsure]:ZERO:REFerence?`

where x = is the module number (default is 1)

Function: Query progress of the zeroing of the reference sensor.

Response: Boolean: 0 - Complete or not in progress, 1 - in progress.

Description

This command starts or aborts the reference sensor zero process. The progress of the zero can be monitored by using the query.

Example

Tx	Rx	Remarks
:CAL:PRES:ZERO:REF?	:CAL:PRES:ZERO:REF 0	Queries the reference sensor zero status
:CAL:PRES:ZERO:REF 1		Initiates reference sensor zero process
:CAL:PRES:ZERO:REF?	:CAL:PRES:ZERO:REF 1	Queries the reference sensor zero status

Possible Errors

Error	Description
-114,"Suffix out of range"	Invalid CM ID
-241,"Hardware missing"	Hardware missing
-294,"Incompatible type"	Invalid mode

:CAL:PRES:ZERO:SOUR

CAUTION: The source and vacuum inputs should be disconnected.

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:ZERO:SOUR

Command Syntax

`:CALibration[x][:PRESsure]:ZERO:SOURce`

where x = is the module number (default is 1)

Function: To zero the source sensor.

Description

To zero the source sensor, ensure the applied pressure is less than 10% of the source sensor's full-scale range.

Example

Tx	Rx	Remarks
:CAL:PRES:ZERO:SOUR		Initiate source sensor zeroing

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Cannot find the hardware
1000, "Operation not allowed"	Operation not permitted beacuse source pressure detected

:CAL:PRES:ZERO:TIME

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:ZERO:TIME

Command Syntax

`:CALibration[x][:PRESsure]:ZERO:TIME <hours>`

where x = is the module number (default is 1)

Parameter: Integer: time in hours

Function: Sets the time period in hours between zero events.

Query Syntax

`:CALibration[x][:PRESsure]:ZERO:TIME?`

where x = is the module number (default is 1)

Function: Queries timed zero.

Response: Integer number in hours.

Description

This command sets the time interval between timed zeroing. Queries the current setting and sends a new setting in hours. If the current setting is less than 1hour the query returns 0.

Note: In order to set the time first need to enable the time state using the command :CAL:PRES:ZERO:TIME:STAT 1

Example

Tx	Rx	Remarks
:CAL:ZERO:TIME?	:CAL:PRES:ZERO:TIME 0	Queries Module 1 zero time interval = 0.
:CAL:ZERO:TIME 3	None	Sets module 1 zero time interval to 3 hours.
:CAL:ZERO:TIME?	:CAL:PRES:ZERO:TIME 3	Queries Module 1 zero time interval = 3.
:CAL2:ZERO:TIME?	:CAL:PRES:ZERO:TIME 0	Queries Module 2 zero time interval = 0.
:CAL2:ZERO:TIME 2	None	Sets module 2 zero time interval to 2 hours.
:CAL2:ZERO:TIME?	:CAL:PRES:ZERO:TIME 2	Queries Module 2 zero time interval = 2.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Cannot find the hardware
-222,"Data out of range",Validation failed	

| -221,"Settings Conflict" | Invalid zero mode or not a basic task |

:CAL:PRES:ZERO:TIME:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:ZERO:TIME:STAT

Command Syntax

`:CALibration[x][:PRESsure]:ZERO:TIME:STATe 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: 0 - Sets timed zero to OFF, 1 - Sets timed zero to ON

Function: Sets timed zero on/off.

Query Syntax

`:CALibration[x][:PRESsure]:ZERO:TIME:STATe?`

where x = is the module number (default is 1)

Function: Queries the status of the timed zero ON or OFF.

Response: Queries the status of the timed zero ON or OFF.

Description

This command sets the time period for zero on or off. This query gets the status of the timed zero (on or off)

Example

Tx	Rx	Remarks
:CAL:PRES:ZERO:TIME:STAT?	:CAL:PRES:ZERO:TIME:STAT 0	Queries Module 1 timed zero status.
:CAL:PRES:ZERO:TIME:STAT 1	None	Activates module 1 timed zero mode
:CAL1:PRES:ZERO:TIME:STAT ?	:CAL:PRES:ZERO:TIME:STAT 1	Queries Module 1 timed zero status
:CAL1:PRES:ZERO:TIME:STAT 0	None	Deactivates module 1 timed zero mode
:CAL:PRES:ZERO:TIME:STAT?	:CAL:PRES:ZERO:TIME:STAT 0	Queries Module 1 timed zero status
:CAL2:PRES:ZERO:TIME:STAT ?	:CAL2:PRES:ZERO:TIME:STAT 0	Queries Module 2 timed zero status
:CAL2:PRES:ZERO:TIME:STAT 1	None	Activates module 2 timed zero mode
:CAL2:PRES:ZERO:TIME:STAT ?	:CAL2:PRES:ZERO:TIME:STAT 1	Queries Module 2 timed zero status.
:CAL2:PRES:ZERO:TIME:STAT 0	None	Deactivates module 2 timed zero mode.
:CAL2:PRES:ZERO:TIME:STAT ?	:CAL2:PRES:ZERO:TIME:STAT 0	Queries Module 2 timed zero status.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID

-241, "Hardware missing"	Cannot find the hardware
-294,"Incompatible type",Invalid mode	
-221,"Settings Conflict"	Not a Basic task

:CAL:PRES:ZERO:VAC

⚠️

CAUTION: The source and vacuum inputs should be disconnected.

Applicability PACE5000 E, PACE6000 E

Short Form: :CAL:ZERO:VAC

Command Syntax

:CALibration[x][:PRESsure]:ZERO:VACuum

where x = is the module number (default is 1)

Function: To zero the vacuum sensor.

Description

To zero the vacuum sensor.

Example

Tx	Rx	Remarks
:CAL:PRES:ZERO:VAC		Initiate vacuum sensor zeroing

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Cannot find the hardware
1000, "Operation not allowed"	Operation not permitted beacuse vacuum pressure detected

:CAL:PRES:ZERO:VALV:STAT

CAUTION: Opening the zero valve with high-pressure in the system can cause the equipment to malfunction. Reduce the system pressure to zero gauge and make sure the controller is OFF before opening the zero valve.

Applicability   PACE5000 E, PACE6000 E

Short Form: :CAL:ZERO:VALV

Command Syntax

`:CALibration[x][:PRESsure]:ZERO:VALVe[:STATe] 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: 1 - Valve is open. 0 - Valve is close

Function: Opens and closes zero valve.

Query Syntax

`:CALibration[x][:PRESsure]:ZERO:VALVe[:STATe]?`

where x = is the module number (default is 1)

Function: Queries state of valve.

Response: Boolean: 1 - Valve is open. 0 - Valve is close

Description

This command is used to open and close the zero valve in each control module. The query gets the state of the zero valve, open or closed.

Example

Tx	Rx	Remarks
:CAL1:PRES:ZERO:VALV?	:CAL1:PRES:ZERO:VALV 0	Queries module 1 zero valve status.
:CAL1:PRES:ZERO:VALV 1	None	Opens module 1 zero valve.
:CAL1:PRES:ZERO:VALV?	:CAL1:PRES:ZERO:VALV 1	Queries module 1 zero valve status.
:CAL1:PRES:ZERO:VALV 0	None	Closes module 1 zero valve.
:CAL1:PRES:ZERO:VALV?	:CAL1:PRES:ZERO:VALV 0	Queries module 1 zero valve status.
:CAL2:PRES:ZERO:VALV?	:CAL2:PRES:ZERO:VALV 0	Queries module 2 zero valve status.
:CAL2:PRES:ZERO:VALV 1	None	Opens module 2 zero valve.
:CAL2:PRES:ZERO:VALV?	:CAL2:PRES:ZERO:VALV 1	Queries module 2 zero valve status.
:CAL2:PRES:ZERO:VALV 0	None	Closes module 2 zero valve.
:CAL2:PRES:ZERO:VALV?	:CAL2:PRES:ZERO:VALV 0	Queries module 2 zero valve status.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Cannot find the hardware
-294,"Incompatible type",Invalid mode	

DIAGnostic

Description

The DIAGnostic subsystem contains commands that can be used for debugging the system.

:DIAG:CONT:TEMP

Applicability   PACE5000 E, PACE6000 E

Short Form: :DIAG:CONT:TEMP

Query Syntax

`:DIAGnostic[x]:CONTroller:TEMPerature?`

where x = is the module number (default is 1)

Function: This query gets the controller temperature in Celsius

Response: Double: Temperature in Celsius

Description

This query gets the controller temperature in celsius

Example

Tx	Rx	Remarks
:DIAG:CONT:TEMP?	DIAG:CONT:TEMP 40.1820831	Return controller temperature in celsius

INSTrument

Description

The INSTrument subsystem gets information about the configuration of the instrument.

:INST:ALI:NAME

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:ALI:NAME

Command Syntax

:INSTrument:ALIas:NAME <name>

Parameter: String: Instrument alias name default is \"DPI\"

Function: The command sets the instrument alias name.

Query Syntax

:INSTrument:ALIas:NAME?

Function: The query returns the instrument alias name.

Response: String returning the instrument alias name.

Description

The command to get/set the instrument name

Example

Tx	Rx	Remarks
:INSTrument:ALIas:NAME?	:INST:ALI:NAME DPI	Return instrument alias name
:INSTrument:ALIas:NAME "DPI"		Set the instrument alias name.

Possible Errors

Error	Description
-210,"Character data too long"	Validation failed
-208,"Out of memory"	Set operation failed

:INST:CAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:CAT

Query Syntax

`:INSTrument:CATalog[x]?`

where x = is the module number (default is 1)

Function: Query all ranges fitted, does not including source sensor ranges

Response: A list of comma separated strings of ranges fitted

Description

This query returns all measure ranges fitted to the instrument. The reply is a comma separated list of strings representing each range.

Example

Tx	Rx	Remarks
:INST:CAT1?	:INST:CAT "7.00barg","BAROMETER","8.00 bara"	Query returns range for module1
:INST:CAT2?	:INST:CAT2 "3.50barg","BAROMETER","4.50 bara"	Query returns range for module2

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-183, "Hardware missing"	Hardware module is not present

:INST:CAT:ALL

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:CAT:ALL

Query Syntax

`:INSTrument:CATalog[x]:ALL?`

where x = is the module number (default is 1)

Function: Query all ranges fitted, including source sensor ranges.

Response: A list of comma separated strings of ranges fitted

Description

This query returns all the ranges fitted to the instrument. The reply is a comma separated list of strings representing each range.

Example

Tx	Rx	Remarks
:INST:CAT1:ALL?	:INST:CAT:ALL "3.50barg","10.00barg","1.00barg","BAROMETER","4.50bara"	Query returns all ranges for module1
:INST:CAT2:ALL?	:INST:CAT2:ALL "2.00barg","3.50barg","1.00barg","BAROMETER","3.00bara"	Query returns all ranges for module1

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-183, "Hardware missing"	Hardware module is not present

:INST:CAT:REAL

Applicability PACE5000 E, PACE6000 E

Short Form: :INST:CAT

Query Syntax

`:INSTrument:CATalog[x][:REAL]?`

where x = is the module number (default is 1)

Function: Query all ranges fitted, does not including source sensor ranges

Response: A list of comma separated strings of ranges fitted

Description

This query returns all measure ranges fitted to the instrument. The reply is a comma separated list of strings representing each range.

Example

Tx	Rx	Remarks
:INST:CAT1:REAL?	:INST:CAT:REAL "7.00barg","BAROMETER","8.00 bara"	Query returns range for module1
:INST:CAT2:REAL?	:INST:CAT2:REAL "3.50barg","BAROMETER","4.50 bara"	Query returns range for module2

:INST:CONT:LIM

Applicability   PACE6000 E

Short Form: :INST:LIM

Query Syntax

`:INSTrument[:CONTroller[x]]:LIMits[y]?`

where x = is the module number (default is 1) , y = is the list of available ranges (default is 1)

Function: Queries the upper and lower full-scale limits of the fitted sensor ranges.

Response: A string representing the range, a number representing the upper full-scale and a number representing the lower full-scale.

Description

This query returns a string representing the range, a number representing the upper full-scale and lower full-scale.

x	y	PACE6000 E Sensor
1	1	Module 1: control sensor
1	2	Module 1: source pressure +ve
1	2	Module 1: source pressure –ve
1	4	Module 1: barometric range (optional)
1	5	Module 1: CM3 reference sensor (if fitted)
1	6	Reserved
1	7	Module 1: Pseudo Range based on the control sensor range
2	1	Module 2: control sensor
2	2	Module 2: source pressure +ve
2	3	Module 2: source pressure –ve
2	4	Module 2: barometric range (optional)
2	5	Module 2: CM3 reference sensor (if fitted)
2	6	Reserved
2	7	Module 2: Pseudo Range based on the control sensor range

Example

Tx	Rx	Remarks
:INST:CONT:LIM?	:INST:CONT:LIM "20.00bar",20000.0000000,0.0000000	
:INST:CONT:LIM2?	:INST:CONT:LIM "20.00barg", 21000.0000000, -1100.0000000	
:INST:CONT:LIM3?	:INST:CONT:LIM3 "2.00barg", 2100.0000000, -1100.0000000	
:INST:CONT:LIM4?	:INST:CONT:LIM4 "BAROMETER", 1207.5000000, 825.0000000	

Possible Errors

Error	Description
-222, "Header suffix out of range"	Invalid CM ID
-224, "Incompatible parameter type"	Invalid sensor ID
-183, "Hardware missing"	Required hardware is not present

:INST:CONT:SENS

Applicability   PACE6000 E

Short Form: :INST

Query Syntax

`:INSTrument[:CONTroller[x]][:SENSor[y]]?`

where x = is the module number (default is 1) , y = is the sensor number (default is 1)

Function: Queries the transducer range.

Response: String representing range.

Description

This command returns the transducer range.

y	PACE6000 E Sensor
1	Control sensor full-scale
2	+ve port source pressure sensor full-scale
3	–ve port vacuum pressure sensor full-scale
4	Barometer if fitted
5	Reference sensor range if fitted
6	Reserved
7	Pseudo absolute range

Example

Tx	Rx	Remarks
:INST:CONT:SENS?	:INST:CONT:SENS "3.00barg"	Returns the transducer range
:INST:CONT1:SENS2?	:INST:CONT1:SENS2 "7.00barg"	1st control module source pressure sensor
:INST:CONT2:SENS4?	:INST:CONT2:SENS4 "BAROMETER"	2nd control module barometric sensor

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-183, "Hardware missing"	Hardware module is not present
-109, "Incompatible type"	Invalid sensor ID

:INST:CONT:SENS:CALD

Applicability   PACE6000 E

Short Form: :INST:CONT:SENS:CALD

Query Syntax

`:INSTrument:CONTroller:SENSor[x]:CALD[y]?`

where x = is the sensor number (default is 1) , y = is the Index of date (default is 1)

Function: Query the sensor [x] with [y] calibration date

Response: Returns sensor [x] with [y] calibration date

Description

This query returns the following:

x	PACE6000
1	Module 1: control sensor
2	Module 1: source pressure +ve
3	Module 1: source pressure –ve
4	Module 1: barometric sensor (optional)
5	Module 2: control sensor
6	Module 2: source pressure +ve
7	Module 2: source pressure –ve
8	Module 2: barometric sensor (optional)
9	Module 1: reference sensor
10	Module 2: reference sensor

Example

Tx	Rx	Remarks
:INST:CONT:SENS5:CALD1?	:INST:CONT:SENS5:CALD 2019, 11, 21	Control module 1 sensor 5 first calibration date
:INST:CONT2:SENS5:CALD2?	:INST:CONT2:SENS5:CALD2 2019, 11, 17	Control module 2 sensor 5 second calibration date

Possible Errors

Error	Description
-222, "Data out of range"	Invalid CM ID, sensor index, or calibration index
-183, "Hardware missing"	Required hardware module is not present

:INST:CONT:SENS:FULL

Applicability   PACE6000 E

Short Form: :INST:SENS:FULL

Query Syntax

`:INSTrument[:CONTroller[x]]:SENSor[y]:FULLscale?`

where x = is the module number (default is 1) , y = is the sensor number (default is 1)

Function: Queries sensor full-scale value.

Response: Returns the full-scale value of the selected sensor.

Description

This query returns the full-scale value of the selected sensor

x	y	PACE6000 E Sensor
1	1	Module1:control sensor
1	2	Module 1: source pressure +ve
1	3	Module 1: source pressure –ve
1	4	Module 1: barometric range (optional)
1	5	Module 1: CM3 reference sensor (if fitted)
1	6	Reserved
1	7	Module 1: Pseudo Range based on the control sensor range
2	1	Module 2: control sensor
2	2	Module 2: source pressure +ve
2	3	Module 2: source pressure –ve
2	4	Module 2: barometric range (optional)
2	5	Module 2: CM3 reference sensor (if fitted)
2	6	Reserved
2	7	Module 2: Pseudo Range based on the control sensor range

Example

Tx	Rx	Remarks
:INST:CONT:SENS:FULL?	:INST:CONT:SENS:FULL 20000.0000000,0.0000000	Returns the full-scale value of the control sensor

Possible Errors

Error	Description
-109, "Incompatible type"	Invalid sensor ID
-114, "Header suffix out of range"	Invalid control module ID
-183, "Hardware missing"	Hardware module is not present

:INST:CONT:SENS:NEGC

Applicability   PACE6000 E

Short Form: :INST:NEGC

Query Syntax

`:INSTrument[:CONTroller[x]][:SENSor[y]]:NEGCal?`

where x = is the module number (default is 1) , y = is the sensor number (default is 1)

Function: Queries sensor negative calibration.

Response: Boolean (0 or 1):

0 - negative calibration not supported

1 - negative calibration supported.

Description

This command query returns sensor negative calibration supported or not supported. Used in DPI515 emulation; for PACE6000E this query always returns '0'

Example

x	y	PACE6000 E Sensor
1	1 or blank	Module 1: control sensor
2	1 or blank	Module 1: source pressure +ve
3	1 or blank	Module 1: source pressure –ve
4	1 or blank	Module 1: barometric range (optional)
5	1 or blank	Module 1: CM3 reference sensor (if fitted)
6	2	Module 2: control sensor
7	2	Module 2: source pressure +ve
8	2	Module 2: source pressure –ve
9	2	Module 2: barometric range (optional)
10	2	Module 2: CM3 reference sensor (if fitted)

Possible Errors

Error	Description
-109, "Incompatible type"	Invalid sensor type
-114, "Header suffix out of range"	Invalid control module ID
-183, "Hardware missing"	Hardware module is not present

:INST:CONT:SENS:SN

⚠

CAUTION: For backward compatibility, the short form of this command will return the chassis serial number instead of the Module 1 control sensor serial number. Refer :INST:SN command.

Applicability   PACE6000 E

Short Form: :INST:SN

Query Syntax

`:INSTrument[:CONTroller[x]][:SENSor[y]]:SN?`

where x = is the module number (default is 1) , y = is the sensor number (default is 1)

Function: Queries the sensor serial number.

Response: Gets the serial number of the selected sensor [y] where y (1, 2…6) is the sensor number designated in the table below.

Description

This query gets the serial number of the selected sensor.<T>x;y;PACE6000 E Sensor;$1 or blank;1;Module 1: control sensor;$1 or blank;2;Module 1: source pressure +ve;$1 or blank;3;Module 1: source pressure -ve;$1 or blank;4;Module 1: barometric range (optional);$1 or blank;5;Module 1: CM3 reference sensor (if fitted);$1 or blank;6;Reserved;$2;1;Module 2: control sensor;$2;2;Module 2: source pressure +ve;$2;3;Module 2: source pressure -ve;$2;4;Module 2: barometric range (optional);$2;5;Module 2: CM3 reference sensor (if fitted);$2;6;Reserved;$

Example

Tx	Rx	Remarks
:INST:SENS:SN?	:INST:SENS:SN 1034075211	Control module 1 sensor 1 serial number
:INST:CONT2:SENS:SN?	:INST:CONT2:SENS:SN 1248207511	Control module 2 sensor 1 serial number
:INST:CONT2:SENS:SN?	:INST:CONT2:SENS2:SN 1302559911	Control module 2 sensor 2 serial number

Possible Errors

Error	Description
-109, "Incompatible type"	Invalid sensor type
-114, "Header suffix out of range"	Invalid control module ID
-183, "Hardware missing"	Hardware module is not present

:INST:CONT:TYPE

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TYPE

Query Syntax

`:INSTrument[:CONTroller[x]]:TYPE?`

where x = is the module number (default is 1)

Function: Queries the controller type

Response: String: Controller type

Description

The query command returns the controller type

Example

Tx	Rx	Remarks
:INST:CONT:TYPE?	:INST:CONT:TYPE "CM2-B-13G"	query returns the controller type

Possible Errors

Error	Description
-222, "Header suffix out of range"	Invalid CM ID
-224, "Incompatible parameter type"	Unrecognized device
-183, "Hardware missing"	Required hardware is not present

:INST:DISP

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:DISP

Command Syntax

`:INSTrument:DISPlay SINGle|DUAL`

Parameter: Character - Enumerated (SINGle, DUAL):

Function: Sets the single or dual display mode.

Query Syntax

`:INSTrument:DISPlay?`

Function: Queries the display setting - single or dual

Response: Character - Enumerated: Single or Dual

Description

This command sets the single or dual display mode. The query returns display setting single or dual display mode.

Example

Tx	Rx	Remarks
:INST:DISP?	:INST:DISP SING	In single mode
:INST:DISP DUAL	None	Change to dual display mode
:INST:DISP?	:INST:DISP DUAL	In dual display mode
:INST:DISP SINGLE	None	Change to single display mode
:INST:DISP?	:INST:DISP SING	In single mode

Possible Errors

Error	Description
1000, "Operation not allowed"	Operation not permitted

:INST:IPAD

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:IPAD

Query Syntax

:INSTrument:IPADdress?

Function: Queries the device IP address

Response: String: IP address, Subnet mask, Gateway and DNS.

Description

Command for getting the device IP address. The query returns device IP address ,Subnet mask, Gateway and DNS value.

Example

Tx	Rx	Remarks
:INST:IPADdress?	:INST:IPAD "172.30.113.40" "255.255.248.0" "172.30.112.1" " "	

Possible Errors

Error	Description
-200,"Memory error"	Failed to get

:INST:LIM

Applicability   PACE5000 E,

Short Form: :INST:LIM

Query Syntax

:INSTrument:LIMits[x]?

where x = is the sensor number (default is 1)

Function: Queries the upper and lower full-scale limits of the fitted sensor ranges. The index number x is used to index into the list of available ranges.

Response: A string representing the range, a number representing the upper full-scale and a number representing the lower full-scale.

Description

This query returns a string representing the range, a number representing the upper full-scale and lower full-scale.

x	PACE5000 E Sensor
1	Module 1: control sensor
2	Module 1: source pressure +ve
2	Module 1: source pressure –ve
4	Module 1: barometric range (optional)
5	Module 1: CM3 reference sensor (if fitted)
6	Reserved
7	Module 1: Pseudo Range based on the control sensor range

Example

Tx	Rx	Remarks
:INST:LIM?	:INST:LIM "20.00bar",20000.0000000,0.0000000	
:INST:LIM2?	:INST:LIM2 "20.00barg", 21000.0000000, -1100.0000000	
:INST:LIM3?	:INST:LIM3 "2.00barg", 2100.0000000, -1100.0000000	
:INST:LIM4?	:INST:LIM4 "BAROMETER", 1207.5000000, 825.0000000	

Possible Errors

Error	Description
-207,"Suffix out of range"	Invalid CM ID
-203,"Incompatible type"	Invalid sensor ID
-205,"Hardware missing"	Hardware missing

:INST:MAC

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:MAC

Query Syntax

:INSTrument:MACaddress?

Function: Queries the MAC internet address.

Response: Address string representing MAC address.

Description

This command returns the Media Access Control (MAC) address string.

Example

Tx	Rx	Remarks
:INST:MAC?	:INST:MAC "00-D0-1C-0B-1B-1A"	Return the device MAC address

Possible Errors

Error	Description
-200,"Memory error"	Failed to get

:INST:MOD

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:MOD

Query Syntax

`:INSTrument:MODel?`

Function: Ask for instrument model number.

Response: Character - Enumerated: PACE5000E, PACE6000E, NOTSET or INVALID

Description

The query command returns the instrument model number.

Example

Tx	Rx	Remarks
:INST:MODEL?	:INST:MOD PACE5000E	Query returns the instrument model as PACE5000E.

:INST:MODE

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:MODE

Command Syntax

`:INSTrument:MODE SINGle|DUAL`

Parameter: Character - Enumerated (SINGle, DUAL): Instrument Controller Channel mode

Function:

Query Syntax

`:INSTrument:MODE?`

Function:

Response:

Description

Command used to set and query the selected control channel mode

Example

Tx	Rx	Remarks
:INST:MODE?	:INST:MODE SING	In single mode
:INST:MODE DUAL	None	Change to dual channel mode
:INST:MODE?	:INST:MODE DUAL	In dual channel mode
:INST:MODE SINGLE	None	Change to single channel mode
:INST:MODE?	:INST:MODE SING	In single channel mode

:INST:SENS

Applicability   PACE5000 E,

Short Form: :INST:SENS

Query Syntax

`:INSTrument:SENSor[x]?`

where x = is the sensor number (default is 1)

Function: Queries the transducer range (sensor).

Response: Returns sensor range.

Description

This command returns the transducer range. For PACE5000 E this command can be used to address module 1. For PACE6000 E this command can address module 1 alone, to address both module 1 and module 2 refer to command :INST:CONT:SENS.

Example

Tx	Rx	Remarks
:INST:SENS?	:INST:SENS "7.00barg"	Module 1: default sensor
:INST:SENS1?	:INST:SENS "7.00barg"	Module 1: sensor 1
:INST:SENS2?	:INST:SENS "20.00barg"	Module 1: sensor 2
:INST:SENS3?	:INST:SENS3 "2.00barg"	Module 1: sensor 3
:INST:SENS4?	:INST:SENS4 "BAROMETER"	Module 1: sensor 4
:INST:SENS5?	:INST:SENS5 "3.50barg"	Module 1: sensor 5
:INST:SENS6?	:INST:SENS6 "20.00barg"	Module 1: sensor 6
:INST:SENS7?	:INST:SENSE 7 "10.00barg"	Module 1: sensor 7
:INST:SENS8?	:INST:SENSE 8 "BAROMETER"	Module 1: sensor 8

Possible Errors

Error	Description
-222, "Header suffix out of range"	Invalid CM ID
-224, "Incompatible parameter type"	Invalid sensor ID
-183, "Hardware missing"	Required hardware is not present

:INST:SENS:CALD

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:SENS:CALD

Query Syntax

`:INSTrument:SENSor[x]:CALD[y]?`

where x = is the sensor number (default is 1) , y = is the Index of date (default is 1)

Function: Queries the yth calibration date for sensor x.

Response: The yth calibration date for sensor x.

Description

Queries sensor calibration dates in the form yyyy, mm, dd. Returns sensor [x] with [y] calibration date. Where x is the sensor number, x= 1, 2…10 and y is the yth calibration date for sensor x. y = 1, 2, 3…10 calibration dates stored for each sensor

x	PACE5000 Sensor	PACE6000 Sensor
1	Module 1: control sensor	Module 1: control sensor
2	Module 1: source pressure +ve	Module 1: source pressure +ve
3	Module 1: source pressure –ve	Module 1: source pressure –ve
4	Module 1: barometric sensor (optional)	Module 1: barometric sensor (optional)
5	Module 1: reference sensor (if fitted)	Module 2: control sensor
6		Module 2: source pressure +ve
7		Module 2: source pressure –ve
8		Module 2: barometric sensor (optional)
9		Module 1: reference sensor
10		Module 2: reference sensor

Example

Tx	Rx	Remarks
:INST:SENS5:CALD1?	:INST:SENS5:CALD 2019, 11, 21	Sensor 5 first calibration date
:INST:SENS4:CALD2?	:INST:SENS4:CALD2 2019, 11, 17	sensor 4 second calibration date

Possible Errors

Error	Description
-224, "Incompatible type"	Invalid type

:INST:SENS:FULL

Applicability   PACE5000 E,

Short Form: :INST:SENS:FULL

Query Syntax

`:INSTrument:SENSor[x]:FULLscale?`

where x = is the sensor number (default is 1)

Function: Queries sensor full-scale value.

Response: Returns the full-scale value of the selected sensor

Description

This query returns the following:

x	PACE5000 E Sensor
1	Module 1: control sensor
2	Module 1: source pressure +ve
3	Module 1: source pressure –ve
4	Module 1: barometric sensor (optional)
5	Module 1: reference sensor (if fitted)

Example

Tx	Rx	Remarks
:INST:SENS:FULL?	:INST:SENS:FULL 20000.0000000, -1000.000000	Default - module 1 control sensor full-scale.
:INST:SENS2:FULL?	:INST:SENS2:FULL 70000.0000000, -1000.0000000	Returns module 1 +ve sensor full-scale.
:INST:SENS3:FULL?	:INST:SENS3:FULL 2000.0000000, -1000.0000000	Returns module 1 –ve source sensor full-scale.
:INST:SENS4:FULL?	:INST:SENS4:FULL 2000.0000000, 0.0000000	Returns module 1 barometric sensor full-scale.

Possible Errors

Error	Description
-224, "Incompatible parameter type"	Invalid sensor ID
-222, "Header suffix out of range"	Invalid CM ID
-183, "Hardware missing"	Required hardware is not present

:INST:SENS:NEGC

Applicability   PACE5000 E,

Short Form: :INST:SENS:NEGC

Query Syntax

`:INSTrument:SENSor[x]:NEGCal?`

where x = is the sensor number (default is 1)

Function: Queries sensor negative calibration.

Response: Boolean: 0 - negative calibration not supported. 1 - negative calibration supported.

Description

This command query returns sensor negative calibration supported or not supported. Used in DPI515 emulation; for PACE5000 E this query always returns '1'.

Example

Tx	Rx	Remarks
:INST:SENS:NEGC?	:INST:SENS:NEGC 1	Default - module 1 control sensor NEGCal
:INST:SENS1:NEGC?	:INST:SENS:NEGC 1	Returns control sensor (PACE5000 E)
:INST:SENS2:NEGC?	:INST:SENS2:NEGC 1	Returns module 1 +ve source sensor
:INST:SENS3:NEGC?	:INST:SENS3:NEGC 1	Returns module 1 –ve source sensor (PACE5000 E)
:INST:SENS4:NEGC?	:INST:SENS4:NEGC 1	Returns module 1 barometric sensor range (optional) NEGCal.
:INST:SENS5:NEGC?	:INST:SENS5:NEGC 1	Module 1: reference sensor (if fitted) (PACE5000 E)
:INST:SENS6:NEGC?	:INST:SENS6:NEGC 1	Reserved

Possible Errors

Error	Description
-222, "Header suffix out of range"	Invalid CM ID
-183, "Hardware missing"	Required hardware is not present

:INST:SENS:SN

Applicability   PACE5000 E,

Short Form: :INST:SENS:SN

Query Syntax

`:INSTrument:SENSor[x]:SN?`

where x = is the sensor number (default is 1)

Function: Queries the sensor serial number.

Response: Gets the serial number of the selected sensor [x].

Description

This query gets the serial number of the selected sensor.

Example

Tx	Rx	Remarks
:INST:SENS:SN?	:INST:SENS:SN 66423	

Possible Errors

Error	Description
-224, "Incompatible type"	Invalid type

:INST:SHOW

Applicability   PACE6000 E

Short Form: :INST:SHOW

Query Syntax

:INSTrument:SHOW?

Function: Query the selected CM in the instrument panel

Response: Integer: 1: P1, 2: P2, 3: Dual Channel

Description

This command allows the user to view the currently selected or active control module as displayed on the instrument panel.

Example

Tx	Rx	Remarks
:INSTrument:SHOW?	1	When P1 is selected
:INSTrument:SHOW?	2	When P2 is selected
:INSTrument:SHOW?	3	When dual channel mode is selected

Possible Errors

Error	Description
1003,"Invalid mode"	Invalid mode

:INST:SN

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:SN

Query Syntax

`:INSTrument:SN[x]?`

where x = is the hardware serial number (default is 1)

Function: Used to query the serial numbers of the instrument hardware and options.

Response: Integers representing serial numbers.

Description

This query returns the serial numbers of the hardware installed.

x	Description
1 or blank	PACE5000 E or PACE6000 E
2	Control module 1
3	Control module 2
4	Reserved
5	Reserved
6	Reserved
7	Reserved

Example

Tx	Rx	Remarks
:INST:SN?	:INST:SN 1234567	Query returns the instrument serial number.

Possible Errors

Error	Description
-109,"Incompatible type"	Invalid sensor ID
-310,"System error"	Operation failed

:INST:TASK

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK

Command Syntax

`:INSTrument:TASK[x]`
`BASic|LEAKtest|SWITchtest|BURSttest|DIVider|PRESet|TESTprog`
`ram|AERonautical`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (BASic, LEAKtest, SWITchtest, BURSttest, DIVider, PRESet, TESTprogram, AERonautical): Task name

Function: Sets the task

Query Syntax

`:INSTrument:TASK[x]?`

where x = is the module number (default is 1)

Function: Used to query the task set.

Response: Enumerated character representing task. 1. BASic 2. LEAKtest 3. BURSttest 4. DIVider 5.PRESet 6. TESTprogram 7. AERonautical

Description

This command sets the task and the query returns the task setting

Example

Tx	Rx	Remarks
:INST:TASK BURSttest		Set the task to BURST
:INST:TASK?	:INST:TASK BURSttest	Query returns the current task

Possible Errors

Error	Description
-108, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-200, "Execution error"	Operation not permitted
-241, "Hardware missing"	Failed to find the hardware

:INST:TASK:AERO:RANG

CAUTION: If PACE6000E is having two Control modules, in the aeronautical task one will be allocated for Altitude and other one will be allocated for Air speed. In the altitude CM only Altitude unit mode will be supported and in the air speed CM both airspeed and MACH unit modes are supported. If PACE6000E is having only one Control module the same CM can be used for all three modes altitude, airspeed and MACH.

Applicability   PACE6000 E

Short Form: :INST:TASK:AERO

Command Syntax

`:INSTrument:TASK[x]:AERO[:RANGe]`
`PRESsure|ALTitude|SPEed|MACH`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (PRESsure, ALTitude, SPEed, MACH): Unit mode

Function: Sets the aeronautical ranges: PRESsure,ALTitude,SPEed,MACH

Query Syntax

`:INSTrument:TASK[x]:AERO[:RANGe]?`

where x = is the module number (default is 1)

Function: Used to query the task set.

Response: Character - Enumerated: PRESsure,ALTitude,SPEed,MACH

Description

The command sets the unit mode: pressure, altitude, speed and MACH. The query returns the current unit mode. Pressure is allowed in all tasks except aeronautical task. Altitude, speed and MACH are only allowed in aeronautical task.

Example

Tx	Rx	Remarks
:INST:TASK?	INST:TASK BASIC	Task is in Basic
:INST:TASK:AERO?	:INST:TASK:AERO PRESsure	Query for the unit mode
:INST:TASK AERONAUTICAL	Task is in AERONAUTICAL	
:INST:TASK:AERO MACH		Sets the unit mode as MACH
:INST:TASK:AERO?	:INST:TASK:AERO MACH	Query for the current unit mode

:INST:TASK:BURS

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS

Command Syntax

`:INSTrument:TASK[x]:BURSt ABORt|STARt`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (ABORt, STARt):

Function: Set Burst test status.

Query Syntax

`:INSTrument:TASK[x]:BURSt?`

where x = is the module number (default is 1)

Function: Queries the burst test status

Response: Character - Enumerated : ABORt or STARt

Description

Command to set/get Burst test status. Burst test should be selected using command :INST:TASK

Example

Tx	Rx	Remarks
:INST:TASK:BURS START	None	Burst test is started
:INST:TASK:BURS?	:INST:TASK:BURS STARt	Query for burst status
:INST:TASK:BURS ABORt	None	Burst test is aborted

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-224, "Settings conflict"	Burst test already running

:INST:TASK:BURS:PRES

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:PRES

Query Syntax

`:INSTrument:TASK[x]:BURSt:PRESsure?`

where x = is the module number (default is 1)

Function: Ask for Burst pressure

Response: Double: Burst Pressure value.

Description

Command to get Burst pressure

Example

Tx	Rx	Remarks
:INST:TASK:BURS:PRES?	:INST:TASK:BURS:PRES 100	Return the current burst pressure value in the user selected pressure unit

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID

:INST:TASK:BURS:SETP:END

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:SETP:END

Command Syntax

`:INSTrument:TASK[x]:BURSt:SETPoint:END <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: BT end set point value within full-scale value

Function: Set end setpoint for burst test.

Query Syntax

`:INSTrument:TASK[x]:BURSt:SETPoint:END?`

where x = is the module number (default is 1)

Function: Ask for end setpoint for burst test.

Response: The end setpoint for burst test in the user selected pressure unit.

Description

Command to set/get end setpoint for burst test.

Example

Tx	Rx	Remarks
:INST:TASK:BURS:SETP:END?	:INST:TASK:BURS:SETP:END 1	Return the end setpoint for burst test
:INST:TASK:BURS:SETP:END 200		Set the end setpoint for burst test as 200
:INST:TASK:BURS:SETP:END?	:INST:TASK:BURS:SETP:END 200	Query returns the end setpoint for burst test as 200

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-230, "Memory error"	Set operation failed

:INST:TASK:BURS:SETP:END:MAX

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:SETP:END:MAX

Query Syntax

`:INSTrument:TASK[x]:BURSt:SETPoint:END:MAXimum?`

where x = is the module number (default is 1)

Function: This function returns the maximum value of burst test end setpoint.

Response: Maximum value of burst test end setpoint in the user selected pressure unit.

Description

This function returns the maximum value of burst test end setpoint.

Example

Tx	Rx	Remarks
INST:TASK:BURS:SETP:END:MAX?	INST:TASK:BURS:SETP:END:MAX 3675.000000	Get the maximum value of burst test end setpoint.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-350, "Hardware missing"	Hardware not present

:INST:TASK:BURS:SETP:END:MIN

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:SETP:END:MIN

Query Syntax

`:INSTrument:TASK[x]:BURSt:SETPoint:END:MINimum?`

where x = is the module number (default is 1)

Function: Returns minimum value of burst test end setpoint.

Response: Minimum value of burst test end setpoint in the user selected pressure unit..

Description

This function returns the minimum value of burst test End setpoint.

Example

Tx	Rx	Remarks
:INST:TASK:BURS:SETP:END:MIN?	:INST:TASK:BURS:SETP:END:MIN -1100	Get the minimum value of burst test end setpoint.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-350, "Hardware missing"	Hardware not present

:INST:TASK:BURS:SETP:STAR

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:SETP:STAR

Command Syntax

`:INSTrument:TASK[x]:BURSt:SETPoint:STARt <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: burst test setpoint value in current pressure unit within full-scale range

Function: Set start setpoint for burst test.

Query Syntax

`:INSTrument:TASK[x]:BURSt:SETPoint:STARt?`

where x = is the module number (default is 1)

Function: Ask for start setpoint for burst test.

Response: The start setpoint for burst test in the user selected pressure unit.

Description

Command to set or get start setpoint for burst test.

Example

Tx	Rx	Remarks
:INST:TASK:BURS:SETP:STAR T?	:INST:TASK:BURS:SETP:STAR T 1000	Return the start setpoint for burst test
:INST:TASK:BURS:SETP:STAR T 200		Set the start setpoint for burst test as 200
:INST:TASK:BURS:SETP:STAR T?	:INST:TASK:BURS:SETP:STAR T 200	Return the start setpoint for burst test as 200

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-178, "Memory error"	Set operation failed

:INST:TASK:BURS:SETP:STAR:MAX

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:SETP:STAR:MAX

Query Syntax

:INSTrument:TASK[x]:BURSt:SETPoint:STARt:MAXimum?

where x = is the module number (default is 1)

Function: This function returns the maximum value of burst test Start setpoint.

Response: Maximum value of start setpoint in the user selected pressure unit.

Description

This function returns the maximum value of burst test Start setpoint.

Example

Tx	Rx	Remarks
INST:TASK:BURS:SETP:STAR: MAX?	INST:TASK:BURS:SETP:STAR: MAX 3675	Get the maximum value of burst test start setpoint

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-224, "Hardware missing"	Hardware not available

:INST:TASK:BURS:SETP:STAR:MIN

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:SETP:STAR:MIN

Query Syntax

`:INSTrument:TASK[x]:BURSt:SETPoint:STARt:MINimum?`

where x = is the module number (default is 1)

Function: This function returns the minimum value of burst test Start setpoint.

Response: Minimum value of burst test start setpoint in the user selected pressure unit.

Description

This function returns the minimum value of burst test Start setpoint.

Example

Tx	Rx	Remarks
INST:TASK:BURS:SETP:STAR:MIN?	INST:TASK:BURS:SETP:STAR:MIN -1100	Get the minimum value of burst test start setpoint

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-224, "Hardware missing"	Hardware not available

:INST:TASK:BURS:SLEW:END

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:SLEW:END

Command Syntax

`:INSTrument:TASK[x]:BURSt:SLEWrate:END <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: BT end slew rate value within the full-scale range.

Function: Set end slew rate for burst test.

Query Syntax

`:INSTrument:TASK[x]:BURSt:SLEWrate:END?`

where x = is the module number (default is 1)

Function: Ask for end slew rate for burst test.

Response: The end slew rate value in the user selected pressure unit/seconds.

Description

Command to set/get end slew rate for burst test.

Example

Tx	Rx	Remarks
:INST:TASK:BURS:SLEW:END?	:INST:TASK:BURS:SLEW:END 1	Return the end slew rate for burst test
:INST:TASK:BURS:SLEW:END 20		Set the end slew rate for burst test as 20
:INST:TASK:BURS:SLEW:END?	:INST:TASK:BURS:SLEW:END 20	Return the end slew rate for burst test as 20

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-178, "Memory error"	Set operation failed

:INST:TASK:BURS:SLEW:STAR

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:SLEW:STAR

Command Syntax

`:INSTrument:TASK[x]:BURSt:SLEWrate:STARt <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: BT start slew rate value within the full-scale range.

Function: Set start slew rate for burst test.

Query Syntax

`:INSTrument:TASK[x]:BURSt:SLEWrate:STARt?`

where x = is the module number (default is 1)

Function: Ask for start slew rate for burst test.

Response: The start slew rate value in the user selected pressure unit/seconds.

Description

Command to set/get the start slew rate for burst test.

Example

Tx	Rx	Remarks
:INST:TASK:BURS:SLEW:STAR ?	:INST:TASK:BURS:SLEW:STAR 1	Return the start slew rate for burst test
:INST:TASK:BURS:SLEW:STAR 100		Set the start slew rate for burst test as 100
:INST:TASK:BURS:SLEW:STAR ?	:INST:TASK:BURS:SLEW:STAR 100	Return the start slew rate for burst test as 100

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-178, "Memory error"	Set operation failed

:INST:TASK:BURS:SMAC

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:SMAC

Query Syntax

`:INSTrument:TASK[x]:BURSt:SMAChine?`

where x = is the module number (default is 1)

Function: Queries the Burst state machine state.

Response: character enumerated - READy, STARt, END, RETurn, COMPlete

Description

Command to get Burst state machine state.

Example

Tx	Rx	Remarks
:INST:TASK:BURS:SMAC?	:INST:TASK:BURS:SMAC READy	Return the burst test state machine

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID

:INST:TASK:BURS:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:BURS:STAT

Query Syntax

`:INSTrument:TASK[x]:BURSt:STATus?`

where x = is the module number (default is 1)

Function: Ask for Burst state test status.

Response: Character - Enumerated: NOERROR,

   BURSTPRESSUREFOUND,

   ENDEDNOBURST,

   ENDEDEARLYBURST,

   STOPPEDBYUSER,

   IDLETIMEOUTTRIGGERED,

   NOTAVAILABLE

Description

Command to get Burst state test status.

Example

Tx	Rx	Remarks
:INST:TASK:BURS:STAT?	:INST:TASK:BURS:STAT NOERROR	Return the burst test status

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID

:INST:TASK:LKT:CONT

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:CONT

Command Syntax

`:INSTrument:TASK[x]:LKT:CONT <hours>, <minute>, <seconds>`

where x = is the module number (default is 1)

Parameter: Integer: Hours, Integer: Minutes, Integer: Seconds

Function: Set Control dwell time

Query Syntax

`:INSTrument:TASK[x]:LKT:CONT?`

where x = is the module number (default is 1)

Function: Queries the Control dwell time

Response: Time in hh mm and ss

Description

The command to set or get the Control dwell time

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:CONT?	:INST:TASK:LKT:CONT 0, 5, 0	Queries Control dwell time (hh,mm,ss)
:INST:TASK1:LKT:CONT 0,4,0		Sets module 1 Control dwell time

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-223, "Memory error"	Set operation failed
-241, "Hardware missing"	Failed to find the hardware
-410, "Query INTERRUPTED"	Operation is busy

:INST:TASK:LKT:COUN

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:COUN

Command Syntax

:INSTrument:TASK[x]:LKT:COUNt <value>

where x = is the module number (default is 1)

Parameter: Numerical Real: no of leak tests

Function: Command sets the number of leak tests.

Query Syntax

:INSTrument:TASK[x]:LKT:COUNt?

where x = is the module number (default is 1)

Function: Queries the number of leak tests.

Response: Number of leak tests.

Description

This command sets and queries the number of leak tests to be run. Supported values are 1 or 2.

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:COUNT?	:INST:TASK:LKT:COUNT 2	Queries Module 1 number of leak tests

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-224, "Illegal parameter value"	Set operation failed
-350, "Hardware missing"	Missing or unavailable hardware
-410, "Execution error"	Leak test is already running

:INST:TASK:LKT:ERR

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:ERR

Query Syntax

:INSTrument:TASK[x]:LKT:ERRor?

where x = is the module number (default is 1)

Function: To check leak test error status.

Response: Returns leak test error status in character enumerated format as indicated above

NOERROR,

DETECTEDGROSSLEAK,

ALREADYRUNNING,

TASKNOTAVAILABLE,

COMPLETED, STOPPED.

Description

Query command to check leak test error status.

Example

Tx	Rx	Remarks
:INST:TASK:LKT:ERROR?	:INST:TASK:LKT:ERROR NOERROR	Return the leak test error status

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-350, "Hardware missing"	Missing or unavailable hardware

:INST:TASK:LKT:GLTH

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:GLTH

Command Syntax

`:INSTrument:TASK[x]:LKT:GLTHreshold <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Gross leak threshold value within the full-scale range

Function: Command to set the gross leak threshold value

Query Syntax

`:INSTrument:TASK[x]:LKT:GLTHreshold?`

where x = is the module number (default is 1)

Function: Command to query the gross leak threshold value

Response: The gross leak threshold user settings.

Description

Command to set and query gross leak threshold value

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:GLTH 5		Sets the gross leak threshold rate to 5
:INST:TASK1:LKT:GLTH?		Queries module 1 gross leak threshold rate

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-224, "Illegal parameter value"	Set operation failed
-350, "Hardware missing"	Missing or unavailable hardware
-420, "Query INTERRUPTED"	Leak test is already running

:INST:TASK:LKT:GROS

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:GROS

Query Syntax

`:INSTrument:TASK[x]:LKT:GROSs?`

where x = is the module number (default is 1)

Function: Queries the gross leak rate reading measured during Thermal Stability Dwell time.

Response: Double : Gross leak rate

Description

This command gets the gross leak rate reading measured during Thermal Stability Dwell time.

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:GROSs?	:INST:TASK1:LKT:GROS 2.5	Response for the gross leak rate for first CM
:INST:TASK2:LKT:GROSs?	:INST:TASK2:LKT:GROSs 1.5	Response from the second CM

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-101, "Out of memory"	Validation failed or data unavailable
-350, "Hardware missing"	Missing or unavailable hardware

:INST:TASK:LKT:MEAS

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:MEAS

Command Syntax

`:INSTrument:TASK[x]:LKT:MEAS <hours>, <minutes>, <second>`

where x = is the module number (default is 1)

Parameter: Integer: Hours, Integer: Minutes, Integer: Seconds

Function: Set Measure dwell time

Query Syntax

`:INSTrument:TASK[x]:LKT:MEAS?`

where x = is the module number (default is 1)

Function: Queries the Measure dwell time

Response: The measure dwell time in hh mm and ss.

Description

The command to set or get the measure dwell time

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:MEAS?	:INST:TASK:LKT:MEAS 0, 5, 0	Queries module 1 Measure dwell time
:INST:TASK1:LKT:MEAS 0,2,0		Sets module 1 Measure dwell time

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-223, "Internal data base error"	Set operation failed
-241, "Hardware missing"	Failed to find the hardware
-410, "Query INTERRUPTED"	Operation is busy

:INST:TASK:LKT:RES

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:RES

Query Syntax

`:INSTrument:TASK[x]:LKT:RES[y]?`

where x = is the module number (default is 1) , y = is the Result value from 1 to 6 (default is 1)

Function: Queries module x Test Pressure y result

Response: Double: Test Pressure y result

Description

Queries module x Test Pressure y result

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:RES1?	:INST:TASK:LKT:RES1 0.0025400	Queries module 1 Test Pressure 1 Leak rate
:INST:TASK1:LKT:RES2?	:INST:TASK:LKT:RES2 0.0025400	Queries module 1 Test Pressure 2 Leak rate
:INST:TASK1:LKT:RES3?	:INST:TASK:LKT:RES3 0.0025400	Queries module 1 Test Pressure 1 reading at the start of measured dwell time
:INST:TASK1:LKT:RES4?	:INST:TASK:LKT:RES4 0.0025400	Queries module 1 Test Pressure 2 reading at the start of measured dwell time
:INST:TASK1:LKT:RES5?	:INST:TASK:LKT:RES5 0.0025400	Queries module 1 Test Pressure 1 reading at the end of measured dwell time
:INST:TASK1:LKT:RES6?	:INST:TASK:LKT:RES6 0.0025400	Queries module 1 Test Pressure 2 reading at the end of measured dwell time
:INST:TASK2:LKT:RES1?	:INST:TASK:LKT:RES1 0.0025400	Queries module 2 Test Pressure 1 Leak rate
:INST:TASK2:LKT:RES2?	:INST:TASK:LKT:RES2 0.0025400	Queries module 2 Test Pressure 2 Leak rate

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID

:INST:TASK:LKT:STAR

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:STAR

Command Syntax

`:INSTrument:TASK[x]:LKT:STAR 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: 1: Start, 0: Stop

Function: To start or stop leak task

Query Syntax

`:INSTrument:TASK[x]:LKT:STAR?`

where x = is the module number (default is 1)

Function: Queries the leak task status

Response: Boolean: 0: Stopped, 1: Started

Description

The command to start or stop the leak test.

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:STAR?	:INST:TASK1:LKT:STAR 0	Queries module 1 leak task status, not in progress
:INST:TASK1:LKT:STAR 1	None	Starts module 1 leak task
:INST:TASK1:LKT:STAR?	:INST:TASK1:LKT:STAR 1	Queries module 1 leak task status, stated.

Possible Errors

Error	Description
-108, "Header suffix out of range"	Validation failed
-222, "Data out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware
1004, "Test Already Running"	Leak test already running

:INST:TASK:LKT:THER

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:THER

Command Syntax

`:INSTrument:TASK[x]:LKT:THER <hours>, <minute>, <second>`

where x = is the module number (default is 1)

Parameter: Integer: Hours, Integer: Minutes, Integer: Second

Function: Set thermal stabilization time

Query Syntax

`:INSTrument:TASK[x]:LKT:THER?`

where x = is the module number (default is 1)

Function: Queries the thermal stabilization time

Response: Time in hh mm and ss

Description

The command set/get the thermal stabilization time.

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:THER?	:INST:TASK:LKT:THER 0, 2, 0	Queries module 1 the thermal stabilization time
:INST:TASK1:LKT:THER 0,1,0		Sets module 1 thermal stabilization time

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-223, "Internal data base error"	Set operation failed
-241, "Hardware missing"	Failed to find the hardware
-410, "Query INTERRUPTED"	Operation is busy

:INST:TASK:LKT:TIME

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:TIME

Query Syntax

`:INSTrument:TASK[x]:LKT:TIME?`

where x = is the module number (default is 1)

Function: Queries the leak test active timings

Response: Leak test active timing in the below format x, i, hh, mm, ss.

Description

:INST:TASK:LKT:TIME x, i, hh, mm, ss Where: x = 0 (stopped), 1 = (running) i = 0, no timer running i = 1, control dwell active time (TP1) i = 2, thermal stability active time (TP1) i = 3, measure dwell active time (TP1) i = 4, control dwell active time(TP2) i = 5, thermal stability active time (TP2) i = 6, measure dwell active time (TP2)

Example

Tx	Rx	Remarks
:INST:TASK:LKT:TIME?	:INST:TASK:LKT:TIME 1, 0, 0, 0,0	Queries the leak test active timings

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:INST:TASK:LKT:TPEN

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:TPEN

Command Syntax

`:INSTrument:TASK[x]:LKT:TPEN <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: End pressure value in current pressure unit within the full-scale range

Function: Set End Pressure

Query Syntax

`:INSTrument:TASK[x]:LKT:TPEN?`

where x = is the module number (default is 1)

Function: Queries the end pressure

Response: Double: End pressure

Description

The command to set or get the End Pressure

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:TPEN?	:INST:TASK:LKT:TPEN 0.0	Queries Module 1 End Pressure
:INST:TASK1:LKT:TPEN 1.0	None	Sets End Pressure value = 1.0

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-410, "Query INTERRUPTED"	Operation is busy
-223, "Memory error"	Set operation failed
-241, "Hardware missing"	Failed to find the hardware

:INST:TASK:LKT:TPR1

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:TPR1

Command Syntax

`:INSTrument:TASK[x]:LKT:TPR1 <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: test pressure value in current pressure unit within the full-scale range

Function: Set the Test pressure 1

Query Syntax

`:INSTrument:TASK[x]:LKT:TPR1?`

where x = is the module number (default is 1)

Function: Queries the Test pressure 1

Response: Double: Pressure 1 value.

Description

The command to set or get the Test pressure 1

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:TPR1?	:INST:TASK:LKT:TPR 0.0	Queries Module 1 Test Pressure 1
:INST:TASK1:LKT:TPR1 -50	None	Sets Module 1 Test Pressure 1 value = -50
:INST:TASK1:LKT:TPR1?	:INST:TASK:LKT:TPR 0.0	Queries Module 1 Test Pressure 1 as -50

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-224, "Illegal parameter value"	Set operation failed
-241, "Hardware missing"	Failed to find the hardware
-410, "Query INTERRUPTED"	Operation is busy

:INST:TASK:LKT:TPR2

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:TPR2

Command Syntax

`:INSTrument:TASK[x]:LKT:TPR2 <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Test pressure 2 in current pressure unit within the full-scale range

Function: Set the Test Pressure 2

Query Syntax

`:INSTrument:TASK[x]:LKT:TPR2?`

where x = is the module number (default is 1)

Function: Queries the Test Pressure 2 value

Response: Double: Pressure 2 value.

Description

The command to set or get the Test pressure 2

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:TPR2?	:INST:TASK:LKT:TPR2 4.0000000	Queries Module 1 Test Pressure 2
:INST:TASK1:LKT:TPR2 70	None	Sets Module 1 Test Pressure 2 value = 70
:INST:TASK1:LKT:TPR2?	:INST:TASK:LKT:TPR2 70.0000000	Queries Module 1 Test Pressure 2 as 70

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-224, "Illegal parameter value"	Set operation failed
-241, "Hardware missing"	Failed to find the hardware
-410, "Query INTERRUPTED"	Operation is busy

:INST:TASK:LKT:UNIT

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:TASK:LKT:UNIT

Command Syntax

`:INSTrument:TASK[x]:LKT:UNIT <value>`

where x = is the module number (default is 1)

Parameter: Integer: Leak rate unit 0 - per sec, 1 - per min

Function: Set Leak rate unit

Query Syntax

`:INSTrument:TASK[x]:LKT:UNIT?`

where x = is the module number (default is 1)

Function: Queries the leak rate unit

Response: Integer: 0 - Per second , 1 - Per minute

Description

The command to set or get the leak rate unit

Example

Tx	Rx	Remarks
:INST:TASK1:LKT:UNIT?	:INST:TASK:LKT:UNIT 0	Queries module 1 Leak rate = per second
:INST:TASK1:LKT:UNIT 1		Sets leak rate = per minute

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-223, "Internal data base error"	Set operation failed
-241, "Hardware missing"	Failed to find the hardware
-410, "Query INTERRUPTED"	Operation is busy

:INST:UNIT

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:UNIT

Query Syntax

`:INSTrument:UNIT[x]?`

where x = is the unit number (default is 1)

Function: Used to query the units of measurement available. This does not query the current unit in use (refer to the 'UNIT' family of commands/queries).

Response: Enumerated character string.

Description

This command sets the units of measurement available to the instrument

Example

Tx	Rx
:INST:UNIT1?	:INST:UNIT MBAR
:INST:UNIT2?	:INST:UNIT2 BAR
:INST:UNIT3?	:INST:UNIT3 PA
:INST:UNIT4?	:INST:UNIT4 HPA
:INST:UNIT5?	:INST:UNIT5 KPA
:INST:UNIT6?	:INST:UNIT6 MPA
:INST:UNIT7?	:INST:UNIT7 MMHG
:INST:UNIT8?	:INST:UNIT8 CMHG
:INST:UNIT9?	:INST:UNIT9 MHG
:INST:UNIT10?	:INST:UNIT10 INHG
:INST:UNIT11?	:INST:UNIT11 KG/CM2
:INST:UNIT12?	:INST:UNIT12 KG/M2
:INST:UNIT13?	:INST:UNIT13 MMH2O
:INST:UNIT14?	:INST:UNIT14 CMH2O
:INST:UNIT15?	:INST:UNIT15 MH2O
:INST:UNIT16?	:INST:UNIT16 MMH2O20
:INST:UNIT17?	:INST:UNIT17 CMH2O20
:INST:UNIT18?	:INST:UNIT18 MH2O20
:INST:UNIT19?	:INST:UNIT19 TORR
:INST:UNIT20?	:INST:UNIT20 ATM
:INST:UNIT21?	:INST:UNIT21 PSI
:INST:UNIT22?	:INST:UNIT22 LB/FT2
:INST:UNIT23?	:INST:UNIT23 INH2O4
:INST:UNIT24?	:INST:UNIT24 INH2O
:INST:UNIT25?	:INST:UNIT25 INH2O60
:INST:UNIT26?	:INST:UNIT26 FTH2O4
:INST:UNIT27?	:INST:UNIT27 FTH2O
:INST:UNIT28?	:INST:UNIT28 FTH2O60
:INST:UNIT29?	:INST:UNIT29 USER1
:INST:UNIT30?	:INST:UNIT30 USER2
:INST:UNIT31?	:INST:UNIT31 USER3
:INST:UNIT32?	:INST:UNIT32 USER4

Possible Errors

Error	Description
-207,"Suffix out of range"	Invalid suffix

:INST:VERS

Applicability   PACE5000 E, PACE6000 E

Short Form: :INST:VERS

Query Syntax

`:INSTrument:VERSion[x]?`

where x = is the software version (default is 1)

Function: Queries the software versions of the instrument and options

Response: Returns strings representing the software version

Description

x	Software Item
1	Instrument main code
2	Reserved
3	Reserved
4	Controller 1 main code
5	Controller 1 Boot code
6	Controller 2 main code
7	Controller 2 Boot code

Example

Tx	Rx	Remarks
:INST:VERS?	:INST:VERS DK0558 v00.00.02	Query returns the instrument version

Possible Errors

Error	Description
-200,"Memory error"	Get operation failed
-201,"Header suffix out of range"	Invalid option

OUTPut

Description

The OUTPut subsystem turns the pressure controller on/off and controls the state of the logical outputs.

:OUTP:AERO:CONT

Applicability   PACE6000 E

Short Form: :OUTP:AERO:CONT

Command Syntax

`:OUTPut[x]:AERO:CONTrol`

where x = is the module number (default is 1)

Function: Set the CM to control mode

Description

Aeronautical control command set both CM to control mode if the UI is in dual screen, otherwise set control mode to the active controller.

Example

Tx	Rx	Remarks
:OUTP:AERO:CONT		Set the CM to control mode

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-241, "Hardware missing"	Failed to find the hardware

:OUTP:AERO:GRO

Applicability   PACE5000 E, PACE6000 E

Short Form: :OUTP:AERO:GRO

Command Syntax

`:OUTPut[x]:AERO:GROund ABORt|STARt`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (ABORt, STARt): STArt: CM to go to gorund, ABORt: cancel the go to ground

Function: To set CM to Go To Ground

Description

Command to set both CM to 'Go To Ground' if the UI is in dual screen, otherwise set 'Go To Ground' to the active controller.

Example

Tx	Rx	Remarks
:OUTP:AERO:GRO STARt		Set the CM to go to ground

:OUTP:AERO:HOLD

Applicability   PACE6000 E

Short Form: :OUTP:AERO:HOLD

Command Syntax

`:OUTPut[x]:AERO:HOLD`

where x = is the module number (default is 1)

Function: Set to initiate 'Hold' sequence for the specified controller.

Description

Command to initiate 'Hold' sequence for the specified controller.

Example

Tx	Rx	Remarks
:OUTP:AERO:HOLD		set to initiate hold sequence for first controller

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-222, \"Data out of range\"	Input validation failed
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:OUTP:AERO:MEAS

Applicability   PACE6000 E

Short Form: :OUTP:AERO:MEAS

Command Syntax

:OUTPut[x]:AERO:MEASure

where x = is the module number (default is 1)

Function: Set the CM to measure mode

Description

Command to set both CM to measure mode if the UI is in dual screen, otherwise set measure mode to the active controller.

Example

Tx	Rx	Remarks
:OUTP:AERO:MEAS		Set the CM to measure mode

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Validation failed
-241, "Hardware missing"	Failed to find the hardware

:OUTP:AERO:RES

Applicability   PACE6000 E

Short Form: :OUTP:AERO:RES

Command Syntax

`:OUTPut[x]:AERO:RESume`

where x = is the module number (default is 1)

Function: To set initiate 'Resume' sequence for the specified controller.

Description

Command to initiate 'Resume' sequence for the specified controller.

Example

Tx	Rx	Remarks
:OUTP:AERO:RES		Set initiateresume sequence for the first controller

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-222, \"Data out of range\"	Input validation failed
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:OUTP:ISOL:STAT

CAUTION: Opening a module output isolation valve with high-pressure in the external system can cause PACE to malfunction. Equalize the external system pressure to zero gauge or use other means to identify the external system pressure, before opening the isolation valve.

Applicability   PACE5000 E, PACE6000 E

Short Form: :OUTP:ISOL:STAT

Command Syntax

`:OUTPut[x]:ISOLation:STATe 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: valve state 0- closed, 1- open

Function: Turns isolation valve ON and OFF. 0 (OFF) - turn isolation valve of the module [x] OFF, 1(ON) - turn isolation valve of the module [x] ON

Query Syntax

`:OUTPut[x]:ISOLation:STATe?`

where x = is the module number (default is 1)

Function: Asks for isolation valve ON/OFF status.

Response: Boolean: 0 - Isolation valve OFF (Closed/Isolated), 1 - Isolation valve ON (Open/Non-isolated)

Description

The output port isolation valve of module 1 or module 2 can be queried and switched on and off.

Example

	Module 1	Module 2	Remarks
TX	:OUTP1:ISOL:STAT 1	:OUTP2:ISOL:STAT 1	Opens the output port isolation valve
TX	:OUTP1:ISOL:STAT?	:OUTP2:ISOL:STAT?	Queries the current state of the valve
RX	:OUTP:ISOL:STAT 1	:OUTP2:ISOL:STAT 1	Query reply = valve open
TX	:OUTP1:ISOL:STAT 0	:OUTP2:ISOL:STAT 0	Closes the output port isolation valve
TX	:OUTP1:ISOL:STAT?	:OUTP2:ISOL:STAT?	Queries the current state of the valve
RX	:OUTP:ISOL:STAT 0	:OUTP2:ISOL:STAT 0	Query reply = valve closed

Possible Errors

Error	Description
-108, "Header suffix out of range"	Invalid control module ID
-222, "Incompatible type"	Invalid valve type
-241, "Hardware missing"	Failed to find the hardware

:OUTP:MODE

Applicability   PACE5000 E, PACE6000 E

Short Form: :OUTP:MODE

Command Syntax

:OUTPut[x]:MODE ACTive|PASSive|GAUGe

where x = is the module number (default is 1)

Parameter: Character - Enumerated (ACTive, PASSive, GAUGe): Controller mode

Function: Sets control mode

Query Syntax

:OUTPut[x]:MODE?

where x = is the module number (default is 1)

Function: Asks for state of the controller control mode setting.

Response: Character - Enumerated: ACTive, PASSive, GAUGe

Description

Queries or sets the pressure controller control mode: Active or Passive or Gauge

Example

Tx	Rx	Remarks
:OUTP1:MODE?	:OUTP:MODE ACT	Module 1 = Active control mode
:OUTP1:MODE GAUG	None	None
:OUTP1:MODE?	:OUTP:MODE GAUG	Module 1 = Gauge control mode
:OUTP1:MODE PASS	None	None
:OUTP1:MODE?	:OUTP:MODE PASS	Module 1 = Passive control mode
:OUTP1:MODE ACT	None	None
:OUTP1:MODE?	:OUTP:MODE ACT	Module 1 = Active control mode
:OUTP2:MODE?	:OUTP2:MODE ACT	Module 2 = Active control mode
:OUTP2:MODE GAUG	None	None
:OUTP2:MODE?	:OUTP2:MODE GAUG	Module 2 = Gauge control mode
:OUTP2:MODE PASS	None	None
:OUTP2:MODE?	:OUTP2:MODE PASS	Module 2 = Passive control mode
:OUTP2:MODE ACT	None	None
:OUTP2:MODE?	:OUTP2:MODE ACT	Module 2 = Active control mode

Possible Errors

Error	Description
-222, "Data out of range"	Validation failed
-114, "Header suffix out of range"	Invalid control module ID
-141, "Internal data base error"	Set operation failed
-241, "Hardware missing"	Failed to find the hardware

:OUTP:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :OUTP

Command Syntax

:OUTPut[x][:STATe] 0|1

where x = is the module number (default is 1)

Parameter: Boolean: 0 - Disable , 1 - Enable

Function: Turn the pressure controller on/of

Query Syntax

:OUTPut[x][:STATe]?

where x = is the module number (default is 1)

Function: Asks for state of pressure controller

Response: Boolean: 0 - Controller off, 1 - Turns controller on

Description

Sets or queries the state of the pressure controller.

Example

Tx	Rx	Remarks
:OUTP:STAT?	:OUTP:STAT 0	The module 1 controller currently turned off.
:OUTP:STAT ON/1	None	To turn the module 1 controller on
:OUTP:STAT OFF/0	None	To turn the module 1 controller off:

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-224, "Incompatible type"	Invalid mode
-241, "Hardware missing"	Failed to find the hardware

SENSe

Description

The SENSe subsystem selects, configures, and queries the measurement functions of the instrument.

:SENS:AER

Applicability   PACE6000 E

Short Form: :SENS:AER

Query Syntax

:SENSe:AERonautical?

Function: This query reads the aeronautical sensor.

Response: This returns the Static pressure (Ps), Impact or Differential pressure (Qc) and Total pressure (Pt) values.

Description

Queries the Ps, Qc and Pt reading for the aeronautical sensor in the selected aeronautical units.

Note: If the instrument is not in aeronautical mode it returns an error: -221, "Settings conflict".

Example

Tx	Rx	remarks
:SENSe:AERonautical?	:SENS:AER 2023.0055542,0.0000000,2023.0055542	Query return the current Ps,Qc and Pt readings

Possible Errors

Error	Description
-241, \"Hardware missing\"	Failed to find the hardware

:SENS:ALT

Applicability   PACE6000 E

Short Form: :SENS:ALT

Query Syntax

`:SENSe:ALTitude?`

Function: This query reads the aeronautical sensor.

Response: A decimal, altitude reading in the current aeronautical units.

Description

Queries the altitude reading for the aeronautical sensor in the selected aeronautical units.

Note: If the instrument is not in aeronautical mode it returns an error: -221, "Settings conflict".

Example

Tx	Rx	Remarks
:SENSE:ALT?	:SENS:ALT 5500.1015625	the current altitude in current altitude units

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	out of Range
-241, "Hardware missing"	Failed to find the hardware

:SENS:ALT:INL

Applicability   PACE6000 E

Short Form: :SENS:ALT:INL

Query Syntax

`:SENSe[x]:ALTitude:INLimits?`

where x = is the module number (default is 1)

Function: Queries the the altitude reading and in limits state.

Response: First parameter - current pressure.Second parameter - in limit(0 = not in limits, 1 = in limits)

Description

Query the altitude reading and in limits state.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENS:ALT:INL?	:SENS:ALT:INL 500.0000000,0	Query returns the current altitude reading and in limits state.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Incompatible type"	Invalid mode
-241, "Hardware missing"	Failed to find the hardware

:SENS:ALT:INL:TIME

Applicability   PACE6000 E

Short Form: :SENS:ALT:INL:TIME

Query Syntax

`:SENSe[x]:ALTitude:INLimits:TIME?`

where x = is the module number (default is 1)

Function: Queries the in-limit time to setpoint for Altitude mode.

Response: Double: Number representing in-limits time in seconds.

Description

Query the time to setpoint for Altitude mode.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENS:ALT:INL:TIME?	:SENS:ALT:INL:TIME 60	query returns the time to setpoint for Altitude mode.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Incompatible type"	Invalid mode
-241, "Hardware missing"	Failed to find the hardware

:SENS:ALT:RANG

Applicability   PACE6000 E

Short Form: :SENS:ALT:RANG

Query Syntax

`:SENSe[x]:ALTitude:RANGe?`

where x = is the module number (default is 1)

Function: This queries the range of the aeronautical sensor.

Response: A string, representing altitude full scale in feet. Example: 55000ft

Description

Query the range of the aeronautical sensor in pressure units

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENS:ALT:RANG?	:SENS:ALT:RANG "55000ft"	Queries returns the current range of the aeronautical sensor.

:SENS:ALT:SLEW

Applicability   PACE6000 E

Short Form: :SENS:ALT:SLEW

Query Syntax

`:SENSe[x]:ALTitude:SLEW?`

where x = is the module number (default is 1)

Function: Queries the rate set-point for altitude slew.

Response: Decimal number representing the rate set-point for altitude slew (rate of climb) or (vertical speed) in current units.

Description

Query the rate of change of altitude (rate of climb) or (vertical speed) per second or minute.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict

Example

Tx	Rx	Remarks
:SENS:ALT:SLEW?	:SENS:ALT:SLEW 100	Returns the rate of change of altitude in sec or min

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Incompatible type"	Invalid mode
-241, "Hardware missing"	Failed to find the hardware

:SENS:MACH

Applicability   PACE6000 E

Short Form: :SENS:MACH

Query Syntax

:SENSe:MACH?

Function: This query reads the aeronautical sensors.

Response: A decimal reading in MACH number

Description

Queries the MACH reading.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENSE:MACH?	:SENS:MACH 0.0000000	Returns the MACH reading

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-222, \"Data out of range\"	Input validation failed
-241, \"Hardware missing\"	Failed to find the hardware

:SENS:MACH:INL

Applicability   PACE6000 E

Short Form: :SENS:MACH:INL

Query Syntax

:SENSe[x]:MACH:INLimits?

where x = is the module number (default is 1)

Function: Queries the Mach reading and in limits state for Mach mode.

Response: Double value representing MACH reading, in-limit(0 - not in limits, 1 - in-limits).

Description

Query the Mach reading and in limits state for Mach mode.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENS:MACH:INL?	:SENS:MACH:INL 0.0000000,0	Querry returns the current Mach reading and in limits state for Mach mode.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware
-294, "Incompatible type"	Operation not allowed in this mode

:SENS:MACH:INL:TIME

Applicability   PACE6000 E

Short Form: :SENS:MACH:INL:TIME

Query Syntax

`:SENSe[x]:MACH:INLimits:TIME?`

where x = is the module number (default is 1)

Function: Queries the time to setpoint for Mach mode

Response: Number representing MACH in-limits time in seconds.

Description

Query the time to setpoint for Mach mode.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENS:MACH:INL:TIME?	:SENS:MACH:INL:TIME 0	Query returns the current the time to setpoint for Mach mode.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware
-294, "Incompatible type"	Operation not allowed in this mode

:SENS:MACH:RANG

Applicability   PACE6000 E

Short Form: :SENS:MACH:RANG

Query Syntax

`:SENSe[x]:MACH:RANGe?`

where x = is the module number (default is 1)

Function: This queries the MACH range.

Response: A string (number), representing MACH range.

Description

Queries the MACH range reading.

Example

Tx	Rx	Remarks
:SENS:MACH:RANG?	:SENS:MACH:RANG "0.97882Mach"	Query returns the current MACH range.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module

:SENS:MACH:SLEW

Applicability   PACE6000 E

Short Form: :SENS:MACH:SLEW

Query Syntax

`:SENSe[x]:MACH:SLEW?`

where x = is the module number (default is 1)

Function: Queries the rate of change of MACH.

Response: A decimal, reading/second in MACH.

Description

The query gets the rateof change of MACH.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENS:MACH:SLEW?	:SENS:MACH:SLEW 1	Query returns the current reading/sec in mach.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware
-294, "Incompatible type"	Operation not allowed in this mode

:SENS:PRES

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS

Query Syntax

`:SENSe[x][:PRESsure]?`

where x = is the module number (default is 1)

Function: This query reads the sensor which has been selected by the :SENS:PRES:RANG command.

Response: A decimal, pressure reading in the current units.

Description

Queries the pressure reading for the selected sensor in the selected units. The sensor selected can be changed using the :SENSe[:PRESsure]:RANGe command. PACE5000 E and PACE6000 E for alternative query to :SENS:PRES? that does not require preselection of the sensor using the :SENS:PRES:RANG command refer to :SENS:PRESS:BAR, :SENS:PRES:CONT, :SENS:PRES:PSE and :SENS:PRES:REF and to directly query the pressure values of the +ve and –ve pressure supply source and vacuum sensors refer to the :SOUR:PRES:COMP query.

Example

Tx	Rx	Remarks
:SENS1:PRES?	:SENS:PRES 3616.9282227	Pressure value from the first module
:SENS2:PRES?	:SENS2:PRES 3617.1921387	Pressure value from the second module

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-400, "Query error"	Invalid or unavailable reading
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:ALAR:HIGH

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:ALAR:HIGH

Command Syntax

`:SENSe[x][:PRESsure]:ALARm:HIGH 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: High alarm state (ON or OFF)

Function: For enabling or disabling the High Alarm

Query Syntax

`:SENSe[x][:PRESsure]:ALARm:HIGH?`

where x = is the module number (default is 1)

Function: Get the status of high alarm

Response: Boolean: High Alarm, 0 - Disabled and 1 - Enabled

Description

This SCPI command will enable or disable high-pressure alarm based on the threshold value set by the SCPI command :SENSe[x]:[PRESsure]:ALARm:HIGH:VALue.

Example

Tx	Rx	Remarks
:SENSe:PRESsure:ALARm:HIGH?	:SENS:PRES:ALAR:HIGH 0	High-pressure alarm is disabled
:SENS:PRES:ALAR:HIGH 1		set the high-pressure alarm state to enabled.
SENS:PRES:ALAR:HIGH?	SENS:PRES:ALAR:HIGH 1	High-pressure alarm is enabled
:SENS:PRES:ALAR:HIGH 0		Set the high-pressure alarm state to disabled.
:SENS:PRES:ALAR:HIGH?	:SENS:PRES:ALAR:HIGH 0	High-pressure alarm is disabled.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-235, "Settings conflict"	Not in preferred task
-241, "Internal data base error"	Database failure
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:ALAR:HIGH:VAL

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:ALAR:HIGH:VAL

Command Syntax

:SENSe[x][:PRESsure]:ALARm:HIGH:VALue <value>

where x = is the module number (default is 1)

Parameter: Numerical Real: High alarm threshold value within the full-scale range

Function: Set the high alarm threshold pressure value.

Query Syntax

:SENSe[x][:PRESsure]:ALARm:HIGH:VALue?

where x = is the module number (default is 1)

Function: Get the high alarm threshold pressure value.

Response: Double: High alarm threshold pressure value

Description

This SCPI command will set or get threshold value for high-pressure alarm.

Note: Before sending this command, the high-pressure Alarm must be enabled using the command :SENSe[x]:[PRESsure]:ALARm:HIGH 1 otherwise this will return -221, "Settings conflict" error

Example

Tx	Rx	Remarks
:SENSe:PRESsure:ALARm:HIGH:VALue 2000		Set the high-pressure alarm value as 2000
:SENS:PRES:ALAR:HIGH:VAL?	:SENS:PRES:ALAR:HIGH:VAL 2000	Return the high-pressure alarm value as 2000

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-237, "Settings conflict"	Alarm disabled
-240, "Device error"	Not in preferred task
-241, "Internal data base error"	Database failure
-222, "Data out of range"	Out of range
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:ALAR:LOW

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:ALAR:LOW

Command Syntax

`:SENSe[x][:PRESsure]:ALARm:LOW 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: 0 - Disable low alarm, 1 - Enable low alarm

Function: For Enabling or Disabling the Low Alarm.

Query Syntax

`:SENSe[x][:PRESsure]:ALARm:LOW?`

where x = is the module number (default is 1)

Function: Get the status of low alarm.

Response: Boolean: Low Alarm, 0 - Disabled and 1 - Enabled

Description

This SCPI command will enable or disable low-pressure alarm based on the threshold value set by the SCPI command :SENSe[x]:[PRESsure]:ALARm:LOW:VALue.

Example

Tx	Rx	Remarks
:SENSe:PRESsure:ALARm:LOW?	:SENS:PRES:ALAR:LOW 0	Low pressure alarm is disabled
:SENS:PRES:ALAR:LOW 1		Enabled the low-pressure alarm
SENS:PRES:ALAR:LOW?	SENS:PRES:ALAR:LOW 1	Enabled low-pressure alarm

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-237, "Settings conflict"	Not in preferred task
-241, "Internal data base error"	Database failure
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:ALAR:LOW:VAL

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:ALAR:LOW:VAL

Command Syntax

`:SENSe[x][:PRESsure]:ALARm:LOW:VALue <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Low alarm threshold value within the full-scale range

Function: Set the low alarm threshold pressure value

Query Syntax

`:SENSe[x][:PRESsure]:ALARm:LOW:VALue?`

where x = is the module number (default is 1)

Function: Get the low alarm threshold pressure value.

Response: Double: Low alarm threshold pressure value

Description

This SCPI command will set or get threshold value for low-pressure alarm.

Note: Before sending this command, the low-pressure Alarm must be enabled using the command :SENSe[x]:[PRESsure]:ALARm:LOW 1 otherwise this will return -221, "Settings conflict" error

Example

Tx	Rx	Remarks
:SENSe:PRESsure:ALARm:LOW:VALue 1000		Set the low-pressure alarm value as 1000
:SENS:PRES:ALAR:LOW:VAL?	:SENS:PRES:ALAR:LOW:VAL 1000	Return the low-pressure alarm value as 1000

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-237, "Settings conflict"	Alarm disabled
-240, "Device error"	Not in preferred task
-241, "Internal data base error"	Database failure
-232, "Data out of range"	Out of range
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:AVER

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:AVER

Query Syntax

`:SENSe[x][:PRESsure]:AVERage?`

where x = is the module number (default is 1)

Function: Query average pressure value.

Response: Double: Average pressure value in the current pressure units.

Description

This command query gets the average pressure value in the current pressure units over an averaging time . The averaging time can be set by the user. The averaging read can also be reset to discard the samples taken upto the current point

Example

Tx	Rx	Remarks
:SENS:PRES:AVER?	:SENS:PRES:AVER 0.0529903	Query gives the current average pressure value in the current pressure unit

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:AVER:RES

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:AVER:RES

Command Syntax

`:SENSe[x][:PRESsure]:AVERage:RESet`

where x = is the module number (default is 1)

Function: Resets average pressure reading.

Description

This command resets the average pressure readings.

Example

Tx	Rx	Remarks
:SENS:PRES:AVER:RESet		Reset average pressure reading

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:AVER:TIME

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:AVER:TIME

Command Syntax

`:SENSe[x][:PRESsure]:AVERage:TIME <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Average time constant in seconds.

Function: The command sets the averaging function time period.

Query Syntax

`:SENSe[x][:PRESsure]:AVERage:TIME?`

where x = is the module number (default is 1)

Function: The command gets the averaging function time period.

Response: Integer: The average time constant in seconds

Description

The command sets/gets the average time constant in seconds.

Example

Tx	Rx	Remarks
:SENS:PRES:AVER:TIME?	:SENS:PRES:AVER:TIME 10	query gets the average time constant
:SENS:PRES:AVER:TIME 1	:SENS:PRES:AVER:TIME 1	Command sets the average time constant

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:BAR

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:BAR

Query Syntax

`:SENSe[x][:PRESsure]:BARometer?`

where x = is the module number (default is 1)

Function: Queries the barometric pressure value.

Response: Double: Selected units of pressure measurement.

Description

Returns the selected module barometric pressure measured by the optional barometric transducer. If the optional barometric transducer is not fitted, the response is zero pressure. PACE5000 E and PACE6000 E alternative query to :SENS:PRES? that does not require preselection of the sensor using the :SENS:PRES:RANG command. To directly query the pressure values of the +ve and –ve pressure supply source and vacuum sensors refer to the :SOUR:PRES:COMP query.

Example

Tx	Rx	Remarks
:SENS:PRES:BAR?	:SENS:PRES:BAR 982.8430904	This value is in mbar

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CONT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CONT

Query Syntax

`:SENSe[x][:PRESsure]:CONTrol?`

where x = is the module number (default is 1)

Function: Queries the selected module control sensor pressure value.

Response: Double: Selected units of pressure measurement.

Description

Returns the selected module pressure measured by the control transducer. An alternative query to :SENS:PRES? that does not require preselection of the sensor using the :SENS:PRES:RANG command. To directly query the pressure values of the +ve and –ve pressure supply source and vacuum sensors refer to the :SOUR:PRES:COMP query.

Example

Tx	Rx	Remarks
:SENS:PRES:CONT?	:SENS:PRES:CONT 982.8430904	This value is in mbar

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Invalid reading
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:HEAD

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD

Command Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD AIR|NITRogen, <value>`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (AIR, NITRogen): head correction medium, Numerical Real: head correction height

Function: Head correction parameters

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD?`

where x = is the module number (default is 1)

Function: Query gas and height of head correction.

Response: Character - Enumerated: AIR, NITRogen and height in meters (+100 to -100).

Description

A correction must be made if the unit under test is at a different height from the instrument. This command programs the gas used and the height difference.

Note: NITROGEN or NITR is an enumerated data type (not in punctuation marks), not a string and is not case-sensitive and can have a short form.

Example

Tx	Rx	Remarks
:SENS:PRES:CORR:HEAD?	:SENS:PRES:CORR:HEAD AIR, -0.7500000	None
:SENS:PRES:CORR:HEAD AIR, 1.2	None	Head correction can be set to a new height as 1.2
:SENS:PRES:CORR:HEAD?	:SENS:PRES:CORR:HEAD AIR, 1.2000000	Another query will confirm the height change
:SENS:PRES:CORR:HEAD NITROGEN, 1.2	None	Head correction can be set for another gas
:SENS:PRES:CORR:HEAD?	:SENS:PRES:CORR:HEAD NITR, 1.2000000	Another query will confirm the medium change

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Failed to set the value
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:HEAD:GRAV

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:GRAV

Command Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:GRAVity <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: local gravity in current gravity unit depends on the area

Function: Set the head correction local gravity value.

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:GRAVity?`

where x = is the module number (default is 1)

Function: Queries the head correction local gravity value.

Response: Double: Head correction local gravity value.

Description

Command to set/get head correction local gravity value in the gravity unit set for the system.

Example

Tx	Rx	Remarks
:SENS:CORR:HEAD:GRAV?	:SENS:CORR:HEAD:GRAV 30.56789	Return the gravity in current unit
:SENS:CORR:HEAD:GRAV 10	None	Set the head correction gravity to 10

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:HEAD:GRAV:UNIT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:GRAV:UNIT

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:GRAVity:UNIT?`

where x = is the module number (default is 1)

Function: The query command to get the head correction gravity unit.

Response: Gravity unit; supported values are m/s^2 or ft/s^2.

Description

The SCPI to get the head correction gravity unit. The gravity unit is set by the software internally based on the area of use.

Example

Tx	Rx	Remarks
:SENS:CORR:HEAD:GRAV:UNIT?	:SENS:CORR:HEAD:GRAV:UNIT "E_M_S2"	Gravity unit is m/s^2
:SENS:CORR:HEAD:GRAV:UNIT?	:SENS:CORR:HEAD:GRAV:UNIT "E_FT_S2"	Gravity unit is ft/s^2

:SENS:PRES:CORR:HEAD:HEIG:UNIT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:HEIG:UNIT

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:HEIGht:UNIT?`

where x = is the module number (default is 1)

Function: Queries the head correction height unit selection

Response: Character - Enumerated: METers or INCHes

Description

Command to get head correction height unit selection

Example

Tx	Rx	Remarks
:SENS:CORR:HEAD:HEIG:UNIT ?	:SENS:CORR:HEAD:HEIG:UNIT METers	Returns the current head correction height unit
:SENS:CORR:HEAD:HEIG:UNIT INCH	None	Set the unit as INCHes
:SENS:CORR:HEAD:HEIG:UNIT ?	:SENS:CORR:HEAD:HEIG:UNIT INCHes	Returns the head correction height unit as INCHes

:SENS:PRES:CORR:HEAD:HUM

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:HUM

Command Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:HUMidity <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Humidity in percentage

Function: Set head correction humidity value in percentage.

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:HUMidity?`

where x = is the module number (default is 1)

Function: Queries the head correction humidity value in percentage.

Response: Double: Head correction humidity value in percentage.

Description

Command to set/get head correction humidity value in percentage.

Example

Tx	Rx	Remarks
:SENS:CORR:HEAD:HUM?	:SENS:CORR:HEAD:HUM 30	Return the current head correction humidity
:SENS:CORR:HEAD:HUM 40	None	Set the head correction humidity to 40
:SENS:CORR:HEAD:HUM?	:SENS:CORR:HEAD:HUM 40	Return the current head correction humidity

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:HEAD:RMED

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:RMED

Command Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:RMEDium AIR|NITRogen`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (AIR, NITRogen): Head correction medium

Function: Set head correction reference medium selection

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:RMEDium?`

where x = is the module number (default is 1)

Function: Queries the head correction reference medium selection

Response: Character - Enumerated: AIR or NITRogen

Description

Command to set/get head correction reference medium selection

Example

Tx	Rx	Remarks
:SENS:CORR:HEAD:RMED?	:SENS:CORR:HEAD:RMED AIR	Return the head correction reference medium as AIR
:SENS:CORR:HEAD:RMED NITRogen	None	Set the reference medium as NITRogen
:SENS:CORR:HEAD:RMED?	:SENS:CORR:HEAD:RMED NITRogen	Return the reference medium as NITRogen

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:HEAD:RPR

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:RPR

Command Syntax

:SENSe[x][:PRESsure]:CORRection:HEAD:RPRessure <value>

where x = is the module number (default is 1)

Parameter: Numerical Real: reference pressure value in the pressure unit within the full-scale range

Function: Set head correction reference pressure value in the pressure unit set for the system.

Query Syntax

:SENSe[x][:PRESsure]:CORRection:HEAD:RPRessure?

where x = is the module number (default is 1)

Function: Queries the head correction reference pressure value.

Response: Gets the head correction reference pressure value in the pressure unit set for the system.

Description

Command to set/get head correction reference pressure value in the pressure unit set for the system.

Example

Tx	Rx	Remarks
:SENS:CORR:HEAD:RPR?	:SENS:CORR:HEAD:RPR 800	Return the current head correction reference pressure in current unit
:SENS:CORR:HEAD:RPR 1000	None	Set the head correction reference pressure to 1000
:SENS:CORR:HEAD:RPR?	:SENS:CORR:HEAD:RPR 1000	Return the current reference pressure

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:HEAD:RPR:MAX

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:RPR:MAX

Query Syntax

:SENSe[x][:PRESsure]:CORRection:HEAD:RPRessure:MAXimum?

where x = is the module number (default is 1)

Function: max_rpr

Response: Double: Head correction reference pressure max_rpr

Description

Command to get head correction reference pressure maximum value in the pressure unit set for the system.

Example

Tx	Rx	Remarks
:SENSe:PRESsure:CORRection: HEAD:RPRessure:MAX?	:SENSe:PRESsure:CORRection: HEAD:RPRessure:MAX 1035.00	Return Current Maximum Reference Pressure

:SENS:PRES:CORR:HEAD:RPR:MIN

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:RPR:MIN

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:RPRessure:MINimum?`

where x = is the module number (default is 1)

Function: min_rpr

Response: Double: Head correction reference pressure min_rpr

Description

Command to get head correction reference pressure minimum value in the pressure unit set for the system

Example

Tx	Rx	Remarks
:SENSe:PRESsure:CORRection: HEAD:RPRessure:MIN?	:SENSe:PRESsure:CORRection: HEAD:RPRessure:MIN 0.00	Return Current Minimum Reference Pressure

:SENS:PRES:CORR:HEAD:RSEL

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:RSEL

Command Syntax

:SENSe[x][:PRESsure]:CORRection:HEAD:RSELection MANual|BARometric

where x = is the module number (default is 1)

Parameter: Character - Enumerated (MANual, BARometric): head correction mode

Function: Set head correction Manual reference / Barometer selection.

Query Syntax

:SENSe[x][:PRESsure]:CORRection:HEAD:RSELection?

where x = is the module number (default is 1)

Function: Queries the head correction Manual reference / Barometer selection.

Response: Character - Enumerated: MANual or BARometeric

Description

Command to set/get head correction Manual reference / Barometer selection.

Example

Tx	Rx	Remarks
:SENS:CORR:HEAD:RSEL?	:SENS:CORR:HEAD:RSEL MANual	Return the current head correction selection as MANUAL
:SENS:CORR:HEAD:RSEL BAR	None	Set to BARometeric
:SENS:CORR:HEAD:RSEL?	:SENS:CORR:HEAD:RSEL BARometeric	Returns selection as Barometric

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:HEAD:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:STAT

Command Syntax

:SENSe[x][:PRESsure]:CORRection:HEAD:STATe 0|1

where x = is the module number (default is 1)

Parameter: Boolean: 0 - Disable head correction, 1 - Enable head correction

Function: Enables/disables head correction

Query Syntax

:SENSe[x][:PRESsure]:CORRection:HEAD:STATe?

where x = is the module number (default is 1)

Function: Query head correction state

Response: Boolean: 0 - Head correction off, 1 - Head correction on

Description

This command enables or disables the head correction compensation.

Example

Tx	Rx	Remarks
:SENS:PRES:CORR:HEAD:STATe?	:SENS:PRES:CORR:HEAD:STAT 0	Head correction off
:SENS:PRES:CORR:HEAD:STATe on/1	None	Head correction on
:SENS:PRES:CORR:HEAD:STATe?	:SENS:PRES:CORR:HEAD:STAT 1	None
:SENS:PRES:CORR:HEAD:STATe off/0	None	Head correction off
:SENS:PRES:CORR:HEAD:STATe?	:SENS:PRES:CORR:HEAD:STATe 0	None

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:HEAD:TEMP

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:TEMP

Command Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:TEMPerature <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: head correction temperature value in current temperature unit within the full-scale range

Function: Set the head correction temperature in the current head correction temperature unit.

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:TEMPerature?`

where x = is the module number (default is 1)

Function: Queries the head correction temperature.

Response: Double: The head correction temperature in the user selected head correction temperature unit.

Description

Command to set/get head correction temperature in the temperature unit for head correction.

Example

Tx	Rx	Remarks
:SENS:CORR:HEAD:TEMP?	:SENS:CORR:HEAD:TEMP 41.42398	Internal temperature unit will be considered
:SENS:CORR:HEAD:TEMP 60.62424	None	Set the head correction temperature to 60.62424

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:HEAD:TEMP:MAX

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:TEMP:MAX

Query Syntax

:SENSe[x][:PRESsure]:CORRection:HEAD:TEMPerature:MAXimum?

where x = is the module number (default is 1)

Function: max_temp

Response: Double: Head correction max_temp

Description

Command to get head correction maximum temperature in the temperature unit for head correction.

Example

Tx	Rx	Remarks
:SENS:CORR:HEAD:TEMP:MA X?	:SENS:CORR:HEAD:TEMP:MA X 85.364	Maximum Head Correction Temperature

:SENS:PRES:CORR:HEAD:TEMP:MIN

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:TEMP:MIN

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:TEMPerature:MINimum?`

where x = is the module number (default is 1)

Function: min_temp

Response: Double: Head correction min_temp

Description

Command to get head correction temperature minimum value in the temperature unit for head correction.

Example

Tx	Rx	Remarks
:SENS:CORR:HEAD:TEMP:MIN ?	:SENS:CORR:HEAD:TEMP:MIN 60.325	Minimum Head Correction Temperature

:SENS:PRES:CORR:HEAD:TEMP:UNIT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:HEAD:TEMP:UNIT

Command Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:TEMPerature:UNIT CELSius|FAHRenheit`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (CELSius, FAHRenheit): head correction temperature unit

Function: Set head correction temperature unit.

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:HEAD:TEMPerature:UNIT?`

where x = is the module number (default is 1)

Function: Queries the head correction temperature unit.

Response: Enum - CELSIUS , FAHRenheit

Description

Command to set/get head correction temperature unit.

Example

Tx	Rx	Remarks
:SENS:PRES:CORR:HEAD:TEMP:UNIT?	:SENS:PRES:CORR:HEAD:TEMP:UNIT CELSius	Return the current temperature unit
:SENS:PRES:CORR:HEAD:TEMP:UNIT FAHRenheit	None	Set the temperature unit to FAHRenheit

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:OFFS

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:OFFS

Command Syntax

`:SENSe[x][:PRESsure]:CORRection:OFFSet <value>`

where x = is the module number (default is 1)

Parameter: Double: Tare offset value in current pressure units.

Function: Subtracts the offset value from the processed reading.

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:OFFSet?`

where x = is the module number (default is 1)

Function: Asks for the tare value.

Response: Double: Number corresponding to the tare offset value.

Description

The command to set and get offset.

Example

Tx	Rx	Remarks
:SENS:PRES:CORR:OFFS?	:SENS:PRES:CORR:OFFS 0.0	Offset is zero.
:SENS:PRES:CORR:OFFS 100	None	Offset can be changed to 100 mbar by sending, (instrument must be in mbar)
:SENS:PRES:CORR:OFFS?	:SENS:PRES:CORR:OFFS 100.000000	Send query again to confirm offset has changed
:UNIT:PRES bar	None	Changed unit as bar
:SENS:PRES:CORR:OFFS?	:SENS:PRES:CORR:OFFS 0.1000000	The offset depends on the units of measurement used by the instrument. If changed from mbar to bar, the same query will be returned.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:OFFS:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:OFFS:STAT

Command Syntax

:SENSe[x][:PRESsure]:CORRection:OFFSet:STATe 0|1

where x = is the module number (default is 1)

Parameter: Boolean: 0 - Disable offset, 1 - Enable offset

Function: Enables and disables the offset function.

Query Syntax

:SENSe[x][:PRESsure]:CORRection:OFFSet:STATe?

where x = is the module number (default is 1)

Function: Asks if offset function is on or off

Response: Boolean: 1 (on), 0 (off)

Description

This command enables and disables the offset function. The query gets the state of the offset (or tare) on or off.

Example

Tx	Rx	Remarks
:SENS:PRES:CORR:OFFS:STA Te?	:SENS:PRES:CORR:OFFS:STA T 0	The offset correction disabled.
:SENS:PRES:CORR:OFFS:STA Te on/1	None	Offset can be enabled
:SENS:PRES:CORR:OFFS:STA Te?	:SENS:PRES:CORR:OFFS:STA T 1	The offset correction enabled
:SENS:PRES:CORR:OFFS:STA Te off/0	None	Offset can be disabled
:SENS:PRES:CORR:OFFS:STA Te?	:SENS:PRES:CORR:OFFS:STA T 0	The offset correction disabled.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:CORR:VOL

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:CORR:VOL

Query Syntax

`:SENSe[x][:PRESsure]:CORRection:VOLume?`

where x = is the module number (default is 1)

Function: Queries the estimated volume of the system connected to the instrument.

Response: Double: Number in litres corresponding to volume.

Description

This function queries for the estimated volume connected to instrument

Example

Tx	Rx	Remarks
:SENS:PRES:CORR:VOL?	:SENS:PRES:CORR:VOL 0.0150000	Query returns the current estimated volume.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:FILT:LPAS:BAND

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:FILT:BAND

Command Syntax

`:SENSe[x][:PRESsure]:FILTer[:LPASs]:BAND <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Filter band response value in % full-scale.

Function: Used to set-up the response band component of the filter.

Query Syntax

`:SENSe[x][:PRESsure]:FILTer[:LPASs]:BAND?`

where x = is the module number (default is 1)

Function: Ask for filter step response band parameter.

Response: Number corresponding to filter step response value in % full-scale.

Description

The digital low pass filter has a response band configured as percentage of full-scale. e.g., defaults to 0.02% FS. If the reading has changed by more than the configured band response value, then the filtering is ignored for that conversion and the pressure goes instantly to the new value.

Example

Tx	Rx	Remarks
:SENS:PRES:FILT:LPAS:BAND ?	:SENS:PRES:FILT:LPAS:BAND 50.0000000	The current setting for the filter band is 50% of full-scale, i.e., the filter applies only when the change of pressure is within this band.
:SENS:PRES:FILT:LPAS:BAND 12	None	The current setting for the filter band is 12% of full-scale
:SENS:PRES:FILT:LPAS:BAND ?	:SENS:PRES:FILT:LPAS:BAND 12.0000000	None

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:FILT:LPAS:FREQ

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:FILT:FREQ

Command Syntax

:SENSe[x][:PRESsure]:FILTer[:LPASs]:FREQuency <value>

where x = is the module number (default is 1)

Parameter: Numerical Real: Time constant value

Function: Used to set up the averaging component of the filter

Query Syntax

:SENSe[x][:PRESsure]:FILTer[:LPASs]:FREQuency?

where x = is the module number (default is 1)

Function: Ask for filter average parameter.

Response: Double: Number corresponding to filter average time in seconds.

Description

A digital low pass filter can be applied to the pressure reading. This is a first order low pass filter, the time constant depends on the value set by this command. Minimum value is 0.0125 and Maximum value is 20.

Note: The decimal number used by the command and query does not represent frequency even though 'FREQ' is used.

Example

Tx	Rx	Remarks
:SENS:PRES:FILT:LPAS:FREQ 1.76	None	Set to another value
:SENS:PRES:FILT:LPAS:FREQ ?	:SENS:PRES:FILT:LPAS:FREQ 1.7600000	None
:SENS:PRES:FILT:LPAS:FREQ ?	:SENS:PRES:FILT:LPAS:FREQ 2.0000000	Query the current setting for low-pass filter's time constant, returned value is 2 seconds.

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:FILT:LPAS:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:FILT

Command Syntax

`:SENSe[x][:PRESsure]:FILTer[:LPASs][:STATe] 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: 0 - Disable low pass filter, 1 - Enable low pass filter

Function: Sets low pass filter ON or OFF

Query Syntax

`:SENSe[x][:PRESsure]:FILTer[:LPASs][:STATe]?`

where x = is the module number (default is 1)

Function: Query state (on or off) for the low pass filter

Response: Boolean: 1 (ON), 0 (OFF)

Description

This command is used to enable or disable the low pass filter for producing a more stable reading. An 'intelligent' filter is implemented so that any noise in the system is filtered while step changes pass straight through the filter.

Example

Tx	Rx	Remarks
:SENS:PRES:FILT:LPAS:STAT?	:SENS:PRES:FILT:LPAS:STAT 0	The filter is currently off.
:SENS:PRES:FILT:LPAS:STAT on/1	None	It can be set on
:SENS:PRES:FILT:LPAS:STAT?	:SENS:PRES:FILT:LPAS:STAT 1	The filter is currently on
:SENS:PRES:FILT:LPAS:STAT off/0	None	It can be set off
:SENS:PRES:FILT:LPAS:STAT?	:SENS:PRES:FILT:LPAS:STAT 0	The filter is currently off

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:INL

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:INL

Query Syntax

`:SENSe[x][:PRESsure]:INLimits?`

where x = is the module number (default is 1)

Function: Query in-limits value.

Response: First parameter - Current pressure.

Second parameter - in limit(0 = not in limits, 1 = in limits).

Description

Query the in-limits value in current pressure units and the in-limits status.

Example

Tx	Rx	Remarks
:SENS:PRES:INL?	:SENS:PRES:INL 0.0817663, 0	Query gets the current in-limits value and in-limits status

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-294, "Incompatible type"	Invalid mode
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:INL:TIME

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:INL:TIME

Query Syntax

`:SENSe[x][:PRESsure]:INLimits:TIME?`

where x = is the module number (default is 1)

Function: Query pressure in-limits timers.

Response: Double: Number representing the in-limits time value in seconds since last set-point entry or controller Measure to Control state.

Description

Query the pressure in-limits timer value in seconds.

Example

Tx	Rx	Remarks
:SENS:PRES:INL:TIME?	:SENS:PRES:INL:TIME 15	Returns the current in-limit timer value

Possible Errors

Error	Description
-222, "Data out of range"	Validation failed
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:MAX

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:MAX

Query Syntax

`:SENSe[x][:PRESsure]:MAXimum?`

where x = is the module number (default is 1)

Function: This query reads the maximum pressure recorded from the point since maximum reading has been reset.

Response: A reading of the current set maximum pressure in selected pressure units.

Description

Queries the current maximum pressure recorded in current units since the maximum pressure reading has been reset.

Example

Tx	Rx	Remarks
:SENS:PRES:MAX?	:SENS:PRES:MAX 1000	Returns the current set maximum pressure recorded in current units

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:MAX:RES

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:MAX:RES

Command Syntax

`:SENSe[x][:PRESsure]:MAXimum:RESet`

where x = is the module number (default is 1)

Function: Resets maximum pressure reading

Description

Command resets the maximum pressure readings.

Example

Tx	Rx	Remarks
:SENS:PRES:MAX:RES		Reset the maximum pressure reading

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:MIN

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:MIN

Query Syntax

`:SENSe[x][:PRESsure]:MINimum?`

where x = is the module number (default is 1)

Function: This query reads the minimum pressure recorded from the point since minimum reading has been reset.

Response: A reading of the current set minimum pressure in selected pressure units.

Description

Queries the current minimum pressure recorded in current units since the minimum pressure reading has been reset.

Example

Tx	Rx	Remarks
:SENS:PRES:MIN?	:SENS:PRES:MIN 0.0000000	Returns the current set minimum pressure recorded in current units

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:MIN:RES

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:MIN:RES

Command Syntax

`:SENSe[x][:PRESsure]:MINimum:RESet`

where x = is the module number (default is 1)

Function: Resets minimum pressure reading

Description

This command resets minimum pressure readings.

Example

Tx	Rx	Remarks
:SENS:PRES:MIN:RES		Resets minimum reading

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:P1P2:DIFF

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:P1P2

Query Syntax

`:SENSe[x][:PRESsure]:P1P2[:DIFFerence]?`

where x = is the module number (default is 1)

Function: To get P1 - P2 pressure difference

Response: Double: P1 - P2 Pressure difference

Description

The query command returns P1 - P2 pressure difference in current pressure units.

Example

Tx	Rx	Remarks
:SENS:PRES:P1P2?	:SENS:PRES:P1P2:DIFF 20.000000	Query command will return the current P1-P2 pressure difference

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-221, "Incompatible type"	Invalid mode
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:P2P1:DIFF

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:P2P1

Query Syntax

:SENSe[x][:PRESsure]:P2P1[:DIFFerence]?

where x = is the module number (default is 1)

Function: To get the P2 -P1 pressure difference.

Response: Double : P2 - P1 pressure difference.

Description

The query command returns the P2 - P1 pressure difference in current pressure units.

Example

Tx	Rx	Remarks
:SENS:PRES:P2P1?	:SENS:PRES:P2P1:DIFF -20.000000	The query command returns the current P2 - P1 pressure difference

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-221, "Incompatible type"	Invalid mode
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:PERC

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:PERC

Query Syntax

`:SENSe[x][:PRESsure]:PERCent?`

where x = is the module number (default is 1)

Function: This query reads the percentage pressure

Response: A reading of the current set percentage pressure.

Description

Queries the current percentage pressure reading.

Example

Tx	Rx	Remarks
:SENS:PRES:PERC?	:SENS:PRES:PERC 0.0530498	Gets the pressure reading based on the percentage condition.

Possible Errors

Error	Description
-207,"Suffix out of range"	Invalid CM ID
-205,"Hardware missing"	Hardware missing

:SENS:PRES:PERC:SPAN

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:PERC:SPAN

Command Syntax

`:SENSe[x][:PRESsure]:PERCent:SPAN[y] <value>`

where x = is the module number (default is 1) , y = is the lower limit and upper limit (default is 1)

Parameter: Double: Top or Bottom span within the full-scale range.

Function: Sets the top or bottom span values in mbar.

Query Syntax

`:SENSe[x][:PRESsure]:PERCent:SPAN[y]?`

where x = is the module number (default is 1) , y = is the lower limit and upper limit (default is 1)

Function: This query reads the top or bottom span values.

Response: A reading of the current set top or bottom span values in mbar.

Description

The command to set or get the top or bottom span values in mbar.

Example

Tx	Rx	Remarks
:SENS:PRES:PERC:SPAN1 200		Set the bottom span value as 200
:SENS:PRES:PERC:SPAN2 3000		Set the top span value as 3000
:SENS:PRES:PERC:SPAN1?	:SENS:PRES:PERC:SPAN1 200	Returns the current bottom span value
:SENS:PRES:PERC:SPAN2?	:SENS:PRES:PERC:SPAN2 3000	Returns the current top span value

Possible Errors

Error	Description
-207,"Suffix out of range"	Invalid CM ID
-211,"Invalid suffix"	Invalid span index
-204,"Data out of range"	Validation failed
-208,"Memory error"	Set operation failed
-205,"Hardware missing"	Hardware missing

:SENS:PRES:PERC:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:PERC:STAT

Command Syntax

`:SENSe[x][:PRESsure]:PERCent:STATe NONE|FS|SPAN`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (NONE, FS, SPAN): Percentage span state

Function: To set the percentage state.

Query Syntax

`:SENSe[x][:PRESsure]:PERCent:STATe?`

where x = is the module number (default is 1)

Function: This query reads the percentage state.

Response: Enum: NONE, FS, SPAN

Description

Queries the current percentage state instrument returns NONE or FS or SPAN.

Example

Tx	Rx	Remarks
:SENS:PRES:PERC:STAT?	:SENS:PRES:PERC:STAT FS	Query returns the current percentage state
:SENS:PRES:PERC:STAT SPAN		Set the percentage state as SPAN

:SENS:PRES:PSE

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:PSE

Query Syntax

`:SENSe[x][:PRESsure]:PSEudo?`

where x = is the module number (default is 1)

Function: Queries the selected module pseudo range pressure value.

Response: Double: Selected units of pressure measurement

Description

Returns the selected module pseudo range pressure value. An alternative query to :SENS:PRES? that does not require preselection of the control sensor using the :SENS:PRES:RANG command. To directly query the pressure values of the +ve and –ve pressure supply source and vacuum sensors refer to the :SOUR:PRES:COMP query.

Note: If there is no barometer for controllers like CM0, CM1, CM2 , this command would return 0. For CM3 it will always return the Absolute sensor value

Example

Tx	Rx	Remarks
:SENS:PRES:PSE?	:SENS:PRES:PSE 982.8430904	This value is in mbar

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-203, "Data out of range"	Invalid reading
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:RANG

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:RANG

Command Syntax

`:SENSe[x][:PRESsure]:RANGe <text>`

where x = is the module number (default is 1)

Parameter: String: Range information.

Function: Selects an internal range.

Query Syntax

`:SENSe[x][:PRESsure]:RANGe?`

where x = is the module number (default is 1)

Function: Asks for currently sensed range.

Response: A string, representing the selected pressure range in pressure units.

Description

This command selects an internal pressure range for use by the :SENS[x]:PRES? query to return a displayed or non-displayed pressure reading, and also in calibration mode for selecting the sensor to be calibrated. This command does not affect the pressure range selected for pressure control and measured pressure display purposes, nor does it affect the pressure control function. Refer to :SOUR:PRES:RANG to change the range used for pressure control and measured pressure display.

Note: The command parameter, "4.50bara", has to be typed exactly as returned by the :INST:CAT:ALL? command. INST:CAT:ALL? command gives ranges of all available sensors "3.50barg","10.00bara","2.00bara","BAROMETER","4.50bara","4.50bara". In this example response First range "3.50barg" and last range "4.50bara" represents the control sensor ranges. Either of the control sensor ranges "3.50barg" or"4.50bara" can be set using :SENS:PRES:RANGE command. It is case-sensitive and not typo-error tolerant. The command does not affect the front-panel display only the internal. Use :SOUR:PRES:RANG to change front panel range display. (See instrument user's manual).

Example

Tx	Rx	Remarks
:INST:CAT2:ALL?	:INST:CAT2:ALL "3.50barg","10.00barg","1.00bar g","BAROMETER","4.50bara"	
:SENS2:PRES:RANG?	:SENS2:PRES:RANG "3.50barg"	Queries the current range selected by module 2.
:SENS2:PRES:RANG "4.50bara"	None	Selects a different range of module 2 use the command.
:SENS2:PRES:RANG?	:SENS2:PRES:RANG "4.50bara"	Shows the 4.50bara range is selected.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-223, "Incompatible type"	Invalid sensor type
-241, "Hardware missing"	Failed to find the hardware

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:SENS:PRES:REF

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:REF

Query Syntax

`:SENSe[x][:PRESsure]:REFerence?`

where x = is the module number (default is 1)

Function: Queries the selected module reference sensor pressure value.

Response: Double: Selected units of pressure measurement.

Description

Returns the selected module reference sensor pressure value. An alternative query to :SENS:PRES? that does not require preselection of the sensor using the :SENS:PRES:RANG command. To directly query the pressure values of the +ve and –ve pressure supply source and vacuum sensors refer to the :SOUR:PRES:COMP query.

Example

Tx	Rx	Remarks
:SENS:PRES:REF?	:SENS:PRES:REF 982.8430904	This value is in mbar

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:RES

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:RES

Command Syntax

`:SENSe[x][:PRESsure]:RESolution <cmdvalue>`

where x = is the module number (default is 1)

Parameter: Integer: resolution information

Function: Used to select a resolution to be used.

Query Syntax

`:SENSe[x][:PRESsure]:RESolution?`

where x = is the module number (default is 1)

Function: Asks for current resolution

Response: An integer from 4 to 8 representing selected resolution.

Description

This command selects the resolution to be used for showing the pressure reading in the front panel display.

Example

Tx	Rx	Remarks
:SENS:PRES:RES?	:SENS:PRES:RES 6	Query returns the current resolution value
:SENS:PRES:RES 5		Set the new resolution value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-200, "Data out of range"	Validation failed
-241, "Hardware missing"	Failed to find the hardware
-250, "Internal data base error"	Set operation failed

:SENS:PRES:SLEW

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:SLEW

Query Syntax

:SENSe[x][:PRESsure]:SLEW?

where x = is the module number (default is 1)

Function: Asks for current slew rate

Response: Decimal number representing the measured slew rate always in current pressure units per current time setting (/s or /m).

Description

This query gets the slew rate of the input pressure always in current pressure units per current time setting (/s or /m).

Example

Tx	Rx	Remarks
:SENS:PRES:SLEW?	:SENS:PRES:SLEW -20.1089802	Current slew rate from CM1
:SENS2:PRES:SLEW?	:SENS2:PRES:SLEW -20.0536633	Current slew rate from CM2

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-294, "Incompatible type"	Invalid mode
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:SOUR

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:SOUR

Query Syntax

:SENSe[x][:PRESsure]:SOURce?

where x = is the module number (default is 1)

Function: Asks for source sensor pressure

Response: Decimal number representing the measured source sensor pressure always in current pressure units.

Description

This query gets the source sensor pressure always in current pressure units

Example

Tx	Rx	Remarks
:SENS:PRES:SOUR?	:SENS:PRES:SOUR 0.9249681	source sensor pressure from CM1
:SENS2:PRES:SOUR?	:SENS2:PRES:SOUR 0.9149681	source sensor pressure from CM2

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-201, "Query error"	Invalid reading
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:TIME

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:TIME

Query Syntax

`:SENSe[x][:PRESsure]:TIME?`

where x = is the module number (default is 1)

Function: Command to get the time to setpoint reported by the control module.

Response: Time to setpoint taken by the control module.

Description

Command to get the time to setpoint reported by the control module.

Example

Tx	Rx	Remarks
:SENS:PRES:TIME?	:SENS:PRES:TIME 35	time to setpoint value from CM1
:SENS2:PRES:TIME?	:SENS2:PRES:TIME 20	time to setpoint value from CM2

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SENS:PRES:VAC

Applicability   PACE5000 E, PACE6000 E

Short Form: :SENS:VAC

Query Syntax

:SENSe[x][:PRESsure]:VACuum?

where x = is the module number (default is 1)

Function: Asks for vacuum sensor pressure

Response: Decimal number representing the measured vacuum sensor pressure always in current pressure units.

Description

This query gets the vacuum sensor pressure always in current pressure units

Example

Tx	Rx	Remarks
:SENS:PRES:VAC?	:SENS:PRES:VAC 0.9875139	vacuum sensor pressure from CM1
:SENS2:PRES:VAC?	:SENS2:PRES:VAC 0.9555139	vacuum sensor pressure from CM2

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-201, "Query error"	Invalid reading
-241, "Hardware missing"	Failed to find the hardware

:SENS:SPE

Applicability   PACE6000 E

Short Form: :SENS:SPE

Query Syntax

`:SENSe:SPEed?`

Function: This query reads the aeronautical sensors.

Response: A decimal reading in currently selected airspeed units.

Description

Queries the airspeed reading.

Note: If the instrument is not in aeronautical mode it records an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENS:SPE?	:SENS:SPE 10	Query returns the current airspeed reading in currently selected units

:SENS:SPE:INL

Applicability   PACE6000 E

Short Form: :SENS:SPE:INL

Query Syntax

:SENSe[x]:SPEed:INLimits?

where x = is the module number (default is 1)

Function: Queries the airspeed reading and in limits state for airspeed mode.

Response: Double value airspeed readings and Integer in-limit state (0 - Not in limits, 1 - In limits).

Description

Query the airspeed reading and in limits state for airspeed mode.

Note: If the instrument is not in aeronautical mode it records an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENS:SPE:INL?	:SENS:SPE:INL 0.0000000,0	Query returns the current airspeed reading and in limits state for airspeed mode.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware
-294, "Incompatible type"	Operation not allowed in this mode

:SENS:SPE:INL:TIME

Applicability   PACE6000 E

Short Form: :SENS:SPE:INL:TIME

Query Syntax

`:SENSe[x]:SPEed:INLimits:TIME?`

where x = is the module number (default is 1)

Function: Queries the time to setpoint for Airspeed mode.

Response: Number representing airspeed in-limits time in seconds.

Description

Query the time to setpoint for airspeed mode.

Note: If the instrument is not in aeronautical mode it records an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENS:SPE:INL:TIME?	:SENS:SPE:INL:TIME 0	Query returns the current the time to setpoint for Airspeed mode.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware
-294, "Incompatible type"	Operation not allowed in this mode

:SENS:SPE:RANG

Applicability   PACE6000 E

Short Form: :SENS:SPE:RANG

Query Syntax

`:SENSe[x]:SPEed:RANGe?`

where x = is the module number (default is 1)

Function: This query reads the airspeed range.

Response: A string (number), representing the airspeed range in knots. Example: 590kn

Description

Queries the airspeed range.

Note: If the instrument is not in aeronautical mode it records an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SOUR:SPE:RANG?	:SOUR:SPE:RANG "650kn "	Query returns the current airspeed range

:SENS:SPE:SLEW

Applicability   PACE6000 E

Short Form: :SENS:SPE:SLEW

Query Syntax

`:SENSe[x]:SPEed:SLEW?`

where x = is the module number (default is 1)

Function: This query reads the airspeed rate of change.

Response: Double: Airspeed reading/second.

Description

Queries the airspeed rate of change reading.

Note: If the instrument is not in aeronautical mode it records an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SENS2:SPE:SLEW?	:SENS2:SPE:SLEW 10.0000000	Returns the current airspeed slew rate value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware
-294, "Incompatible type"	Operation not allowed in this mode

SOURce

Description

The SOURce subsystem controls the pressure output of the instrument.

:SOUR:AERO:PRES:UNIT

Applicability   PACE6000 E

Short Form: :SOUR:AERO:PRES:UNIT

Command Syntax

`:SOURce:AERO:PRESsure:UNIT`
`MBAR|BAR|PA|HPA|KPA|MPA|MMHG|CMHG|MHG|INHG|KG/CM2|KG/M2|MMH`
`2O|CMH2O|MH2O|MMH2O20|CMH2O20|MH2O20|TORR|ATM|PSI|LB/FT2|IN`
`H2O4|INH2O|INH2O60|FTH2O4|FTH2O|FTH2O60`

Parameter: Character - Enumerated (MBAR, BAR, PA, HPA, KPA, MPA, MMHG, CMHG, MHG, INHG, KG/CM2, KG/M2, MMH2O, CMH2O, MH2O, MMH2O20, CMH2O20, MH2O20, TORR, ATM, PSI, LB/FT2, INH2O4, INH2O, INH2O60, FTH2O4, FTH2O, FTH2O60): aeronautical pressure unit

Function: Set the pressure unit selection for Ps, Qc and Pt

Query Syntax

`:SOURce:AERO:PRESsure:UNIT?`

Function: Queries the pressure unit selection for Ps, Qc and Pt

Response: Character - Enumerated(MBAR, BAR): Pressure units

Description

The get and set command for the pressure unit selection for Ps, Qc and Pt.

Example

Tx	Rx	Remarks
:SOUR:AERO:PRES:UNIT?	:SOUR:AERO:PRES:UNIT MBAR	Query returns the current aero pressure unit
:SOUR:AERO:PRES:UNIT BAR		Set the aero pressure unit as BAR
:SOUR:AERO:PRES:UNIT?	:SOUR:AERO:PRES:UNIT BAR	Returns the current aero pressure unit as BAR

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error

:SOUR:AERO:SLEW:UNIT

Applicability   PACE6000 E

Short Form: :SOUR:AERO:SLEW:UNIT

Command Syntax

`:SOURce[x]:AERO:SLEW:UNIT SEConds|MINutes`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (SEConds, MINutes): Aeronautical time unit

Function: Set the time units for aeronautical feature

Query Syntax

`:SOURce[x]:AERO:SLEW:UNIT?`

where x = is the module number (default is 1)

Function: Queries the time units for aeronautical feature

Response: Character - Enumerated: Second, Minute

Description

This commands sets/get the time units for aeronautical feature. Per second or per minute value can be selected.

Example

Tx	Rx	Remarks
:SOUR:AERO:SLEW:UNIT?	:SOUR:AERO:SLEW:UNIT SEC	Query for aero time unit
:SOUR:AERO:SLEW:UNIT MIN		Set the aero time unit as Minute
:SOUR:AERO:SLEW:UNIT?	:SOUR:AERO:SLEW:UNIT MIN	Query result the current aero unit as Minute

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:ALT:GRO

Applicability   PACE6000 E

Short Form: :SOUR:ALT:GRO

Command Syntax

:SOURce[x]:ALTitude:GROund <state>

where x = is the module number (default is 1)

Parameter: Integer: Altitude go to ground status: 0 - Abort ,1 -Start

Function: Set the Go to ground status for Altitude CM

Query Syntax

:SOURce[x]:ALTitude:GROund?

where x = is the module number (default is 1)

Function: Queries the Go to ground status for Altitude CM.

Response: Integer: 0 - Go to ground OK/ Go to ground not in progress.

1 - Go to ground in progress.

2 - Go to ground timed out.

3 - Go to ground finished with trapped pressure.

4 - Go to ground Aborted.

Description

Command to check Go to ground status for Altitude CM, if the specified CM is in Altitude mode, command returns go to ground status otherwise error code is returned.

Example

Tx	Rx	Remarks
:SOUR:ALT:GRO 1		Started the go to ground.
:SOUR:ALT:GRO?	:SOUR:ALT:GRO 1	Immediate query returns the process is inprogress
:SOUR:ALT:GRO?	:SOUR:ALT:GRO 0	Query returns the process is completed

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-222, \"Data out of range\"	Input validation failed
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:ALT:INL

Applicability   PACE6000 E

Short Form: :SOUR:ALT:INL

Command Syntax

`:SOURce[x]:ALTitude:INLimits <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: inlimit band value in altitude mode within the fullscale range

Function: Set the limit band in percentage full scale for altitude mode.

Query Syntax

`:SOURce[x]:ALTitude:INLimits?`

where x = is the module number (default is 1)

Function: Ask for the limit band in percentage full scale for altitude mode.

Response: Double: In-limit band value

Description

Set and query in limit band in percentage full scale for Altitude mode

Example

Tx	Rx	Remarks
:SOUR:ALT:INL?	:SOUR:ALT:INL 0.0000000	Querry will return the current limit band for altitude mode.
:SOUR:ALT:INL 1000		Set the value to 1000
:SOUR:ALT:INL?	:SOUR:ALT:INL 1000.0000000	Returns the current value as 1000

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:ALT:INL:TIME

CAUTION: For more precise inlimit timer set/get operation please refer to SCPI command :SOUR:ALT:INL:TIME:PREC. Minimum setting value returned by the :SOUR:ALT:INL:TIME will be 1, even if the value has been set to a lower resolution via the precision SCPI command or from the UI. Values returned by :SOUR:ALT:INL:TIME will be truncated down to integer. Inlimit Timer Range - Lower limit: 1 Upper limit: 60.

Applicability   PACE6000 E

Short Form: :SOUR:ALT:INL:TIME

Command Syntax

`:SOURce[x]:ALTitude:INLimits:TIME <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: inlimit time value in altitude mode within the fullscale range

Function: Sets the time that the altitude value has to be within limits.

Query Syntax

`:SOURce[x]:ALTitude:INLimits:TIME?`

where x = is the module number (default is 1)

Function: Ask for the time that the altitude value has to be within limits.

Response: Integer: Number representing in-limits time in seconds

Description

Sets/ queries the time in seconds that the altitude value has to be within limits

Example

Tx	Rx	Remarks
:SOUR:ALT:INL:TIME?	:SOUR:ALT:INL:TIME 1	Query will return the current inlimit time
:SOUR:ALT:INL:TIME 60		Set the inlimit time to 60 seconds.
:SOUR:ALT:INL:TIME?	:SOUR:ALT:INL:TIME 60	Query will returns the current inlimit time in seconds
:SOUR:ALT:INL:TIME min		Set to minimum value
:SOUR:ALT:INL:TIME max		Set to maximum value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error

| -241, "Hardware missing" | Failed to find the hardware |

:SOUR:ALT:INL:TIME:PREC

Applicability   PACE6000 E

Short Form: :SOUR:ALT:INL:TIME:PREC

Command Syntax

`:SOURce[x]:ALTitude:INLimits:TIME:PRECision <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: In-limits time with higher precision

Function: Sets a higher precision time that the pressure has to be within limits before generating a service request

Query Syntax

`:SOURce[x]:ALTitude:INLimits:TIME:PRECision?`

where x = is the module number (default is 1)

Function: The SCPI command is used to get higher precision inlimits time value

Response: Double: Number representing higher precision of in-limits time value in seconds

Description

The SCPI command is used to get/set higher precision in-limits time value compared to legacy SCPI command :SOUR:ALT:INL:TIME

Example

Tx	Rx	Remarks
:SOUR:ALT:INL:TIME:PREC?	:SOUR:ALT:INL:TIME:PREC 0.1	Default in-limit time is 0.1
:SOUR:ALT:INL:TIME:PREC 0.9	None	Can be set to 0.9 by issuing command
:SOUR:ALT:INL:TIME:PREC?	:SOUR:ALT:INL:TIME:PREC 0.9	None
:SOUR:ALT:INL:TIME:PREC 5.9	None	Can be set to 5.9 by issuing command
:SOUR:ALT:INL:TIME:PREC?	:SOUR:ALT:INL:TIME:PREC 5.9	None
:SOUR:ALT:INL:TIME:PREC min		Set to minimum in-limits timer value.
:SOUR:ALT:INL:TIME:PREC max		Set to maximum in-limit timer value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:ALT:LEV:IMM:AMPL

Applicability   PACE6000 E

Short Form: :SOUR:ALT

Command Syntax

`:SOURce[x]:ALTitude[:LEVel][:IMMediate][:AMPLitude] <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: altitude setpoint value within the fullscale range

Function: Sets the altitude set-point.

Query Syntax

`:SOURce[x]:ALTitude[:LEVel][:IMMediate][:AMPLitude]?`

where x = is the module number (default is 1)

Function: Queries altitude set-point.

Response: Decimal number representing altitude setpoint in the current units.

Description

This command sets the altitude set-point. This query gets the decimal number representing altitude setpoint in the current units.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict

Example

Tx	Rx	Remarks
:SOUR:ALT:LEV:IMM:AMPL?	:SOUR:ALT:LEV:IMM:AMPL 0	Returns the current altitude set point.
:SOUR:ALT:LEV:IMM:AMPL 50		Set the altitude setpoint as 50
:SOUR:ALT:LEV:IMM:AMPL?	:SOUR:ALT:LEV:IMM:AMPL 50	Returns the current altitude set point value

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-222, \"Data out of range\"	Input validation failed
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:ALT:LEV:IMM:AMPL:MAX

Applicability   PACE6000 E

Short Form: :SOUR:ALT:MAX

Query Syntax

`:SOURce[x]:ALTitude[:LEVel][:IMMediate][:AMPLitude]:MAXimum?`

where x = is the module number (default is 1)

Function: The query command to get the aeronautical setpoint upper limit in altitude mode

Response: Returns aeronautical setpoint upper limi in altitude mode

Description

This query gets the aeronautical setpoint upper limit in altitude mode

Example

Tx	Rx	Remarks
:SOUR:ALT:LEV:IMM:AMPL:MAX?	:SOUR:ALT:LEV:IMM:AMPL:MAX 55000.0000000	Returns aeronautical setpoint upper limit in altitude mode

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:ALT:LEV:IMM:AMPL:MIN

Applicability   PACE6000 E

Short Form: :SOUR:ALT:MIN

Query Syntax

`:SOURce[x]:ALTitude[:LEVel][:IMMediate][:AMPLitude]:MINimum?`

where x = is the module number (default is 1)

Function: The query command to get the aeronautical setpoint lower limit in altitude mode

Response: Returns aeronautical setpoint lower limit in altitude mode

Description

This query gets the aeronautical setpoint lower limit in altitude mode

Example

Tx	Rx	Remarks
:SOUR:ALT:LEV:IMM:AMPL:MIN?	:SOUR:ALT:LEV:IMM:AMPL:MIN -3300.0000000	Returns aeronautical setpoint lower limit in altitude mode

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:ALT:LEV:IMM:AMPL:SLEW

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:ALT:SLEW

Command Syntax

`:SOURce[x]:ALTitude[:LEVel][:IMMediate][:AMPLitude]:SLEW <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: slewrate value in altitude mode within the fullscale range

Function: Sets the rate of climb slew rate

Query Syntax

`:SOURce[x]:ALTitude[:LEVel][:IMMediate][:AMPLitude]:SLEW?`

where x = is the module number (default is 1)

Function: The query to get the rate of climb slew rate

Response: Double: Rate of climb slew rate

Description

Sets/ queries the rate of climb slew rate

Example

Tx	Rx	Remarks
:SOUR:ALT:LEV:IMM:AMPL:SLEW?	:SOUR:ALT:LEV:IMM:AMPL:SLEW 3000.0000000	Returns rate of climb in altitude mode

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:ALT:LEV:IMM:AMPL:SLEW:MAX

Applicability   PACE6000 E

Short Form: :SOUR:ALT:SLEW:MAX

Query Syntax

`:SOURce[x]:ALTitude[:LEVel][:IMMediate][:AMPLitude]:SLEW:MAXimum?`

where x = is the module number (default is 1)

Function: The query command to get the rate of climb upper limit in altitude mode

Response: Returns rate of climb upper limit in altitude mode

Description

To get maximum slew rate value user can provide

Example

Tx	Rx	Remarks
:SOUR:ALT:LEV:IMM:AMPL:SLEW:MAX?	:SOUR:ALT:LEV:IMM:AMPL:SLEW:MAX 6000.0000000	Returns rate of climb upper limit in altitude mode

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:ALT:LEV:IMM:AMPL:SLEW:MIN

Applicability   PACE6000 E

Short Form: :SOUR:ALT:SLEW:MIN

Query Syntax

`:SOURce[x]:ALTitude[:LEVel][:IMMediate][:AMPLitude]:SLEW:MINimum?`

where x = is the module number (default is 1)

Function: The query command to get the rate of climb slew rate lower limit in altitude mode

Response: Returns rate of climb slew rate lower limit in altitude mode

Description

This query gets the rate of climb slew rate lower limit in altitude mode

Example

Tx	Rx	Remarks
:SOUR:ALT:LEV:IMM:AMPL:SLEW:MIN?	:SOUR:ALT:LEV:IMM:AMPL:SLEW:MIN 10.0000000	Returns rate of climb slew rate lower limit in altitude mode

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:ALT:RANG

Applicability   PACE6000 E

Short Form: :SOUR:ALT:RANG

Command Syntax

`:SOURce:ALTitude:RANGe <mode>`

Parameter: String: pressure range in altitude mode

Function: Set the range for Altitude mode.

Query Syntax

`:SOURce:ALTitude:RANGe?`

Function: Ask for range for Altitude mode.

Response: A string (number), representing the selected altitude range in pressure units.

Description

Set and query the range for Altitude mode.

Example

Tx	Rx	Remarks
:SOUR:ALT:RANG?	:SOUR:ALT:RANG "CM1 55000ft 21.00bara"	Query the range for Altitude mode.

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error

:SOUR:ALT:RANG:ALL

Applicability   PACE6000 E

Short Form: :SOUR:ALT:RANG:ALL

Query Syntax

`:SOURce:ALTitude:RANGe:ALL?`

Function: Ask for all the ranges available for Altitude mode.

Response: String representing all the altitude ranges in comma separated.

Description

Query all the ranges available for Altitude mode.

Example

Tx	Rx	Remarks
:SENS:ALT:RANG:ALL?	:SENS:ALT:RANG:ALL "CM1 55000ft 21.00bara,CM2 55000ft 21.00bara"	Query returns all the ranges available for altitude mode.

Possible Errors

Error	Description
-241, \"Hardware missing\"	Failed to find the hardware

:SOUR:ALT:SPOI:LIM:LOW

Applicability   PACE6000 E

Short Form: :SOUR:ALT:SPOI:LIM:LOW

Command Syntax

`:SOURce[x]:ALTitude:SPOInt:LIMit:LOWer <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: setpoint lower limit value in altitude mode within the fullscale value

Function: Set user defined set-point lower limit for Altitude mode.

Query Syntax

`:SOURce[x]:ALTitude:SPOInt:LIMit:LOWer?`

where x = is the module number (default is 1)

Function: Ask for user defined set-point lower limit for Altitude mode.

Response: Double: Set-point lower limit for Altitude mode.

Description

Command to set or query user defined set-point lower limit for Altitude mode.

Example

Tx	Rx	Remarks
:SOUR:ALT:SPOI:LIM:LOW?	:SOUR:ALT:SPOI:LIM:LOW - 5000.0000000	Quey returns the current value
:SOUR:ALT:SPOI:LIM:LOW 1000		sets the minimum value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware
-221, \"Settings conflict\"	Lower limit must be less than upper limit

:SOUR:ALT:SPOI:LIM:STAT

Applicability   PACE6000 E

Short Form: :SOUR:ALT:SPOI:LIM:STAT

Command Syntax

`:SOURce[x]:ALTitude:SPOInt:LIMit:STATe 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: setpoint inlimit state(ON or OFF) in altitude mode

Function: To set user defined set-point limit state for Altitude mode.

Query Syntax

`:SOURce[x]:ALTitude:SPOInt:LIMit:STATe?`

where x = is the module number (default is 1)

Function: Queries the user defined set-point limit state for Altitude mode.

Response: Boolean: User defined set-point limit state for Altitude mode, 1 - ON and 0 - OFF

Description

Command to set or query user defined set-point limit state for Altitude mode.

Example

Tx	Rx	Remarks
:SOUR:ALT:SPOI:LIM:STAT?	:SOUR:ALT:SPOI:LIM:STAT 0	Query returns the current state OFF
:SOUR:ALT:SPOI:LIM:STAT 1		Set the state to ON
:SOUR:ALT:SPOI:LIM:STAT?	:SOUR:ALT:SPOI:LIM:STAT 1	Query returns the current state ON

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:ALT:SPOI:LIM:UPP

Applicability   PACE6000 E

Short Form: :SOUR:ALT:SPOI:LIM:UPP

Command Syntax

`:SOURce[x]:ALTitude:SPOInt:LIMit:UPPer <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: setpoint upperlimit in altitude mode within the fullscale range

Function: Set user defined set-point upper limit for Altitude mode.

Query Syntax

`:SOURce[x]:ALTitude:SPOInt:LIMit:UPPer?`

where x = is the module number (default is 1)

Function: Ask for user defined set-point upper limit for Altitude mode.

Response: Double: User defined set-point upper limit for Altitude mode

Description

Command to set or query user defined set-point upper limit for Altitude mode.

Example

Tx	Rx	Remarks
:SOUR:ALT:SPOI:LIM:UPP?	:SOUR:ALT:SPOI:LIM:UPP 55000.0000000	Query returns the current value
:SOUR:ALT:SPOI:LIM:UPP 20000		Set the value as 20000
:SOUR:ALT:SPOI:LIM:UPP?	:SOUR:ALT:SPOI:LIM:UPP 20000	Query returns the current value.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware
-221, \"Settings conflict\"	Upper limit must be greater than lower limit

:SOUR:ALT:TIM:ROC

Applicability PACE6000 E

Short Form: :SOUR:ALT:ROC

Command Syntax

`:SOURce[x]:ALTitude[:TIMed]:ROC ABORt|STARt`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (ABORt, STARt): Timed rate of climb

Function: Start or stop the timed ROC

Query Syntax

`:SOURce[x]:ALTitude[:TIMed]:ROC?`

where x = is the module number (default is 1)

Function: Queries the timed ROC state

Response: Character - Enumerated : ABORt,STARt

Description

The command to set and get timed Rate of Climb (timed ROC) start/ abort condition. Note. Device should be in altitude mode.

Example

Tx	Rx	Remarks
:SENS:ALT:TIMed:ROC STARt		Start the timed ROC
:SENS:ALT:TIMed:ROC?	:SENS:ALT:TIM:ROC STARt	Query return the current timed ROC state

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-222, \"Data out of range\"	Input validation failed
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:ALT:TIM:ROC:PER

Applicability   PACE6000 E

Short Form: :SOUR:ALT:ROC:PER

Command Syntax

`:SOURce[x]:ALTitude[:TIMed]:ROC:PERiod <value>`

where x = is the module number (default is 1)

Parameter: Numerical Integer: Time average period for timed ROC.

Function: Set the time average period for timed altitude ROC.

Query Syntax

`:SOURce[x]:ALTitude[:TIMed]:ROC:PERiod?`

where x = is the module number (default is 1)

Function: Queries the time average period for timed altitude ROC.

Response: Integer: Average time period.

Description

The command to set and set time average period for timed altitude ROC.

Example

Tx	Rx	Remarks
:SOUR:ALT:TIMEd:ROC:PERiod ?	:SOUR:ALT:TIM:ROC:PER 30	Query return the current time average period for ROC
:SOUR:ALT:TIM:ROC:PER?:SOUR:ALT:TIM:ROC:PER 60		Query return the current time average period for ROC

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:ALT:TIM:ROC:PER:MAX

Applicability   PACE6000 E

Short Form: :SOUR:ALT:ROC:PER:MAX

Query Syntax

`:SOURce[x]:ALTitude[:TIMed]:ROC:PERiod:MAXimum?`

where x = is the module number (default is 1)

Function: The query command to get the timed rate of climb upper limit in altitude mode

Response: Returns timed rate of climb upper limit in altitude mode

Description

This query gets the timed rate of climb upper limit in altitude mode

Example

Tx	Rx	Remarks
:SOUR:ALT:TIM:ROC:PER:MAX ?	:SOUR:ALT:TIM:ROC:PER:MAX 6000	Returns timed rate of climb upper limit in altitude mode

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:ALT:TIM:ROC:PER:MIN

Applicability   PACE6000 E

Short Form: :SOUR:ALT:ROC:PER:MIN

Query Syntax

`:SOURce[x]:ALTitude[:TIMed]:ROC:PERiod:MINimum?`

where x = is the module number (default is 1)

Function: The query command to get the timed rate of climb slew rate lower limit in altitude mode

Response: Returns timed rate of climb slew rate lower limit in altitude mode

Description

This query gets the timed rate of climb slew rate lower limit in altitude mode

Example

Tx	Rx	Remarks
:SOUR:ALT:TIM:ROC:PER:MIN ?	:SOUR:ALT:TIM:ROC:PER:MIN 1	Returns timed rate of climb slew rate lower limit in altitude mode

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:ALT:TIM:ROC:VAL

Applicability   PACE6000 E

Short Form: :SOUR:ALT:ROC:VAL

Query Syntax

`:SOURce[x]:ALTitude[:TIMed]:ROC:VALue?`

where x = is the module number (default is 1)

Function: Ask for time averaged altitude ROC.

Response: Double: Time averaged altitude ROC value.

Description

The query command to get time averaged altitude ROC.

Example

Tx	Rx	Remarks
:SOUR:AERO:TIMEd:ROC:VAL ?	:SOUR:AERO:TIM:ROC:VAL 0.0	Query returns the current averged altitude ROC value.

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:MACH:GRO

Applicability   PACE6000 E

Short Form: :SOUR:MACH:GRO

Command Syntax

`:SOURce[x]:MACH:GROund <state>`

where x = is the module number (default is 1)

Parameter: Integer: Mach go to ground status: 0 - Abort ,1 -Start

Function: Set the Go to ground status for MACH

Query Syntax

`:SOURce[x]:MACH:GROund?`

where x = is the module number (default is 1)

Function: Queries the Go to ground status for MACH

Response: Integer: 0 - Go to ground OK/ Go to ground not in progress.

1 - Go to ground in progress.

2 - Go to ground timed out.

3 - Go to ground finished with trapped pressure.

4 - Go to ground Aborted.

Description

Command to check Go to ground status for MACH, if the specified CM is in MACH mode, command returns go to ground status otherwise error code is returned

Example

Tx	Rx	Remarks
:SOUR:MACH:GRO 1		Started the go to ground.
:SOUR:MACH:GRO?	:SOUR:MACH:GRO 1	Immediate query returns the process is inprogress
:SOUR:MACH:GRO?	:SOUR:MACH:GRO 0	Query returns the process is completed

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-222, \"Data out of range\"	Input validation failed
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:MACH:INL

Applicability   PACE6000 E

Short Form: :SOUR:MACH:INL

Command Syntax

`:SOURce[x]:MACH:INLimits <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: mach inlimit band value within the fullscale range

Function: Set the limit band in percentage full scale for mach mode.

Query Syntax

`:SOURce[x]:MACH:INLimits?`

where x = is the module number (default is 1)

Function: Ask for the limit band in percentage full scale for mach mode.

Response: Double: In-limit band in percentage full scale

Description

Command to set and query in limit band in percentage Full scale for Mach mode.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SOUR:MACH:INL?	:SOUR:MACH:INL 0.0000000	Querry will return the current in limit band in percentage full scale for mach mode..
:SOUR:MACH:INL 0.0302353		Set the value to 0.0302353
:SOUR:MACH:INL?	:SOUR:MACH:INL 0.0302353	Returns the current value as 0.0302353

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:MACH:INL:TIME

CAUTION: For more precise inlimit timer set/get operation please refer to SCPI command :SOUR:MACH:INL:TIME:PREC. Minimum setting value returned by the :SOUR:MACH:INL:TIME will be 1, even if the value has been set to a lower resolution via the precision SCPI command or from the UI. Values returned by :SOUR:MACH:INL:TIME will be truncated down to integer. Inlimit Timer Range - Lower limit: 1 Upper limit: 60.

Applicability   PACE6000 E

Short Form: :SOUR:MACH:INL:TIME

Command Syntax

`:SOURce[x]:MACH:INLimits:TIME <value>`

where x = is the module number (default is 1)

Parameter: Numerical Integer: mach inlimit time value

Function: Inlimit time is Integer value

Query Syntax

`:SOURce[x]:MACH:INLimits:TIME?`

where x = is the module number (default is 1)

Function: Queries the time that the Mach value has to be within limits.

Response: Integer: Number representing in-limits time in seconds

Description

Sets / queries the time that the Mach value has to be within limits.

Example

Tx	Rx	Remarks
:SOUR:MACH:INL:TIME?	:SOUR:MACH:INL:TIME 1	Query will return the current inlimit time
:SOUR:MACH:INL:TIME 60		Set the inlimit time to 60.
:SOUR:MACH:INL:TIME?	:SOUR:MACH:INL:TIME 60	Query will returns the current inlimit time

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:MACH:INL:TIME:PREC

Applicability   PACE6000 E

Short Form: :SOUR:MACH:INL:TIME:PREC

Command Syntax

:SOURce[x]:MACH:INLimits:TIME:PRECision <value>

where x = is the module number (default is 1)

Parameter: Numerical Real: Higher precision in-limit time value in seconds

Function: Sets a higher precision time that the Airspeed has to be within limits before generating a service request

Query Syntax

:SOURce[x]:MACH:INLimits:TIME:PRECision?

where x = is the module number (default is 1)

Function: The SCPI command is used to get higher precision inlimits time value

Response: Double representing higher precision of in-limits time value in seconds

Description

The SCPI command is used to get/set higher precision in-limits time value compared to legacy SCPI command :SOUR:MACH:INL:TIME

Example

Tx	Rx	Remarks
:SOUR:MACH:INL:TIME:PREC?	:SOUR:MACH:INL:TIME:PREC 0.1	Default in-limit time is 0.1
:SOUR:MACH:INL:TIME:PREC 0.9	None	Can be set to 0.9 by issuing command
:SOUR:MACH:INL:TIME:PREC?	:SOUR:MACH:INL:TIME:PREC 0.9	None
:SOUR:MACH:INL:TIME:PREC 5.9	None	Can be set to 5.9 by issuing command
:SOUR:MACH:INL:TIME:PREC?	:SOUR:MACH:INL:TIME:PREC 5.9	None
:SOUR:MACH:INL:TIME:PREC min		Set to minimum in-limits timer value.
:SOUR:MACH:INL:TIME:PREC max		Set to maximum in-limit timer value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:MACH:LEV:IMM:AMPL

Applicability   PACE6000 E

Short Form: :SOUR:MACH

Command Syntax

`:SOURce[x]:MACH[:LEVel][:IMMediate][:AMPLitude] <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Mach set point value within the fullscale range

Function: Sets the MACH set-point

Query Syntax

`:SOURce[x]:MACH[:LEVel][:IMMediate][:AMPLitude]?`

where x = is the module number (default is 1)

Function: Programmable set-point value

Response: Double: Number representing the set-point in MACH number

Description

Sets the MACH set-point. This query gets the decimal number representing the set-point in MACH number.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict and range in atitude mode(:INST:TASK:AERO:RANG?).If it is not in atitude mode need to changed to altitude mode using :INST:TASK:AERO:RANG ALT command.

Example

Tx	Rx	Remarks
:SOUR:MACH:LEV:IMM:AMPL?	:SOUR:MACH:LEV:IMM:AMPL 0	Returns the current MACH setpoint
:SOUR:MACH:LEV:IMM:AMPL 2		Set the MACH setpoint to 2
:SOUR:MACH:LEV:IMM:AMPL?	:SOUR:MACH:LEV:IMM:AMPL 2	Returns the current MACH set point as 2

:SOUR:MACH:LEV:IMM:AMPL:MAX

Applicability   PACE6000 E

Short Form: :SOUR:MACH:MAX

Query Syntax

`:SOURce[x]:MACH[:LEVel][:IMMediate][:AMPLitude]:MAXimum?`

where x = is the module number (default is 1)

Function: The query command to get the aeronautical setpoint upper limit in mach mode

Response: Returns aeronautical setpoint upper limit in mach mode

Description

This query gets the aeronautical setpoint upper limit in mach mode

Example

Tx	Rx	Remarks
:SOUR2:MACH:LEV:IMM:AMPL: MAX?	:SOUR2:MACH:LEV:IMM:AMPL: MAX 1.0322910	Returns aeronautical setpoint upper limit in mach mode

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:MACH:LEV:IMM:AMPL:MIN

Applicability   PACE6000 E

Short Form: :SOUR:MACH:MIN

Query Syntax

`:SOURce[x]:MACH[:LEVel][:IMMediate][:AMPLitude]:MINimum?`

where x = is the module number (default is 1)

Function: The query command to get the aeronautical setpoint lower limit in mach mode

Response: Returns aeronautical setpoint lower limit in mach mode

Description

This query gets the aeronautical setpoint lower limit in mach mode

Example

Tx	Rx	Remarks
:SOUR2:MACH:LEV:IMM:AMPL: MIN?	:SOUR2:MACH:LEV:IMM:AMPL: MIN 0.0000000	Returns aeronautical setpoint lower limit in mach mode

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:MACH:LEV:IMM:AMPL:SLEW

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:MACH:SLEW

Command Syntax

`:SOURce[x]:MACH[:LEVel][:IMMediate][:AMPLitude]:SLEW <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: mach slewrate within the fullscale range

Function: Sets the rate of mach slew rate.

Query Syntax

`:SOURce[x]:MACH[:LEVel][:IMMediate][:AMPLitude]:SLEW?`

where x = is the module number (default is 1)

Function: The query to get the rate of mach slew rate.

Response: Double: Returns rate of mach slew rate

Description

Set/ queries the user defined rate of Mach.

Example

Tx	Rx	Remarks
:SOUR:MACH:LEV:IMM:AMPL: SLEW?	:SOUR:MACH:LEV:IMM:AMPL: SLEW 0.6000000	Returns rate of Mach value
:SOUR:MACH:LEV:IMM:AMPL: SLEW 0.1		Sets the rate of Mach value as 0.1
:SOUR:MACH:LEV:IMM:AMPL: SLEW?	:SOUR:MACH:LEV:IMM:AMPL: SLEW 0.1000000	Returns rate of Mach value as 0.1

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:MACH:LEV:IMM:AMPL:SLEW:MAX

Applicability   PACE6000 E

Short Form: :SOUR:MACH:SLEW:MAX

Query Syntax

`:SOURce[x]:MACH[:LEVel][:IMMediate][:AMPLitude]:SLEW:MAXimum?`

where x = is the module number (default is 1)

Function: The query command to get the rate of mach upper limit in mach mode

Response: Returns rate of mach upper limit in mach mode

Description

This query gets the rate of mach upper limit in mach mode

Example

Tx	Rx	Remarks
:SOUR2:MACH:LEV:IMM:AMPL: SLEW:MAX?	:SOUR2:MACH:LEV:IMM:AMPL: SLEW:MAX 59.1500000	Returns rate of mach upper limit in mach mode

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:MACH:LEV:IMM:AMPL:SLEW:MIN

Applicability   PACE6000 E

Short Form: :SOUR:MACH:SLEW:MIN

Query Syntax

`:SOURce[x]:MACH[:LEVel][:IMMediate][:AMPLitude]:SLEW:MINimum?`

where x = is the module number (default is 1)

Function: The query command to get the rate of mach lower limit in mach mode

Response: Double: Returns rate of mach lower limit in mach mode

Description

This query gets the rate of mach lower limit in mach mode

Example

Tx	Rx	Remarks
:SOUR2:MACH:LEV:IMM:AMPL: SLEW:MIN?	:SOUR2:MACH:LEV:IMM:AMPL: SLEW:MIN 5.0000000	Returns rate of mach lower limit in mach mode

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:MACH:REF

Applicability   PACE6000 E

Short Form: :SOUR:MACH:REF

Query Syntax

`:SOURce[x]:MACH:REFerence?`

where x = is the module number (default is 1)

Function: Queries the MACH reference value from either Ps reference or barometric.

Response: Decimal number representing the MACH reference value in currently selected pressure units.

Description

The query gets the MACH reference value in currently selected aeronautical pressure units.

Example

TX	Rx	Remarks
:SOUR:MACH:REF?	:SOUR:MACH:REF 0.0000000	Query will returns the current MACH reference value.

:SOUR:MACH:REF:MODE

Applicability   PACE6000 E

Short Form: :SOUR:MACH:REF:MODE

Command Syntax

`:SOURce[x]:MACH:REFerence:MODE MANual|BARometric`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (MANual, BARometric): Mach reference

Function: Set the MACH reference mode

Query Syntax

`:SOURce[x]:MACH:REFerence:MODE?`

where x = is the module number (default is 1)

Function: Queries the MACH reference mode

Response: Enum: MANual, BARometric

Description

This command enables a MACH reference mode to be set. The query gets the MACH reference entered mode.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SOUR:MACH:REF:MODE?	:SOUR:MACH:REF:MODE MANual	Query returns the current MACH reference mode.
:SOUR:MACH:REF:MODE barometric		Set the mode to barometric.
:SOUR:MACH:REF:MODE?	:SOUR:MACH:REF:MODE BARometric	Query returns the current mode as barometric

:SOUR:MACH:REF:VAL

Applicability   PACE6000 E

Short Form: :SOUR:MACH:REF:VAL

Command Syntax

`:SOURce[x]:MACH:REFerence:VALue <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: mach barometric pressure value in current pressure unit within the fullscale

Function: Set the MACH reference value.

Query Syntax

`:SOURce[x]:MACH:REFerence:VALue?`

where x = is the module number (default is 1)

Function: Queries the MACH reference value.

Response: Double: Value of the MACH reference.

Description

This command sets the MACH reference entered value from either Ps reference. The query gets the MACH reference entered value.

Example

Tx	Rx	Remarks
:SOUR:MACH:REF:VAL?	:SOUR:MACH:REF:VAL 0.0000000	Query returns the MACH reference entered value.
:SOUR:MACH:REF:VAL 10		Set the MACH reference value to 10.
:SOUR:MACH:REF:VAL?	:SOUR:MACH:REF:VAL 10	Query returns the current MACH reference value.

:SOUR:MACH:SPOI:LIM:LOW

Applicability   PACE6000 E

Short Form: :SOUR:MACH:SPOI:LIM:LOW

Command Syntax

`:SOURce[x]:MACH:SPOInt:LIMit:LOWer <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: mach setpoint lower limit value within the fullscale range

Function: Set user defined set-point lower limit for MACH mode.

Query Syntax

`:SOURce[x]:MACH:SPOInt:LIMit:LOWer?`

where x = is the module number (default is 1)

Function: Ask for user defined set-point lower limit for MACH mode.

Response: Double: User defined set-point lower limit for MACH mode

Description

Command to set or query user defined set-point lower limit for MACH mode.

Example

Tx	Rx	Remarks
:SOUR:MACH:SPOI:LIM:LOW?	:SOUR:MACH:SPOI:LIM:LOW 0.3023259	
:SOUR:MACH:SPOI:LIM:LOW max		Set to maximum value.
:SOUR:MACH:SPOI:LIM:LOW min		Setting to minimum value.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware
-221, "Settings conflict"	Lower limit must be less than upper limit

:SOUR:MACH:SPOI:LIM:STAT

Applicability   PACE6000 E

Short Form: :SOUR:MACH:SPOI:LIM:STAT

Command Syntax

`:SOURce[x]:MACH:SPOInt:LIMit:STATe 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: mach setpoint limit state(ON or OFF)

Function: Set user defined set-point lower limit for Airspeed mode.

Query Syntax

`:SOURce[x]:MACH:SPOInt:LIMit:STATe?`

where x = is the module number (default is 1)

Function: Ask user defined set-point lower limit for Airspeed mode.

Response: Boolean: 1 - ON and 0 - OFF

Description

Command to set or query user defined set-point state for Mach mode.

Example

Tx	Rx	Remarks
:SOUR:MACH:SPOI:LIM:STAT?	:SOUR:MACH:SPOI:LIM:STAT 0	Query returns the current state OFF.
:SOUR:MACH:SPOI:LIM:STAT 1		Set the state to 1.
:SOUR:MACH:SPOI:LIM:STAT?	:SOUR:MACH:SPOI:LIM:STAT 1	Query returns the current state ON.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:MACH:SPOI:LIM:UPP

Applicability   PACE6000 E

Short Form: :SOUR:MACH:SPOI:LIM:UPP

Command Syntax

`:SOURce[x]:MACH:SPOInt:LIMit:UPPer <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: mach setpoint upper limit within the fullscale range

Function: Set user defined set-point upper limit for MACH mode.

Query Syntax

`:SOURce[x]:MACH:SPOInt:LIMit:UPPer?`

where x = is the module number (default is 1)

Function: Ask for user defined set-point upper limit for MACH mode.

Response: Double: User defined set-point upper limit for MACH mode

Description

Command to set or query user defined set-point upper limit for MACH mode.

Example

Tx	Rx	Remarks
:SOUR:MACH:SPOI:LIM:UPP?	:SOUR:MACH:SPOI:LIM:UPP 0.3023259	
:SOUR:MACH:SPOI:LIM:UPP max		Set to maximum value.
:SOUR:MACH:SPOI:LIM:UPP min		Setting to minimum value.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware
-221, "Settings conflict"	Upper limit must be greater than lower limit

:SOUR:PRES:COMP

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:COMP

Query Syntax

:SOURce[x][:PRESsure]:COMPensate[y]?

where x = is the module number (default is 1) , y = is the Source Pressure Measurement (default is 1)

Function: Queries the +ve or the –ve supply source pressure sensor.

Response: Double: Pressure value in current pressure units.

Description

Returns the +ve and –ve source pressure values in the current pressure units. An alternative query to :SENS:PRES? that does not require preselection of the sensor using the:SENS:PRES:RANG command. Refer to :SENS:PRESS:BAR, :SENS:PRES:CONT, :SENS:PRES:PSE and :SENS:PRES:REF

y	Source Pressure Measurement
1	+ve
2	-ve

Example

Tx	Rx	Remarks
:SOUR:PRES:COMP?	:SOUR:PRES:COMP 15.2952799	Query returns Pressure value in current units
:SOUR:PRES:COMP1?	:SOUR:PRES:COMP 15.2952799	Query returns +ve supply source pressure sensor
:SOUR:PRES:COMP2?	:SOUR:PRES:COMP 0.2313803	Query returns -ve supply source pressure sensor
:SOUR:PRES:COMP3?		If x is greater than 2, an error will be reported
:SYST:ERR?	:SYST:ERR -114,"Header suffix out of range"	

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-400, "Query error"	Invalid or unavailable reading
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:EFF

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:EFF

Query Syntax

:SOURce[x][:PRESsure]:EFFort?

where x = is the module number (default is 1)

Function: This query only command returns the effort needed for the controller to achieve the set-point.

Response: Decimal percent number representing controller effort.

Description

This query only command returns the % effort the controller does to achieve the set-point

Example

Tx	Rx	Remarks
:SOUR:PRES:EFF?	:SOUR:PRES:EFF -0.2342882	Percentage of effort the supply or vacuum valve makes to maintain the control point. The return number should be –100 to +100. A positive number indicates the supply valve makes more effort and a minus number indicates the vacuum valve makes more effort.
:OUTP off	None	The controller is off
:SOUR:PRES:EFF?	:SOUR:PRES:EFF 0.0	The return number is '0.0', since no valve is making any effort.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:INL

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:INL

Command Syntax

`:SOURce[x][:PRESsure]:INLimits <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: in limits value as % full-scale

Function: The controller has an in-limits set-point indicator. This can generate a service request when the pressure is within limits for a set time period.

Query Syntax

`:SOURce[x][:PRESsure]:INLimits?`

where x = is the module number (default is 1)

Function: Query in-limits value

Response: Double: Number representing in-limits value as % full-scale

Description

Sets the in-limits value

Example

Tx	Rx	Remarks
:SOUR:PRES:INL?	:SOUR:PRES:INL 0.0200000	The current in-limits set-point is 0.02% full-scale.
:SOUR:PRES:INL 0.01	None	Set in-limits set-point to 0.01
:SOUR:PRES:INL?	:SOUR:PRES:INL 0.0100000	The current in-limits set-point is 0.01% full-scale.
:SOUR:PRES:INL max		Set to maximum in-limit value
:SOUR:PRES:INL min		Set to minimum in-limit value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:INL:BAND

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:INL:BAND

Command Syntax

:SOURce[x][:PRESsure]:INLimits:BAND <value>

where x = is the module number (default is 1)

Parameter: Numerical Real: passive in-limit value within the full-scale

Function: Sets the passive/gauge in-limits band value

Query Syntax

:SOURce[x][:PRESsure]:INLimits:BAND?

where x = is the module number (default is 1)

Function: Asks for current the passive/gauge in-limits band value

Response: Double: Number representing current passive/gauge in-limits band value

Description

The command is used to query and set the passive/gauge in-limits band value based on control mode selected

Example

Tx	Rx	Remarks
:SOUR:PRES:INL:BAND?	:SOUR:PRES:INL:BAND 0.01	Return the current passive/gauge in-limits band value
:SOUR:PRES:INL:BAND 0.03		Sets the passive/gauge in-limit value as 0.03
:SOUR:PRES:INL:BAND?	:SOUR:PRES:INL:BAND 0.03	Return the current in-limit band value as 0.03
:SOUR:PRES:INL:BAND min		Set to minimum passive/gauge in-limits band value
:SOUR:PRES:INL:BAND max		Set to maximum passive/gauge in-limit band value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:INL:TIME

CAUTION: For more precise inlimit timer set/get operation please refer to SCPI command :SOUR:PRES:INL:TIME:PREC. Minimum setting value returned by the :SOUR:PRES:INL:TIME will be 1, even if the value has been set to a lower resolution via the precision SCPI command or from the UI. Values returned by :SOUR:SPE:PRES:TIME will be truncated down to integer. Inlimit Timer Range - Lower limit: 1 Upper limit: 60.

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:INL:TIME

Command Syntax

`:SOURce[x][:PRESsure]:INLimits:TIME <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: in-limits time in seconds

Function: Sets the time that the pressure has to be within limits before generating a service request.

Query Syntax

`:SOURce[x][:PRESsure]:INLimits:TIME?`

where x = is the module number (default is 1)

Function: Query in-limits timers.

Response: Integer: Number representing in-limits time in seconds

Description

Sets the in-limits timer value.

Example

Tx	Rx	Remarks
:SOUR:PRES:INL:TIME?	:SOUR:PRES:INL:TIME 1	Default in-limit time is 1
:SOUR:PRES:INL:TIME 9	None	Can be set to 9 by issuing command
:SOUR:PRES:INL:TIME?	:SOUR:PRES:INL:TIME 9	None
:SOUR:PRES:INL:TIME 59	None	Can be set to 59 by issuing command
:SOUR:PRES:INL:TIME?	:SOUR:PRES:INL:TIME 59	None
:SOUR:PRES:INL:TIME min		Set to minimum in-limits timer value.
:SOUR:PRES:INL:TIME max		Set to maximum in-limit timer value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:INL:TIME:PREC

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:INL:TIME:PREC

Command Syntax

`:SOURce[x][:PRESsure]:INLimits:TIME:PRECision <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: In-limits time with higher precision

Function: Sets a higher precision time that the pressure has to be within limits before generating a service request

Query Syntax

`:SOURce[x][:PRESsure]:INLimits:TIME:PRECision?`

where x = is the module number (default is 1)

Function: The SCPI command is used to get higher precision inlimits time value

Response: Double: Number representing higher precision of in-limits time value in seconds

Description

The SCPI command is used to get/set higher precision inlimits time value compared to legacy SCPI command :SOUR:PRES:INL:TIME

Example

Tx	Rx	Remarks
:SOUR:PRES:INL:TIME:PREC?	:SOUR:PRES:INL:TIME:PREC 0.1	Default in-limit time is 0.1
:SOUR:PRES:INL:TIME:PREC 0.9	None	Can be set to 0.9 by issuing command
:SOUR:PRES:INL:TIME:PREC?	:SOUR:PRES:INL:TIME:PREC 0.9	None
:SOUR:PRES:INL:TIME:PREC 5.9	None	Can be set to 5.9 by issuing command
:SOUR:PRES:INL:TIME:PREC?	:SOUR:PRES:INL:TIME:PREC 5.9	None
:SOUR:PRES:INL:TIME:PREC min		Set to minimum in-limits timer value.
:SOUR:PRES:INL:TIME:PREC max		Set to maximum in-limit timer value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:ITIM

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:ITIM

Command Syntax

`:SOURce[x][:PRESsure]:ITIMeout <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Idle timeout value

Function: Set the idle timeout timer value in seconds

Query Syntax

`:SOURce[x][:PRESsure]:ITIMeout?`

where x = is the module number (default is 1)

Function: Ask for the idle timeout timer value in seconds

Response: Integer: Idle timeout timer value in seconds

Description

The idle-timeout feature triggers the PACE device to switch from control mode to measure mode if there is no new set-point being entered in selected time frame. The command is used to query and set the idle timeout timer value in seconds

Example

Tx	Rx	Remarks
:SOUR:PRES:ITIM?	:SOUR:PRES:ITIM 0	Return the idle timeout value
:SOUR:PRES:ITIM 60		Set the idle timeout value as 60 second
:SOUR:PRES:ITIM?	:SOUR:PRES:ITIM 60	Return the idle timeout value as 60 second
:SOUR:PRES:ITIM min		Set to the minimum idle timeout value
:SOUR:PRES:ITIM max		Set to maximum idle timeout value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:ITIM:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:ITIM:STAT

Command Syntax

:SOURce[x][:PRESsure]:ITIMeout:STATe 0|1

where x = is the module number (default is 1)

Parameter: Boolean: Idle timeout state (ON or OFF)

Function: Set the idle timeout state

Query Syntax

:SOURce[x][:PRESsure]:ITIMeout:STATe?

where x = is the module number (default is 1)

Function: Ask for the idle timeout state

Response: Boolean: 0 - Disable 1 - Enable

Description

The command is used to query and set the idle timeout state

Example

Tx	Rx	Remarks
:SOUR:PRES:ITIM:STAT?	:SOUR:PRES:ITIM:STAT 0	Idle time state is disabled
:SOUR:PRES:ITIM:STAT 1		Enabled the idle timeout state
:SOUR:PRES:ITIM:STAT?	:SOUR:PRES:ITIM:STAT 1	Returns the idle timeout state as enabled

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:LEV:IMM:AMPL

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR

Command Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]`
`<value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Pressure in current units within the full-scale range.

Function: Set the pressure set-point

Query Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]?`

where x = is the module number (default is 1)

Function: Programmable set-point value

Response: Double: Value representing pressure set-point in current units.

Description

This command sets the pressure set-point and is the long form of :SOUR:PRES.

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL?	:SOUR:PRES:LEV:IMM:AMPL 0.4000000	The current controller set-point is 0.4 of the current unit.
:SOUR:PRES:LEV:IMM:AMPL 0.5	None	It can be set to another value
:SOUR:PRES:LEV:IMM:AMPL?	:SOUR:PRES:LEV:IMM:AMPL 0.5000000	The current controller set-point is 0.5 of the current unit
:SOUR:PRES:LEV:IMM:AMPL min		Set the set-point to minimum value
:SOUR:PRES:LEV:IMM:AMPL max		Set the set-point to maximum value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-294, "Incompatible type"	Operation not allowed in this mode
-241, "Hardware missing"	Cannot find the hardware

:SOUR:PRES:LEV:IMM:AMPL:MAX

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:MAX

Query Syntax

```
:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:MAXim
um?
```

where x = is the module number (default is 1)

Function: Get the upper limit of set point in current pressure units.

Response: Double: Set point upper limit in current pressure units.

Description

This command returns the upper limit of set point that can be set.

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL:MAX?	:SOUR:PRES:LEV:IMM:AMPL:MAX 4000	Returns the upper limit of set point

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-294, "Incompatible type"	Invalid mode for pressure setpoint
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:LEV:IMM:AMPL:MIN

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:MIN

Query Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:MINimum?`

where x = is the module number (default is 1)

Function: Get the lower limit of set point in current pressure units.

Response: Double: Set point lower limit in current pressure units.

Description

This command returns the lower limit of set point that can be set .

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL:MIN?	:SOUR:PRES:LEV:IMM:AMPL:MIN 4000	Returns the lower limit of set point

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-294, "Incompatible type"	Invalid mode for pressure setpoint
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:LEV:IMM:AMPL:VENT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT

Command Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT <value>`

where x = is the module number (default is 1)

Parameter: Integer: Vent process status : 0 - Abort ,1 -Start vent

Function: Vents the user system.

Query Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT?`

where x = is the module number (default is 1)

Function: Query status of vent

Response: 0 - Vent OK/ Vent not in progress.

1 - Vent in progress.

2 - Vent timed out.

3 - Vent finished with trapped pressure (> 200 mbar).

4 - Vent Aborted.

Description

This command vents the user system; the command should be queried to get the status of the vent.

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL:VENT?	:SOUR:PRES:LEV:IMM:AMPL:VENT 0	A return of '0' indicates vent not in progress
:SOUR:PRES:LEV:IMM:AMPL:VENT 1	None	A vent can be started
:SOUR:PRES:LEV:IMM:AMPL:VENT?	:SOUR:PRES:LEV:IMM:AMPL:VENT 1	Immediate query, a return of '1' indicates vent in progress
:SOUR:PRES:LEV:IMM:AMPL:VENT?	:SOUR:PRES:LEV:IMM:AMPL:VENT 0	Continuing queries return '1', until the vent finishes and a return of '0'
:SOUR:PRES:LEV:IMM:AMPL:VENT 0	None	To abort the vent process

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Failed to validate the data

-241, "Hardware missing"	Cannot find the hardware

:SOUR:PRES:LEV:IMM:AMPL:VENT:AFT:VVAL:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:AFT:VVAL

Command Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:`
`AFTer:VVALve[:STATe] CLOSed|OPEN`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (CLOSed, OPEN): valve state after vent process.

Function: This command sets the desired state of vent valve after venting.

Query Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:`
`AFTer:VVALve[:STATe]?`

where x = is the module number (default is 1)

Function: This query gets the desired state of vent valve after venting

Response: Enum - CLOSed or OPen

Description

This command can set or get the desired vent valve state after venting process

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL:VENT:AFT:VVAL:STAT?	:SOUR:PRES:LEV:IMM:AMPL:VENT:AFT:VVAL:STAT CLOSed	Returns whether the vent valve state will be CLOSed after vent
:SOUR:PRES:LEV:IMM:AMPL:VENT:AFT:VVAL:STAT OPEN		Set the vent valve state as OPEN after vent is done
:SOUR:PRES:LEV:IMM:AMPL:VENT:AFT:VVAL:STAT?	:SOUR:PRES:LEV:IMM:AMPL:VENT:AFT:VVAL:STAT OPEN	Returns whether vent valve will be OPEN after vent

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Failed to set the value
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:LEV:IMM:AMPL:VENT:APOP:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:APOP:STAT

Command Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:`
`APOPup:STATe DISabled|ENABled`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (DISabled, ENABled): Acknowledge Popup state

Function: This query gets the Vent popup acknowledgement state

Query Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:`
`APOPup:STATe?`

where x = is the module number (default is 1)

Function: This command sets the Vent popup acknowledgement sate.

Response: Enum: DISABled

ENABled

Description

The command will set or get the Vent popup acknowledgement state

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL:VENT:APOP:STATE?	:SOUR:PRES:LEV:IMM:AMPL:VENT:APOP:STATE DISabled	Query command will return the vent popup acknowledgement state as DISabled
:SOUR:PRES:LEV:IMM:AMPL:VENT:APOP:STATE ENAB		Set the acknowledgement state as ENABled
:SOUR:PRES:LEV:IMM:AMPL:VENT:APOP:STATE?	:SOUR:PRES:LEV:IMM:AMPL:VENT:APOP:STATE ENABled	Query will return the state as ENABled

:SOUR:PRES:LEV:IMM:AMPL:VENT:ETIM

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:ETIM

Query Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:ETIMe?`

where x = is the module number (default is 1)

Function: This query gets the Vent elapsed time in seconds.

Response: Integer: Vent elapsed time in seconds.

Description

This query command will return the vent elapsed time

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL:VENT:ETIM?	:SOUR:PRES:LEV:IMM:AMPL:VENT:ETIM 30	Query command will return the vent elapsed time in seconds
:SOUR2:PRES:LEV:IMM:AMPL:VENT:ETIM?	:SOUR2:PRES:LEV:IMM:AMPL:VENT:ETIM 0	Return the elapsed time for the second CM.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:LEV:IMM:AMPL:VENT:ORPV:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:ORPV:STAT

Command Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:ORPV:STATe DISable|ENABle`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (DISable, ENABle): Over range protective valve state

Function: Enable/Disable over range protective vent feature

Query Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:ORPV:STATe?`

where x = is the module number (default is 1)

Function: Gets state of over range protective vent feature

Response: Enum: DISabled

ENABled

Description

Sets or gets the state of overrange protective vent feature

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL:VENT:ORPV:STATE?	:SOUR:PRES:LEV:IMM:AMPL:VENT:ORPV:STATE DISabled	Query command will return the Over range protective vent feature as DISabled
:SOUR:PRES:LEV:IMM:AMPL:VENT:ORPV:STATE ENAB		Set the Over range protective vent feature as ENABled
:SOUR:PRES:LEV:IMM:AMPL:VENT:ORPV:STATE?	:SOUR:PRES:LEV:IMM:AMPL:VENT:ORPV:STATE ENABled	Query will return the Over range protective vent feature as ENABled

:SOUR:PRES:LEV:IMM:AMPL:VENT:PUPV:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:PUPV:STAT

Command Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:PUPV:STATe DISable|ENABle`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (DISable, ENABle): Power up valve state

Function: Enables or Disables power up protective vent feature

Query Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:PUPV:STATe?`

where x = is the module number (default is 1)

Function: Queries whether power up protective vent is enabled

Response: Enum: DISabled

ENABled

Description

This command is to enable/disable the Power up protective vent feature or query whether it is enabled

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL:VENT:PUPV:STATE?	:SOUR:PRES:LEV:IMM:AMPL:VENT:PUPV:STATE DISabled	Query command will return the power up protective vent feature as DISabled
:SOUR:PRES:LEV:IMM:AMPL:VENT:PUPV:STATE ENAB		Set the power up protective vent feature as ENABled
:SOUR:PRES:LEV:IMM:AMPL:VENT:PUPV:STATE?	:SOUR:PRES:LEV:IMM:AMPL:VENT:PUPV:STATE ENAB	Query will return the power up protective vent feature as ENABled

:SOUR:PRES:LEV:IMM:AMPL:VENT:RATE

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:RATE

Command Syntax

```
:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:
RATE <value>
```

where x = is the module number (default is 1)

Parameter: Numerical Real: slew rate in current pressure units per second.

Function: Sets the controller vent slew rate.

Query Syntax

```
:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:
RATE?
```

where x = is the module number (default is 1)

Function: Queries the controller vent slew rate

Response: Double: Number representing slew rate always in current pressure units per second.

Description

This command sets the controller vent slew rate denominator time units, (/s or /m). The current setting of the denominator units can also be queried. This command allows the pressure slew rate during the vent process can be set slower or faster than the control slew rate.

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:AMPL:VENT:RATE?	:SOUR:PRES:LEV:AMPL:VENT:RATE 0.01	Default value of vent rate is 0.01
:SOUR:PRES:LEV:AMPL:VENT:RATE 2	-	Setting the vent rate as 2
:SOUR:PRES:LEV:AMPL:VENT:RATE?	:SOUR:PRES:LEV:AMPL:VENT:RATE 2	Immediately query will give the rate as 2

Possible Errors

Error	Description
-207,"Suffix out of range"	Invalid CM ID
-205,"Hardware missing"	Hardware missing

:SOUR:PRES:LEV:IMM:AMPL:VENT:RATE:MAX

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:RATE:MAX

Query Syntax

```
:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:
RATE:MAXimum?
```

where x = is the module number (default is 1)

Function: Get maximum vent rate.

Response: Double: Maximum Rate of Change of Pressure while venting. Unit will be (Current Pressure Unit)/Second or (Current Pressure Unit)/Min based on the user selection of vent rate unit.

Description

To get maximum vent rate user can provide.

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:AMPL:VENT: RATE:MAX?	:SOUR:PRES:LEV:AMPL:VENT: RATE:MAX 1	Maximum vent rate is 1

Possible Errors

Error	Description
-207,"Suffix out of range"	Invalid CM ID
-205,"Hardware missing"	Hardware missing

:SOUR:PRES:LEV:IMM:AMPL:VENT:RATE:MIN

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:RATE:MIN

Query Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:`
`RATE:MINimum?`

where x = is the module number (default is 1)

Function: Get minimum Vent rate

Response: Double: Minimum Rate of Change of Pressure while venting. Unit will be (Current Pressure Unit)/Second) or (Current Pressure Unit/Minute) based on the user selection of vent rate unit.

Description

To get the minimum value user can provide for vent rate.

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:AMPL:VENT: RATE:MIN?	:SOUR:PRES:LEV:AMPL:VENT: RATE:MIN 0.01	Minimum vent rate is 0.01

Possible Errors

Error	Description
-207,"Suffix out of range"	Invalid CM ID
-205,"Hardware missing"	Hardware missing

:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:TIM

Command Syntax

:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:TIMeout <value>

where x = is the module number (default is 1)

Parameter: Numerical Real: Vent timeout value.

Function: This command sets the Vent timeout period in seconds.

Query Syntax

:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:TIMeout?

where x = is the module number (default is 1)

Function: This query gets the Vent timeout period in seconds.

Response: Integer: Timeout value

Description

The command set or get the vent timeout period in seconds

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM?	:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM 60	Query vent time out will return vent timeout as 60
:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM 90	None	Set the vent timeout value as 90 second
:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM?	:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM 90	Query will return the previously set timeout value 90 seconds

Possible Errors

Error	Description
-207,"Suffix out of range"	Invalid CM ID
-205,"Hardware missing"	Hardware missing

:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:TIM:STAT

Command Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:TIMeout:STATe DISabled|ENABled|INValidstate`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (DISabled, ENABled, INValidstate): vent timeout state

Function: This command sets the Vent timeout state

Query Syntax

`:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:TIMeout:STATe?`

where x = is the module number (default is 1)

Function: This query gets the Vent timeout state.

Response: Enum values - ENABled,DISabled,INValid

Description

This command will set or get the vent timeout state

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM:STAT?	:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM:STAT DISabled	Vent timeout state is disabled
:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM:STAT ENABled		Set command will set the vent timeout state as enabled
:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM:STAT?	:SOUR:PRES:LEV:IMM:AMPL:VENT:TIM:STAT ENABled	Query command will return the vent timeout state as ENABled

Possible Errors

Error	Description
-207,"Suffix out of range"	Invalid CM ID
-204,"Data out of range"	Validation failed
-208,"Memory error"	Set operation failed
-205,"Hardware missing"	Hardware missing

:SOUR:PRES:LEV:IMM:AMPL:VENT:UNIT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:VENT:UNIT

Command Syntax

```
:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:
UNIT <value>
```

where x = is the module number (default is 1)

Parameter: Integer: Controller vent slew rate denominator units, see table below.

Function: Sets the controller vent slew rate denominator time units.

Query Syntax

```
:SOURce[x][:PRESsure][:LEVel][:IMMediate][:AMPLitude]:VENT:
UNIT?
```

where x = is the module number (default is 1)

Function: Queries the controller vent slew rate denominator units.

Response: Returns an integer, see table below

Description

This command sets the controller vent slew rate denominator time units, (/s or /m). The current setting of the denominator units can also be queried.

y	Remarks
0	rate/second
1	rate/minute

Example

Tx	Rx	Remarks
:SOUR:PRES:LEV:AMPL:VENT:UNIT?	:SOUR:PRES:LEV:AMPL:VENT:UNIT 0	Query returns the current unit as /s
:SOUR:PRES:LEV:AMPL:VENT:UNIT 1		Set the unit as /m
:SOUR:PRES:LEV:AMPL:VENT:UNIT?	:SOUR:PRES:LEV:AMPL:VENT:UNIT 1	Current unit is /m

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:RANG

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:RANG

Command Syntax

`:SOURce[x][:PRESsure]:RANGe <state>`

where x = is the module number (default is 1)

Parameter: String: Range information.

Function: Selects the control range.

Query Syntax

`:SOURce[x][:PRESsure]:RANGe?`

where x = is the module number (default is 1)

Function: Asks for currently selected control module range.

Response: String representing selected sense range.

Description

This command selects the range to be used for controlling pressure. e.g. :SOUR:PRES:RANG "2.0bara" selects the 2 bar absolute range; the pressure units are always in bar.

Note: Absolute ranges can be true absolute or pseudo-absolute ranges. Gauge ranges can be true gauge ranges or pseudo-gauge ranges, refer to commands ":INST:CAT:ALL?" and ":INST:CONTx:SENSy?".

Example

Tx	Rx	Remarks
:SOUR:PRES:RANG?	:SOUR:PRES:RANG "3.50barg"	Returns the current controller range
:SOUR:PRES:RANG "4.50bara"		Set the range as 4.50bara
:SOUR:PRES:RANG?	:SOUR:PRES:RANG "4.50bara"	Query returns the current range.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
1002, "Invalid sensor type"	Unsupported or unrecognized sensor type
-241, "Hardware missing"	Failed to find the hardware
1000, "Operation not allowed"	Operation not permitted in current context

:SOUR:PRES:RANG:LOW

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:RANG:LOW

Query Syntax

`:SOURce[x][:PRESsure]:RANGe:LOW?`

where x = is the module number (default is 1)

Function: Queries the lower full-scale of the module [x]

Response: Decimal number in current selected units

Description

This query gets the lower full-scale of the module [x]

Example

Tx	Rx	Remarks
:SOUR:PRES:RANG:LOW?	:SOUR:PRES:RANG:LOW - 1000	

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:RANG:SING

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:RANG:SING

Command Syntax

:SOURce[:PRESsure]:RANGe:SINGle 0|1

Parameter: Boolean: ON or OFF

Function: To select controller mode (Dual/ Single)

Query Syntax

:SOURce[:PRESsure]:RANGe:SINGle?

Function: Queries the controller mode.

Response: Boolean: 0: Dual control mode 1: In Single Controller mode

Description

This command is to select Dual or single controller mode

Example

Tx	Rx	Remarks
:SOURCE:PRESSURE:RANGE: SINGLE?	:SOURCE:PRESSURE:RANGE: SINGLE 0	Queries single controller mode status, not in single controller mode
:SOURCE:PRESSURE:RANGE: SINGLE ON	None	Enters into single controller mode
:SOURCE:PRESSURE:RANGE: SINGLE?	:SOURCE:PRESSURE:RANGE: SINGLE ON	Queries single controller mode status, In single controller mode.

Possible Errors

Error	Description
1000,"Operation not allowed"	Invalid mode

:SOUR:PRES:SLEW

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:SLEW

Command Syntax

`:SOURce[x][:PRESsure]:SLEW <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: rate in current pressure units/current time units (/s or /m) or enumerated string maximum or minimum rate.

Function: Selects the pressure rate used

Query Syntax

`:SOURce[x][:PRESsure]:SLEW?`

where x = is the module number (default is 1)

Function: Asks for current vent slew rate

Response: Double: Number representing the measured slew rate always in current pressure units per current time setting (/s or /m)

Description

When the controller rate is selected as value, this command is used to set the controllers rate in selected units/second. To set the slew rate used during the vent process, refer to commands: :SOUR:PRES:LEV:IMM:AMPL:VENT:RATE and :SOUR:PRES:LEV:IMM:AMPL:VENT:UNIT

Example

Tx	Rx	Remarks
:SOUR:PRES:SLEW?	:SOUR:PRES:SLEW 2.0000000	Get the slew rate in current pressure units
:SOUR:PRES:SLEW 4	None	set the slew rate to 4
:SOUR:PRES:SLEW?	:SOUR:PRES:SLEW 4.0000000	None
:SOUR:PRES:SLEW max	None	Set the slew rate to maximum value
:SOUR:PRES:SLEW?	:SOUR:PRES:SLEW 99999999.0000000	Read the maximum slew rate
:SOUR:PRES:SLEW min	None	Set the slew rate as minimum.
:SOUR:PRES:SLEW?	:SOUR:PRES:SLEW 0.0	Read the minimum slew rate

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:SLEW:MAX

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:SLEW:MAX

Query Syntax

`:SOURce[x][:PRESsure]:SLEW:MAXimum?`

where x = is the module number (default is 1)

Function: Queries the maximum slew rate in either (Current Pressure Units/ Second) or (Current Pressure Units/ Minute) based on time and pressure units

Response: Double: Slew rate in (Current Pressure Units/ Second) or (Current Pressure Units/ Minute)

Description

This command returns the maximum slew rate

Example

Tx	Rx	Remarks
:SOUR:PRES:SLEW:MAX?	:SOUR:PRES:SLEW:MAX 3500	Return s the maximum slew rate in mbar/second
:SOUR:PRES:SLEW:MAX?	:SOUR:PRES:SLEW:MAX 21000	The same maximum slew rate if user has selected unit as mbar/minute

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:SLEW:MIN

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:SLEW:MIN

Query Syntax

`:SOURce[x][:PRESsure]:SLEW:MINimum?`

where x = is the module number (default is 1)

Function: Queries the minimum slew rate.

Response: Double: Slew rate in (Current Pressure Units/ Second) or (Current Pressure Units/ Minute) based on the user selection of the slew rate units.

Description

This function returns the minimum slew rate in current pressure units.

Example

Tx	Rx	Remarks
:SOUR:PRES:SLEW:MIN?	:SOUR:PRES:SLEW:MIN 0.0100000	Returns the minimum slew rate in mbar/second
:SOUR:PRES:SLEW:MIN?	:SOUR:PRES:SLEW:MIN 0.6000000	The same minimum slew rate if user has selected slew rate unit as mbar/minute

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:SLEW:MODE

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:SLEW:MODE

Command Syntax

:SOURce[x][:PRESsure]:SLEW:MODE MAXimum|LINear

where x = is the module number (default is 1)

Parameter: Character - Enumerated (MAXimum, LINear): Maximum rate or user selected linear rate

Function: Select the rate the controller should use to achieve set-point

Query Syntax

:SOURce[x][:PRESsure]:SLEW:MODE?

where x = is the module number (default is 1)

Function: Query rate mode.

Response: Enum: MAX for maximum rate, LIN for user defined rate

Description

The controller can operate in two modes - maximum and linear. In maximum rate the controller tries to achieve set-point as quickly as possible. In linear mode the controller achieves the set-point at a user selected rate.

Example

Tx	Rx	Remarks
:SOUR:PRES:SLEW:MODE MAX		Set the slew rate mode as Maximum
:SOUR:PRES:SLEW:MODE?	:SOUR:PRES:SLEW:MODE MAX	Query returns the slew rate mode as Maximum
:SOUR:PRES:SLEW:MODE LIN		Set the slew rate mode as linear
:SOUR:PRES:SLEW:MODE?	:SOUR:PRES:SLEW:MODE LIN	Query returns the slew rate mode as Linear

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:SLEW:OVER:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:SLEW:OVER

Command Syntax

`:SOURce[x][:PRESsure]:SLEW:OVERshoot[:STATe] 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: 0 - Overshoot not allowed, 1 - Overshoot allowed

Function: Selects pressure overshoot to `allowed' or `not allowed'

Query Syntax

`:SOURce[x][:PRESsure]:SLEW:OVERshoot[:STATe]?`

where x = is the module number (default is 1)

Function: Query overshoot state

Response: Boolean: 0 - Overshoot not allowed   1 - Overshoot allowed

Description

The controller can reach the set-point in one of two modes: Overshoot `not allowed', the controller changes the pressure to near the set-point. The rate of pressure change slows when approaching the set-point to avoid overshoot. Overshoot `allowed', the controller achieves set-point as fast as possible and, when approaching the set-point, may overshoot or undershoot.

Example

Tx	Rx	Remarks
:SOUR:PRES:SLEW:OVER?	:SOUR:PRES:SLEW:OVER:STAT 0	Read the overshoot state as "overshoot not allowed"
:SOUR:PRES:SLEW:OVER 1	None	Set the overshoot state as "overshoot allowed"
:SOUR:PRES:SLEW:OVER?	:SOUR:PRES:SLEW:OVER:STAT 1	Read the overshoot state as "overshoot allowed"

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:SLEW:UNIT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:SLEW:UNIT

Command Syntax

`:SOURce[x][:PRESsure]:SLEW:UNIT <value>`

where x = is the module number (default is 1)

Parameter: Integer: slew unit.

Function: Sets the slew unit

Query Syntax

`:SOURce[x][:PRESsure]:SLEW:UNIT?`

where x = is the module number (default is 1)

Function: Queries the slew unit

Response: Integer - 0 (for Seconds) or 1 (for Minute)

Description

This command will set or get the slew unit

Example

Tx	Rx	Remarks
:SOUR:PRES:SLEW:UNIT?	:SOUR:PRES:SLEW:UNIT 0	Return the slew unit as Second
:SOUR:PRES:SLEW:UNIT 1		Set the slew unit in minute
:SOUR:PRES:SLEW:UNIT?	:SOUR:PRES:SLEW:UNIT 1	Return the slew unit as Minutes

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:SPOI:LIM:LOW

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:SPOI:LIM:LOW

Command Syntax

`:SOURce[x][:PRESsure]:SPOInt:LIMit:LOWer <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Setpoint lower limit value

Function: Set the desired setpoint lower limit

Query Syntax

`:SOURce[x][:PRESsure]:SPOInt:LIMit:LOWer?`

where x = is the module number (default is 1)

Function: Queries the desired setpoint lower limit

Response: Double: Setpoint lower limit value

Description

The command set or get the desired setpoint lower limit

Example

Tx	Rx	Remarks
:SOUR:PRES:SPOI:LIM:LOW?	:SOUR:PRES:SPOI:LIM:LOW 1000	Return the setpoint lower limit
:SOUR:PRES:SPOI:LIM:LOW 500		Set the setpoint lower limit as 500
:SOUR:PRES:SPOI:LIM:LOW?	:SOUR:PRES:SPOI:LIM:LOW 500	Return the setpoint lower limit as 500
:SOUR:PRES:SPOI:LIM:LOW MAX		Set the setpoint lower limit to maximum value
:SOUR:PRES:SPOI:LIM:LOW MIN		Set the setpoint lower limit to minimum value
:SOUR:PRES:SPOI:LIM:LOW? MIN	:SOUR:PRES:SPOI:LIM:LOW -1100.0000000	Return the minimum setpoint lower limit value
:SOUR:PRES:SPOI:LIM:LOW? MAX	:SOUR:PRES:SPOI:LIM:LOW 21000.0000000	Return the maximum value

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-221, "Settings conflict"	Lower limit must be less than upper limit
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:SPOI:LIM:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:SPOI:LIM:STAT

Command Syntax

`:SOURce[x][:PRESsure]:SPOInt:LIMit:STATe 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: set point limit state (ON or OFF)

Function: Set setpoint limit state

Query Syntax

`:SOURce[x][:PRESsure]:SPOInt:LIMit:STATe?`

where x = is the module number (default is 1)

Function: Queries the setpoint limit state

Response: Boolean: 0 - Disabled, 1 - Enabled

Description

This command enables/disables setpoint limit state

Example

Tx	Rx	Remarks
:SOUR:PRES:SPOI:LIM:STAT?	:SOUR:PRES:SPOI:LIM:STAT 0	Return the setpoint limit state as disabled
:SOUR:PRES:SPOI:LIM:STAT 1		Set the setpoint limit state as enabled
:SOUR:PRES:SPOI:LIM:STAT?	:SOUR:PRES:SPOI:LIM:STAT 1	Return the setpoint limit state as enabled

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:PRES:SPOI:LIM:UPP

Applicability   PACE5000 E, PACE6000 E

Short Form: :SOUR:SPOI:LIM:UPP

Command Syntax

:SOURce[x][:PRESsure]:SPOInt:LIMit:UPPer <value>

where x = is the module number (default is 1)

Parameter: Numerical Real: set point upper limit value within the full-scale range

Function: Set the desired setpoint upper limit

Query Syntax

:SOURce[x][:PRESsure]:SPOInt:LIMit:UPPer?

where x = is the module number (default is 1)

Function: Queries the desired setpoint upper limit

Response: Double: Setpoint upper limit value

Description

This command gets or sets desired setpoint upper limit.

Example

Tx	Rx	Remarks
:SOUR:PRES:SPOI:LIM:UPP?	:SOUR:PRES:SPOI:LIM:UPP 1000	Return the setpoint upper limit
:SOUR:PRES:SPOI:LIM:UPP 2000		Set the setpoint upper limit as 2000
:SOUR:PRES:SPOI:LIM:UPP?	:SOUR:PRES:SPOI:LIM:UPP 2000	Return the setpoint upper limit as 2000
:SOUR:PRES:SPOI:LIM:UPP MAX		Set the setpoint upper limit to maximum value
:SOUR:PRES:SPOI:LIM:UPP MIN		Set the setpoint upper limit to minimum value

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-221, "Settings conflict"	Upper limit must be greater than lower limit
-241, "Hardware missing"	Failed to find the hardware

:SOUR:SPE:GRO

Applicability   PACE6000 E

Short Form: :SOUR:SPE:GRO

Command Syntax

`:SOURce[x]:SPEed:GROund <state>`

where x = is the module number (default is 1)

Parameter: Integer: Airspeed go to ground process status : 0 - Abort ,1 -Start Go to ground

Function: Set the Go to ground status for airspeed CM

Query Syntax

`:SOURce[x]:SPEed:GROund?`

where x = is the module number (default is 1)

Function: Queries the Go to ground status for airspeed CM

Response: Integer: 0 - Go to ground OK/ Go to ground not in progress.

1 - Go to ground in progress.

2 - Go to ground timed out.

3 - Go to ground finished with trapped pressure.

4 - Go to ground Aborted.

Description

Command to check Go to ground status for Airspeed CM, if the specified CM is in Airspeed mode, command returns go to ground status otherwise error code is returned.

Example

Tx	Rx	Remarks
:SOUR:SPE:GRO 1		Started the go to ground.
:SOUR:SPE:GRO?	:SOUR:SPE:GRO 1	Immediate query returns the process is inprogress
:SOUR:SPE:GRO?	:SOUR:SPE:GRO 0	Query returns the process is completed

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-222, \"Data out of range\"	Input validation failed
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:SPE:INL

Applicability   PACE6000 E

Short Form: :SOUR:SPE:INL

Command Syntax

`:SOURce[x]:SPEed:INLimits <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Air speed inlimit band value within the fullscale

Function: Set the in limit band in percentage full scale for airspeed mode.

Query Syntax

`:SOURce[x]:SPEed:INLimits?`

where x = is the module number (default is 1)

Function: Ask for the in limit band in percentage full scale for airspeed mode

Response: Double: In-limit band in percentage full scale for airspeed mode

Description

Command to set and query in limit band in percentage Full scale for Airspeed mode.

Note: If the instrument is not in aeronautical mode it records an error: -221. Settings conflict.

Example

Tx	Rx	Remarks
:SOUR:SPE:INL?	:SOUR:SPE:INL 0	Query returns the inlimit band in percentage full scale for airspeed mode.
:SOUR:SPE:INL? min	:SOUR:SPE:INL 0.1000000	Query returns the minimum value.
:SOUR:SPE:INL? max	:SOUR:SPE:INL 20.0000000	Query returns the maximum value.
:SOUR:SPE:INL 10		Set to 10
:SOUR:SPE:INL?	:SOUR:SPE:INL 10.0000000	Query returns the current value.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:SPE:INL:TIME

CAUTION: For more precise inlimit timer set/get operation please refer to SCPI command :SOUR:SPE:INL:TIME:PREC. Minimum setting value returned by the :SOUR:SPE:INL:TIME will be 1, even if the value has been set to a lower resolution via the precision SCPI command or from the UI. Values returned by :SOUR:SPE:INL:TIME will be truncated down to integer. Inlimit Timer Range - Lower limit: 1 Upper limit: 60.

Applicability   PACE6000 E

Short Form: :SOUR:SPE:INL:TIME

Command Syntax

`:SOURce[x]:SPEed:INLimits:TIME <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: air speed inlimit time value within the fullscale range

Function: Set the time that the airspeed value has to be within limits.

Query Syntax

`:SOURce[x]:SPEed:INLimits:TIME?`

where x = is the module number (default is 1)

Function: Queries the time that the airspeed value has to be within limits.

Response: Integer: Number representing in-limits time in seconds

Description

Set and queries the time that the airspeed value has to be within limits.

Example

Tx	Rx	Remarks
:SOUR:SPE:INL:TIME?	:SOUR:SPE:INL:TIME 1	Query will return the current inlimit time
:SOUR:SPE:INL:TIME 60		Set the inlimit time to 60.
:SOUR:SPE:INL:TIME?	:SOUR:SPE:INL:TIME 60	Query will returns the current inlimit time

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:SPE:INL:TIME:PREC

Applicability   PACE6000 E

Short Form: :SOUR:SPE:INL:TIME:PREC

Command Syntax

`:SOURce[x]:SPEed:INLimits:TIME:PRECision <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: Higher precision in-limit time value in seconds

Function: Sets a higher precision time that the Speed has to be within limits before generating a service request

Query Syntax

`:SOURce[x]:SPEed:INLimits:TIME:PRECision?`

where x = is the module number (default is 1)

Function: The SCPI command is used to get higher precision inlimits time value

Response: Double: Number representing higher precision of in-limits time value in seconds

Description

The SCPI command is used to get/set higher precision in-limits time value compared to legacy SCPI command :SOUR:SPE:INL:TIME

Example

Tx	Rx	Remarks
:SOUR:SPE:INL:TIME:PREC?	:SOUR:SPE:INL:TIME:PREC 0.1	Default in-limit time is 0.1
:SOUR:SPE:INL:TIME:PREC 0.9	None	Can be set to 0.9 by issuing command
:SOUR:SPE:INL:TIME:PREC?	:SOUR:SPE:INL:TIME:PREC 0.9	None
:SOUR:SPE:INL:TIME:PREC 5.9	None	Can be set to 5.9 by issuing command
:SOUR:SPE:INL:TIME:PREC?	:SOUR:SPE:INL:TIME:PREC 5.9	None
:SOUR:SPE:INL:TIME:PREC min		Set to minimum in-limits timer value.
:SOUR:SPE:INL:TIME:PREC max		Set to maximum in-limit timer value

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:SPE:LEV:IMM:AMPL

Applicability   PACE6000 E

Short Form: :SOUR:SPE

Command Syntax

`:SOURce[x]:SPEed[:LEVel][:IMMediate][:AMPLitude] <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: air speed set point value

Function: Sets the airspeed set-point

Query Syntax

`:SOURce[x]:SPEed[:LEVel][:IMMediate][:AMPLitude]?`

where x = is the module number (default is 1)

Function: Programmable set-point value

Response: Decimal number representing airspeed set-point in current units.

Description

This command sets the airspeed set-point. This query gets the decimal number representing airspeed set-point in current units.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict and the range also in the speed mode (:INST:TASK:AERO:RANG?)

Example

Tx	Rx	Remarks
:SOUR:SPE:LEV:IMM:AMPL?	:SOUR:SPE:LEV:IMM:AMPL 0	Returns the current airspeed setpoint in current units
:SOUR:SPE:LEV:IMM:AMPL 100		Set the airspeed setpoint to 100
:SOUR:SPE:LEV:IMM:AMPL?	:SOUR:SPE:LEV:IMM:AMPL 100	Return the current airspeed as 100

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-221, "Settings conflict"	Invalid mode for airspeed control
-241, "Hardware missing"	Failed to find the hardware

:SOUR:SPE:LEV:IMM:AMPL:MAX

Applicability   PACE6000 E

Short Form: :SOUR:SPE:MAX

Query Syntax

`:SOURce[x]:SPEed[:LEVel][:IMMediate][:AMPLitude]:MAXimum?`

where x = is the module number (default is 1)

Function: The query command to get the aeronautical setpoint upper limit in air speed mode

Response: Double: Aeronautical setpoint upper limit in air speed mode

Description

This query gets the aeronautical setpoint upper limit in air speed mode

Example

Tx	Rx	Remarks
:SOUR2:SPE:LEV:IMM:AMPL:MAX?	:SOUR2:SPE:LEV:IMM:AMPL:MAX 650.0000000	Returns aeronautical setpoint upper limit in air speed mode

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:SPE:LEV:IMM:AMPL:MIN

Applicability   PACE6000 E

Short Form: :SOUR:SPE:MIN

Query Syntax

`:SOURce[x]:SPEed[:LEVel][:IMMediate][:AMPLitude]:MINimum?`

where x = is the module number (default is 1)

Function: The query command to get the aeronautical setpoint lower limit in air speed mode

Response: Returns aeronautical setpoint lower limit in air speed mode

Description

This query gets the aeronautical setpoint lower limit in air speed mode

Example

Tx	Rx	Remarks
:SOUR2:SPE:LEV:IMM:AMPL:MIN?	:SOUR2:SPE:LEV:IMM:AMPL:MIN 0.0000000	Returns aeronautical setpoint lower limit in air speed mode

Possible Errors

Error	Description
-114, \"Header suffix out of range\"	Invalid control module ID
-241, \"Hardware missing\"	Failed to find the hardware
-294, \"Incompatible type\"	Operation not allowed in this mode

:SOUR:SPE:LEV:IMM:AMPL:SLEW

Applicability   PACE6000 E

Short Form: :SOUR:SPE:SLEW

Command Syntax

`:SOURce[x]:SPEed[:LEVel][:IMMediate][:AMPLitude]:SLEW <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: slew rate in current pressure units per second.

Function: Sets the rate set-point for airspeed.

Query Syntax

`:SOURce[x]:SPEed[:LEVel][:IMMediate][:AMPLitude]:SLEW?`

where x = is the module number (default is 1)

Function: Queries the rate set-point for airspeed

Response: Decimal number representing the rate set-point airspeed in currently selected units of speed per second

Description

This command sets the airspeed rate set-point. The query gets the rate set-point for airspeed.

Note: If the instrument is not in aeronautical mode it returns an error: -221. Settings conflict

Example

Tx	Rx	Remarks
:SOUR:SPE:LEV:IMM:AMPL:SLEW?	:SOUR:SPE:LEV:IMM:AMPL:SLEW 0	Query returns the current slewrate
:SOUR:SPE:LEV:IMM:AMPL:SLEW 1		Set the slewrate to 1
:SOUR:SPE:LEV:IMM:AMPL:SLEW?	:SOUR:SPE:LEV:IMM:AMPL:SLEW 1	Query returns the current slew rate

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-114, "Header suffix out of range"	Invalid control module ID
-291, "Out of memory"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:SPE:LEV:IMM:AMPL:SLEW:MAX

Applicability   PACE6000 E

Short Form: :SOUR:SPE:SLEW:MAX

Query Syntax

`:SOURce[x]:SPEed[:LEVel][:IMMediate][:AMPLitude]:SLEW:MAXim um?`

where x = is the module number (default is 1)

Function: The query command to get the rate of calibrated air speed upper limit in air speed mode

Response: Returns rate of calibrated air speed upper limit in air speed mode

Description

This query gets the rate of calibrated air speed upper limit in air speed mode

Example

Tx	Rx	Remarks
:SOUR2:SPE:LEV:IMM:AMPL:S LEW:MAX?	:SOUR2:SPE:LEV:IMM:AMPL:S LEW:MAX 600.0000000	Returns rate of calibrated air speed upper limit in air speed mode

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:SPE:LEV:IMM:AMPL:SLEW:MIN

Applicability   PACE6000 E

Short Form: :SOUR:SPE:SLEW:MIN

Query Syntax

`:SOURce[x]:SPEed[:LEVel][:IMMediate][:AMPLitude]:SLEW:MINimum?`

where x = is the module number (default is 1)

Function: The query command to get the rate of calibrated air speed lower limit in air speed mode

Response: Returns rate of calibrated air speed lower limit in air speed mode

Description

This query gets the rate of calibrated air speed lower limit in air speed mode

Example

Tx	Rx	Remarks
:SOUR2:SPE:LEV:IMM:AMPL:SLEW:MIN?	:SOUR2:SPE:LEV:IMM:AMPL:SLEW:MIN 2.0000000	Returns rate of calibrated air speed lower limit in air speed mode

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Failed to find the hardware

:SOUR:SPE:RANG

Applicability   PACE6000 E

Short Form: :SOUR:SPE:RANG

Command Syntax

`:SOURce:SPEed:RANGe <info>`

Parameter: String: Range information

Function: Set the range for airspeed mode

Query Syntax

`:SOURce:SPEed:RANGe?`

Function: Queries the range for airspeed mode

Response: A string (number), representing the selected airspeed pressure range in pressure units.

Description

set and query the range for airspeed mode

Example

Tx	Rx	Remarks
:SOUR:SPE:RANG?	:SOUR:SPE:RANG "CM2 650kn 20.00barg"	Query the range for Airspeed mode

Possible Errors

Error	Description
-222, "Data out of range"	Input validation failed
-291, "Out of memory"	Internal database error

:SOUR:SPE:RANG:ALL

Applicability   PACE6000 E

Short Form: :SOUR:SPE:RANG:ALL

Query Syntax

:SOURce:SPEed:RANGe:ALL?

Function: Ask for all the ranges available for airspeed mode.

Response: String representing all the range separated in airspeed mode.

Description

Query all the ranges available for airspeed mode.

Example

Tx	Rx	Remarks
:SOUR:SPE:RANG:ALL?	:SOUR:SPE:RANG:ALL "CM1 650kn 20.00barg,CM2 650kn 20.00barg"	Query all the ranges available for Airspeed mode.

Possible Errors

Error	Description
-241, \"Hardware missing\"	Failed to find the hardware

:SOUR:SPE:SPOI:LIM:LOW

Applicability   PACE6000 E

Short Form: :SOUR:SPE:SPOI:LIM:LOW

Command Syntax

:SOURce[x]:SPEed:SPOInt:LIMit:LOWer <value>

where x = is the module number (default is 1)

Parameter: Numerical Real: Air speed setpoint lower limit within the fullscale

Function: Set user defined set-point lower limit for Airspeed mode.

Query Syntax

:SOURce[x]:SPEed:SPOInt:LIMit:LOWer?

where x = is the module number (default is 1)

Function: Ask for user defined set-point lower limit for Airspeed mode.

Response: Double: User defined set-point lower limit for Airspeed mode

Description

Command to set or query user defined set-point lower limit for Airspeed mode.

Example

Tx	Rx	Remarks
:SOUR:SPE:SPOI:LIM:LOW?	:SOUR:SPE:SPOI:LIM:LOW 200.0000000	
:SOUR:SPE:SPOI:LIM:LOW max		Set to maximum value.
:SOUR:SPE:SPOI:LIM:LOW min		Setting to minimum value.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware
-221, \"Settings conflict\"	Lower limit must be less than upper limit

:SOUR:SPE:SPOI:LIM:STAT

Applicability   PACE6000 E

Short Form: :SOUR:SPE:SPOI:LIM:STAT

Command Syntax

`:SOURce[x]:SPEed:SPOInt:LIMit:STATe 0|1`

where x = is the module number (default is 1)

Parameter: Boolean: air speed set point inlimit state (ON or OFF)

Function: Set user defined set-point limit state for Airspeed mode.

Query Syntax

`:SOURce[x]:SPEed:SPOInt:LIMit:STATe?`

where x = is the module number (default is 1)

Function: Ask for user defined set-point limit state for Airspeed mode.

Response: Boolean: 1 - ON and 0 - OFF

Description

Command to set or query user defined set-point limit state for Airspeed mode.

Example

Tx	Rx	Remarks
:SOUR:SPE:SPOI:LIM:STAT?	:SOUR:SPE:SPOI:LIM:STAT 0	Query returns the current state OFF.
:SOUR:SPE:SPOI:LIM:STAT 1		Set the state to ON
:SOUR:SPE:SPOI:LIM:STAT?	:SOUR:SPE:SPOI:LIM:STAT 1	Returns the current state ON.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware

:SOUR:SPE:SPOI:LIM:UPP

Applicability   PACE6000 E

Short Form: :SOUR:SPE:SPOI:LIM:UPP

Command Syntax

`:SOURce[x]:SPEed:SPOInt:LIMit:UPPer <value>`

where x = is the module number (default is 1)

Parameter: Numerical Real: air speed set point upper limit value

Function: Set user defined set-point upper limit for Airspeed mode.

Query Syntax

`:SOURce[x]:SPEed:SPOInt:LIMit:UPPer?`

where x = is the module number (default is 1)

Function: Queries the user defined set-point upper limit for Airspeed mode.

Response: Double: User defined set-point upper limit for Airspeed mode

Description

Command to set or query user defined set-point upper limit for Airspeed mode.

Example

Tx	Rx	Remarks
:SOUR:SPE:SPOI:LIM:UPP?	:SOUR:SPE:SPOI:LIM:UPP 200.0000000	
:SOUR:SPE:SPOI:LIM:UPP max		Set to maximum value.
:SOUR:SPE:SPOI:LIM:UPP min		Setting to minimum value.

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-222, "Data out of range"	Input validation failed
-311, "Memory error"	Internal database error
-241, "Hardware missing"	Failed to find the hardware
-221, \"Settings conflict\"	Upper limit must be greater than lower limit

STATus

Description

The STATus subsystem supports the OPERation status register as defined in the SCPI protocol.

:STAT:OPER:COND

Applicability   PACE5000 E, PACE6000 E

Short Form: :STAT:OPER:COND

Query Syntax

:STATus:OPERation:CONDition?

Function: Query condition register

Response: Contents of condition register

Description

Returns the contents of the 16 bit condition register, see section 3 Status System

Example

Tx	Rx	Remarks
:STAT:OPER:COND?	:STAT:OPER:COND 511	

:STAT:OPER:ENAB

Applicability   PACE5000 E, PACE6000 E

Short Form: :STAT:OPER:ENAB

Command Syntax

`:STATus:OPERation:ENABle <value>`

Parameter: Integer: Operation enable register value.

Function: Controls the status operation enable register.

Query Syntax

`:STATus:OPERation:ENABle?`

Function: Query enable register

Response: Integer: 16 bit value of enable register.

Description

Controls the bits that pass through the section 3 status system, see section 3 status system

Example

Tx	Rx	Remarks
:STAT:OPER:ENAB 511		
:STAT:OPER:ENAB?	:STAT:OPER:ENAB 511	Query returns the status of operation enable register

:STAT:OPER:EVEN

Applicability   PACE5000 E, PACE6000 E

Short Form: :STAT:OPER

Query Syntax

`:STATus:OPERation[:EVENt]?`

Function: Query event register

Response: 16 bit value of event register.

Description

Reads contents of event register, see Section 3 Status System.

Example

Tx	Rx	Remarks
:STAT:OPER?	:STAT:OPER:EVEN 511	

:STAT:OPER:PRES:COND

Applicability   PACE5000 E, PACE6000 E

Short Form: :STAT:OPER:PRES:COND

Query Syntax

:STATus:OPERation:PRESsure:CONDition?

Function: Reads the contents of the pressure condition register.

Response: Contents of pressure condition register.

Description

Returns the contents of the 16 bit pressure condition register, see section on section 3 status system

Example

Tx	Rx	Remarks
:STAT:OPER:PRES:COND?	0	Returns the current pressure condition register value.

:STAT:OPER:PRES:ENAB

Applicability   PACE5000 E, PACE6000 E

Short Form: :STAT:OPER:PRES:ENAB

Command Syntax

`:STATus:OPERation:PRESsure:ENABle <value>`

Parameter: Numerical Integer: Operation enable register value.

Function: Controls the pressure status operation enable register.

Query Syntax

`:STATus:OPERation:PRESsure:ENABle?`

Function: Query enable register.

Response: 16 bit value of pressure enable register.

Description

Controls the bits that pass through the section 3 status system.

Example

Tx	Rx	Remarks
:STAT:OPER:PRES:ENAB?	:STAT:OPER:PRES:ENAB 0	Returns the current value
:STAT:OPER:PRES:ENAB 255		Set register value to 255
:STAT:OPER:PRES:ENAB?	:STAT:OPER:PRES:ENAB 255	Query gets the current value

:STAT:OPER:PRES:EVEN

Applicability   PACE5000 E, PACE6000 E

Short Form: :STAT:OPER:PRES

Query Syntax

`:STATus:OPERation:PRESsure[:EVENt]?`

Function: Reads contents of pressure event register

Response: 16 bit value of pressure event register.

Description

Reads contents of pressure event register, see section on section 3 status system

Example

Tx	Rx	Remarks
*SRE 255		To enable every bit of SRE register
InvalidCMD		Deliberately type a wrong command
*STB?	*STB 68	Error Message set EAV and SERIAL POLL set MSS, 22+26 = 68
*SRE 128		Enable SRE bit 7
:STAT:OPER:ENAB 1024		Enable Operation Register, bit 10
:STAT:OPER:PRES:ENAB 32767		Enable Pressure register all 16 bit
:STAT:OPER:PRES:EVEN?	:STAT:OPER:PRES:EVEN 0	No any even yet
:SENS:PRES?	:SENS:PRES 1099.9993896	the controller pressure is 1100 mbar
:OUTP 1		Switch controller on
:SOUR:PRES 2000		To generate an in-limit event
	:SRQ 192	Receive an SRQ automatically
:STAT:OPER:PRES:EVEN?	:STAT:OPER:PRES:EVEN 4	In-limit event happened, see Table 3-2
:STAT:OPER:PRES:EVEN?	:STAT:OPER:PRES:EVEN 0	Ask again will clear the event register

:STAT:QUES:COND

Applicability   PACE5000 E, PACE6000 E

Short Form: :STAT:QUES:COND

Query Syntax

:STATus:QUEStionable:CONDition?

Function: Query questionable data condition register

Response: 16 bit value of questionable data condition register

Description

Returns the contents of the 16 bit questionable data condition register, see section 3 status system

Example

Tx	Rx	Remarks
:STAT:QUES:COND?	0	Returns the current questionable data condition register value

:STAT:QUES:ENAB

Applicability PACE5000 E, PACE6000 E

Short Form: :STAT:QUES:ENAB

Command Syntax

`:STATus:QUEStionable:ENABle <value>`

Parameter: Numerical Integer: Condition enable register value.

Function: Controls the questionable data condition enable register.

Query Syntax

`:STATus:QUEStionable:ENABle?`

Function: Query questionable data condition enable register.

Response: 16 bit value of enable register.

Description

Controls the bits that pass through the questionable data condition reporting, see section 3 status system.

Example

Tx	Rx	Remarks
:STAT:QUES:ENAB?	0	Returns the current value
:STAT:QUES:ENAB 255		Set the enable register value to 255
:STAT:QUES:ENAB?	255	Returns the current enable register value

:STAT:QUES:EVEN

Applicability   PACE5000 E, PACE6000 E

Short Form: :STAT:QUES

Query Syntax

`:STATus:QUEStionable[:EVENt]?`

Function: To get questionable register value

Response: 16 bit value of questionable data condition register.

Description

Reads contents of questionable data condition register, see section 3 status system.

Example

Tx	Rx	Remarks
:STAT:QUES:EVEN?	0	Returns the current value.

SYSTem

Description

The SYSTem subsystem consists of general-purpose commands.

:SYST:AREA

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:AREA

Command Syntax

:SYSTem:AREA EURope|USA|JAPan|MALaysia|ASIA|ROW

Parameter: Character - Enumerated (EURope, USA, JAPan, MALaysia, ASIA, ROW): Area of the world.

Function: Sets a group of parameters for an area of the world

Query Syntax

:SYSTem:AREA?

Function: Queries area setting

Response: String - Returns string representing an area of the world

Description

This command instructs the instrument to enable a group of default settings for an area of the world

AREA	Remarks
ASIA	Asia
EURope	Europe
JAPan	Japan
ROW	Rest of the World
USA	United States of America
MALaysia	Malaysia

Example

Tx	Rx	Remarks
:SYST:AREA?	:SYST:AREA EUR	Area of use is set to Europe.
:SYST:AREA USA	None	Sets the area of use to the USA.
:SYST:AREA?	:SYST:AREA USA	Area of use is set to the USA.
:SYST:AREA JAPAN	None	Sets the area of use to Japan
:SYST:AREA?	:SYST:AREA JAP	Area of use is set to Japan
:SYST:AREA ASIA	None	Sets the area of use to Asia
:SYST:AREA?	:SYST:AREA ASIA	Area of use is set to ASIA
:SYST:AREA ROW	None	Sets the area of use to the rest of the World
:SYST:AREA?	:SYST:AREA ROW	Area of use is set to the rest of the World.

Possible Errors

Error	Description
-222, "Data out of range"	Status Area of use validation failed
-311, "Memory error"	Status Area of use set operation failed

:SYST:COMM:EBOA:INF

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:EBOA:INF

Query Syntax

`:SYSTem:COMMunicate:EBOArd:INFormation?`

Function: Ask the expansion information

Response: String - Type and Revision

Description

Query command returns the expansion information.

Example

Tx	Rx	Remarks
:SYST:COMM:EBOA:INF?	:SYST:COMM:EBOA:INF "GPIB,1A"	Returns the expansion board information

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error
-300, "Device specific error"	No board info available

:SYST:COMM:GPIB:SELF:ADDR

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:GPIB:ADDR

Command Syntax

`:SYSTem:COMMunicate:GPIB[:SELF]:ADDRess <address>`

Parameter: Numerical Integer: GPIB primary address value.

Function: Sets the instrument's GPIB address.

Query Syntax

`:SYSTem:COMMunicate:GPIB[:SELF]:ADDRess?`

Function: Queries GPIB address

Response: Integer - Returns number representing GPIB address.

Description

This command instructs the instrument to set a GPIB address. The query command gets the current address.

Example

Tx	Rx	Remarks
:SYST:COMM:GPIB:SELF:ADDR?	:SYST:COMM:GPIB:SELF:ADDR 16	Returns the current GPIB address
:SYST:COMM:GPIB:SELF:ADDR 1		Set the address to 1
:SYST:COMM:GPIB:SELF:ADDR?	:SYST:COMM:GPIB:SELF:ADDR 1	Return the current address as 1

Possible Errors

Error	Description
-311, "Memory error"	Failed to get address from database

:SYST:COMM:SER:BAUD

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:SER:BAUD

Command Syntax

`:SYSTem:COMMunicate:SERial:BAUD`
`2400|4800|9600|19200|38400|57600|115200`

Parameter: Character - Enumerated (2400, 4800, 9600, 19200, 38400, 57600, 115200): serial board rate.

Function: Sets the baud rate

Query Syntax

`:SYSTem:COMMunicate:SERial:BAUD?`

Function: Queries current baud setting

Response: Character - Enumerated: 2400,4800,9600,19200,38400,57600,115200

Description

This command instructs the instrument to set the baud rate. The command query returns the current baud rate set in the instrument.

Example

Tx	Rx	Remarks
:SYST:COMM:SER:BAUD?	:SYST:COMM:SER:BAUD 115200	Query returns the current baud rate
:SYST:COMM:SER:BAUD 9600		Set the baud rate to 9600.
:SYST:COMM:SER:BAUD?	:SYST:COMM:SER:BAUD 9600	Query returns the current baud rate.

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error

:SYST:COMM:SER:CONT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:SER:CONT

Command Syntax

:SYSTem:COMMunicate:SERial:CONTrol NONE|XONXoff|RTSCts

Parameter: Character - Enumerated (NONE, XONXoff, RTSCts): FlowControl status

Function: Sets the serial communication handshaking

Query Syntax

:SYSTem:COMMunicate:SERial:CONTrol?

Function: Queries serial communication handshaking.

Response: Returns an integer of 0 : NONE, 1 : XON/XOFF , 2 : RTS/CTS

Description

Selects serial communications interface handshaking. The command query requests the current serial communication handshaking.

Example

Tx	Rx	Remarks
:SYST:COMM:SER:CONT?	:SYST:COMM:SER:CONT 0	Query for the current serial communication handshaking.
:SYST:COMM:SER:CONT 2		Set to RTS/CTS.
:SYST:COMM:SER:CONT?	:SYST:COMM:SER:CONT 2	Query returns the current serial configuration handshaking as RTS/CTS.

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error

:SYST:COMM:SER:CONT:RTS

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:SER:CONT:RTS

Command Syntax

`:SYSTem:COMMunicate:SERial:CONTrol:RTS 0|1`

Parameter: Boolean: 0 - Disable, 1 - Enable.

Function: Sets the serial communication handshaking RTS state

Query Syntax

`:SYSTem:COMMunicate:SERial:CONTrol:RTS?`

Function: Ask for the serial communication handshaking RTS state

Response: Boolean: 0 - Disable, 1 - Enable.

Description

Set or get the serial communications interface handshaking RTS state.

Example

Tx	Rx	Remarks
:SYST:COMM:SER:CONT:RTS?	:SYST:COMM:SER:CONT:RTS 0	Query returns the current state
:SYST:COMM:SER:CONT:RTS 1		Set the state to 1.
:SYST:COMM:SER:CONT:RTS?	:SYST:COMM:SER:CONT:RTS 1	Query for the current state.

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error

:SYST:COMM:SER:CONT:XONX

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:SER:CONT:XONX

Command Syntax

`:SYSTem:COMMunicate:SERial:CONTrol:XONXoff 0|1`

Parameter: Boolean: 0 - Disable, 1 - Enable

Function: Sets the serial communication handshaking XONXOFF state

Query Syntax

`:SYSTem:COMMunicate:SERial:CONTrol:XONXoff?`

Function: Queries serial communication handshaking XONXOFF state.

Response: Boolean: 0 - Disable, 1 - Enable.

Description

Set or get the serial communications interface handshaking XONXOFF state.

Example

Tx	Rx	Remarks
:SYST:COMM:SER:CONT:XONX?	:SYST:COMM:SER:CONT:XONX 0	Query returns the current state
:SYST:COMM:SER:CONT:XONX 1		Set the state to 1.
:SYST:COMM:SER:CONT:XONX?	:SYST:COMM:SER:CONT:XONX 1	Query for the current state.

Possible Errors

Error	Description
-310, "System error"	Failed to get/set the communication status
-311, "Memory error"	Internal Database error

:SYST:COMM:SER:STOP

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:SER:STOP

Command Syntax

:SYSTem:COMMunicate:SERial:STOPbit SB1|SB2

Parameter: Character - Enumerated (SB1, SB2): Serial stop bit

Function: Sets serial communication stop bit

Query Syntax

:SYSTem:COMMunicate:SERial:STOPbit?

Function: Queries the serial communication stop bit

Response: Character - Enumerated: SB1 - for stop bit 1 , SB2 - for stop bit 2

Description

The command the sets serial communication stop bit and query gets the current stop bit value.

Example

Tx	Rx	Remarks
:SYST:COMM:SER:STOP?	:SYST:COMM:SER:STOP SB1	Query returns the current stop bit value
:SYST:COMM:SER:STOP SB2		Set the stop bit to 2
:SYST:COMM:SER:STOP?	:SYST:COMM:SER:STOP SB2	Query returns the current stop bit

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error

:SYST:COMM:SER:TERM

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:SER:TERM

Command Syntax

`:SYSTem:COMMunicate:SERial:TERMination CR|LF|CRLF`

Parameter: Character - Enumerated (CR, LF, CRLF): Serial communication termination character

Function: Sets serial communication termination character

Query Syntax

`:SYSTem:COMMunicate:SERial:TERMination?`

Function: Queries the serial communication termination character

Response: Character - Enumerated: CR, LF, CRLF

Description

The command to set/get serial communication termination character.

Example

Tx	Rx	Remarks
:SYST:COMM:SER:TERM?	:SYST:COMM:SER:TERM CR	Query returns the current termination character.
:SYST:COMM:SER:TERM LF		Set the termination character as LF
:SYST:COMM:SER:TERM?	:SYST:COMM:SER:TERM LF	Query returns the current termination character.

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error

:SYST:COMM:SER:TYPE:PAR

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:SER:PAR

Command Syntax

`:SYSTem:COMMunicate:SERial[:TYPE]:PARity NONE|EVEN|ODD`

Parameter: Character - Enumerated (NONE, EVEN, ODD): serial parity bit

Function: Sets parity

Query Syntax

`:SYSTem:COMMunicate:SERial[:TYPE]:PARity?`

Function: Queries current parity setting.

Response: Character - Enumerated: NONE,EVEN,ODD

Description

This command instructs the instrument to set serial communication parity. The command query gets the current parity setting.

Example

Tx	Rx	Remarks
:SYST:COMM:SER:TYPE:PAR?	:SYST:COMM:SER:TYPE:PAR NONE	Query returns the current parity.
:SYST:COMM:SER:TYPE:PAR ODD		Set the parity to odd.
:SYST:COMM:SER:TYPE:PAR?	:SYST:COMM:SER:TYPE:PAR ODD	Query returns the parity as ODD.

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error

:SYST:COMM:USB

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:USB

Command Syntax

`:SYSTem:COMMunicate:USB MSD|VCP|TMC`

Parameter: Character - Enumerated (MSD, VCP, TMC): USB device class types

Function: Switches the communication mode.

Query Syntax

`:SYSTem:COMMunicate:USB?`

Function: Get the communication mode.

Response: Character - Enumerated: 0 - Mass storage, 1 - VCP communication, 2 - TMC communication

Description

The command/Query to switches the communication mode.

Example

Tx	Rx	Remarks
:SYST:COMM:USB 1		Set new USB communication mode.
:SYST:COMM:USB?	:SYST:COMM:USB 0	Return current USB communication mode.

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error
-200, "Execution error"	Failed to enable/start/stop USB device
-244, "Illegal parameter value"	Illegal argument error
-310, "System error"	Illegal argument error or No usb Interface running

:SYST:COMM:VCP:TERM

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:COMM:VCP:TERM

Command Syntax

`:SYSTem:COMMunicate:VCP:TERMination CR|LF|CRLF`

Parameter: Character - Enumerated (CR, LF, CRLF):

Function: This command sets the termination character for VCP Terminal.

Query Syntax

`:SYSTem:COMMunicate:VCP:TERMination?`

Function: This function gets termination character for VCP terminal.

Response: Character - Enumerated: Termination Character for VCP terminal.

Description

The command sets or get the termination character for VCP terminal.

Example

Tx	Rx	Remarks
:SYST:COMM:VCP:TERM?	:SYST:COMM:VCP:TERM CR	Query returns the current termination character.
:SYST:COMM:VCP:TERM LF		Set the termination character as LF
:SYST:COMM:VCP:TERM?	:SYST:COMM:VCP:TERM LF	Query returns the current termination character.

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error

:SYST:CONT:SOUN:VOL

CAUTION: The alarm notification is always played at maximum volume.

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:CONT:VOL

Command Syntax

`:SYSTem:CONTrol[:SOUNd]:VOLume <percent>`

Parameter: Integer: Volume level in percentage

Function: Set volume level

Query Syntax

`:SYSTem:CONTrol[:SOUNd]:VOLume?`

Function: Get volume level

Response: Integer of sound volume in percentage value

Description

Control the system volume

Example

Tx	Rx	Remarks
:SYST:CONT:SOUND:VOL?	:SYST:CONT:SOUND:VOL 30	Query will return the current system volume
:SYST:CONT:SOUND:VOL 40		Set the system volume
:SYST:CONT:SOUND:VOL?	:SYST:CONT:SOUND:VOL 40	Query return the current volume

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error
-222, "Data out of range"	Volume level is out of range

:SYST:CTRL

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:CTRL

Query Syntax

:SYSTem:CTRL[x]?

where x = is the module number (default is 1)

Function: To get controller identity

Response: For CM0 it returns 0

   CM1 it returns 1,

   CM2 it returns 2,

   CM3 and CM3B returns 3,

   CM_Generic returns 6

Description

This query command returns the controller Identity

Example

Tx	Rx	Remarks
:SYST:CTRL?	:SYST:CTRL 2	Query returns the controller Identity

Possible Errors

Error	Description
-294, "Incompatible type"	Device is not recognised
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Hardware not found

:SYST:DATE

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:DATE

Command Syntax

`:SYSTem:DATE <year>, <month>, <day>`

Parameter: Integer: Years, Integer: Months, Integer: Days

Function: Sets the date.

Query Syntax

`:SYSTem:DATE?`

Function: Queries date

Response: Integer - Returns date setting in years, month, and day.

Description

Replies with the date settings in year, month, and day order.

Example

Tx	Rx	Remarks
:SYST:DATE 2024, 5, 9	None	Set a date
:SYST:DATE?	:SYST:DATE 2024, 5, 9	Return the last set date

Possible Errors

Error	Description
-224, "Illegal parameter value"	Wrong parameter
-311, "Memory error"	Failed to get date from RTC

:SYST:ECHO

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:ECHO

Command Syntax

:SYSTem:ECHO 0|1

Parameter: Boolean: true to enable Echo false to disable Echo

Function: This command is used to enable or disable the SCPI echo

Query Syntax

:SYSTem:ECHO?

Function: Query the SCPI echo settings status

Response: Returns the SCPI echo settings status.

Description

This command is used to enable or disable the SCPI echo, this is to switch between legacy mode and standard mode. When SCPI:ECHO is set to 1 (legacy mode), the command responses include command name as well as the output. If SCPI:ECHO is set to zero responses will only be having the output, it will not include the command name.

Example

Tx	Rx	Remarks
:SYST:ECHO 1		This will enable legacy mode
:SYST:ECHO?	:SYST:ECHO 1	Now legacy mode is enabled
:SENS:PRES?	:SENS:PRES 7.0916038	The pressure reading query returns the command as well as the output in legacy mode
:SYST:ECHO 0		This will enable standard mode
:SENS:PRES?	7.0974183	The pressure reading query returns just the output in standard mode

Possible Errors

Error	Description
-311, "Memory error"	Internal Database error
-310, "System error"	Failed to the enable/disable operation failed

:SYST:ERR

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:ERR

Query Syntax

`:SYSTem:ERRor?`

Function: Gets next error from the error queue.

Response:

Description

This command queries the system error queue which holds up to five errors. The instrument returns the error code "0" and message "No error" when no more errors are in the queue

Example

Tx	Rx	Remarks
:SYST:ERR?	:SYST:ERR 0, No error	None
:SOUR:PRES:COMP3?	None	
:SYST:ERR?	:SYST:ERR --114, Header suffix out of range	
:SYST:ERR?	:SYST:ERR 0, No error	No errors, error queue empty
:SENS:PRES qwer		To test the system, send a wrong command
SYST:ERR?	:SYST:ERR -113, Undefined header :SENS:PRES qwer	Querying the error status returns the latest error
SYST:ERR?	:SYST:ERR 0, No error	Immediately querying error status again returns no error since error queue is now empty

:SYST:PASS:CDIS

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:PASS:CDIS

Command Syntax

:SYSTem:PASSword:CDISable <cal_disable>

Parameter: Integer: 2317100 is the calibration password

Function: Disables the calibration with a password.

Description

This command disables calibration mode with the parameter above used as a password. To enable calibration mode refer to commands :SYST:PASS:CED and :SYST:PASS:CEN:STAT.

Example

Tx	Rx	Remarks
:SYST:PASS:CEN:STAT?	:SYST:PASS:CEN:STAT 1	Calibration mode is enabled
:SYST:PASS:CDIS 2317100	None	Calibration mode is disabled with password 2317100
:SYST:PASS:CEN:STAT?	:SYST:PASS:CEN:STAT 0	Calibration mode is disabled

Possible Errors

Error	Description
-220, "Parameter error"	Invalid password

:SYST:PASS:CEN

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:PASS:CEN

Command Syntax

`:SYSTem:PASSword:CENable <cal_enable>`

Parameter: Integer: 2317100 is the calibration password

Function: Enables calibration, default condition - disabled (calibration is not allowed).

Description

This command enables calibration mode with the above parameter used as a password. To disable calibration mode refer to commands :SYST:PASS:CDIS and :SYST:PASS:CEN:STAT?.

Example

Tx	Rx	Remarks
:SYST:PASS:CEN:STAT?	:SYST:PASS:CEN:STAT 0	Calibration mode is disabled
:SYST:PASS:CEN 2317100	None	Calibration mode is enabled, When enabled and a 3-point calibration can be carried out
:SYST:PASS:CEN:STAT?	:SYST:PASS:CEN:STAT 1	Calibration mode is enabled
:SYST:PASS:CDIS 2317100		It can be disabled again by issuing a command and a password
:SYST:PASS:CEN:STAT?	:SYST:PASS:CEN:STAT 0	Calibration mode is disabled

Possible Errors

Error	Description
-220, "Parameter error"	Invalid password
-294, "Incompatible type"	Calibration operation not allowed

:SYST:PASS:CEN:STAT

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:PASS:CEN:STAT

Query Syntax

:SYSTem:PASSword:CENable:STATe?

Function: Gets the status of the calibration password.

Response: Boolean - 0 - Disabled, 1 - Enabled

Description

This query asks if the calibration is enabled or disabled.

Example

Tx	Rx	Remarks
:SYST:PASS:CEN 2317100	None	None
:SYST:PASS:CEN:STAT?	:SYST:PASS:CEN:STAT 1	Calibration mode is enabled
:SYST:PASS:CDIS 2317100	None	None
:SYST:PASS:CEN:STAT?	:SYST:PASS:CEN:STAT 0	Calibration mode is disabled

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid control module ID
-241, "Hardware missing"	Cannot find the hardware
1000, "Operation not allowed"	Operation not permitted beacuse vacuum pressure detected

:SYST:SET

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:SET

Command Syntax

`:SYSTem:SET[x] MEASure|CONTrol, <value>`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (MEASure, CONTrol): , Numerical Real:

Function: This command only effective at switch-on condition and can set the controller on with a set-point.

Query Syntax

`:SYSTem:SET[x]?`

where x = is the module number (default is 1)

Function: Queries current system setting.

Response: Returns current settings in either measure or control with power up set-point value.

Description

The command to set or get the system settings.

Example

Tx	Rx	Remarks
:SYST:SET?	:SYST:SET MEASure,0.0	Current system setting is measure and power -up setpoint is 0.0
:SYST:SET CONT,100.0		Set the settings to CONT, and power up setpoint as 100.0
:SYST:SET?	:SYST:SET CONTrol,100.0	Current system setting is control and power -up setpoint is 100.0

Possible Errors

Error	Description
-114, "Header suffix out of range"	Invalid Control Module
-222, "Data out of range"	Validation failed
-240, "Hardware error"	Wrong with the hardware
-241, "Hardware missing"	Cannot find the hardware

:SYST:TIME

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:TIME

Command Syntax

:SYSTem:TIME <hours>, <minute>, <second>

Parameter: Integer: Hours, Integer: Minutes, Integer: Seconds

Function: Sets the time.

Query Syntax

:SYSTem:TIME?

Function: Returns current time in hour, minute and second.

Response: Integer - Returns time setting in hours, minutes, second.

Description

This command sets the time. The command query returns the current time in hour, minute and second order.

Example

Tx	Rx	Remarks
:SYST:TIME?	:SYST:TIME 10, 8, 44	It returns current time in hour, minute and second order
:SYST:TIME 11, 11, 2	None	Changed the time
:SYST:TIME?	:SYST:TIME 11, 11, 2	Returns the current time

Possible Errors

Error	Description
-224, "Illegal parameter value"	If the parameter is wrong
-311, "Memory error"	Failed to get the time from RTC

:SYST:VERS

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYST:VERS

Query Syntax

`:SYSTem:VERSion?`

Function: To get the SCPI Version

Response: Integer: Version number

Description

Replies with the SCPI version number

Example

Tx	Rx	Remarks
:SYST:VERS?	1999.0	Query returns the SCPI version

UNIT

Description

The UNIT subsystem configures the instrument's pressure measurement units.

:UNIT:ALT

Applicability   PACE6000 E

Short Form: :UNIT:ALT

Command Syntax

`:UNIT[x]:ALTitude FT|M`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (FT, M): Altitude units

Function: Selects altitude units:FT, M

Query Syntax

`:UNIT[x]:ALTitude?`

where x = is the module number (default is 1)

Function: Queries what altitude units are selected

Response: Character - Enumerated:(FT, M)

Description

This command selects the altitude units. The query gets the altitude units are selected.

Note: If the instrument is not in aeronautical mode it returns an error: -221, "Settings conflict".

Example

Tx	Rx	Remarks
:UNIT1:ALT?	:UNIT:ALT M	Returns altitude unit as meters
:UNIT1:ALT FT	None	Set the altitude unit to feet
:UNIT1:ALT?	:UNIT:ALT FT	Returns altitude unit as feet

:UNIT:CONV

Applicability   PACE5000 E, PACE6000 E

Short Form: :UNIT:CONV

Query Syntax

:UNIT[x]:CONVert?

where x = is the module number (default is 1)

Function: The query returns the conversion factor to convert from Current pressure unit to MBAR

Response: Returns the conversion factor to convert from Current pressure unit to MBAR

Description

This command returns conversion factor for current pressure unit

Example

Tx	Rx	Remarks
:UNIT:PRES?	:UNIT:PRES BAR	Current pressure unit is BAR
:UNIT:CONVert?	:UNIT:CONVert 1000.0000000	Conversion factor to convert from BAR to MBAR is 1000

:UNIT:PRES

Applicability   PACE5000 E, PACE6000 E

Short Form: :UNIT

Command Syntax

`:UNIT[x][:PRESsure]`
`MBAR|BAR|PA|HPA|KPA|MPA|MMHG|CMHG|MHG|INHG|KG/CM2|KG/M2|MMH`
`2O|CMH2O|MH2O|MMH2O20|CMH2O20|MH2O20|TORR|ATM|PSI|LB/FT2|IN`
`H2O4|INH2O|INH2O60|FTH2O4|FTH2O|FTH2O60|USER1|USER2|USER3|U`
`SER4`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (MBAR, BAR, PA, HPA, KPA, MPA, MMHG, CMHG, MHG, INHG, KG/CM2, KG/M2, MMH2O, CMH2O, MH2O, MMH2O20, CMH2O20, MH2O20, TORR, ATM, PSI, LB/FT2, INH2O4, INH2O, INH2O60, FTH2O4, FTH2O, FTH2O60, USER1, USER2, USER3, USER4): current pressure unit

Function: Selects pressure units

Query Syntax

`:UNIT[x][:PRESsure]?`

where x = is the module number (default is 1)

Function: Query what pressure units are selected

Response: Enum - Pressure units

Description

This command selects the current pressure units; USER1 to USER4 are the user defined units.

Note: Take care when entering the units, the letter 'O' can easily be mistaken for the number '0' or vice versa.

Example

Tx	Rx	Remarks
:UNIT:PRES?	:UNIT:PRES MBAR	The current unit is mbar
:UNIT:PRES bar	None	Set the unit to bar
:UNIT:PRES?	:UNIT:PRES BAR	The reply to this query confirms the change, the front panel display can also confirm the change.

Possible Errors

Error	Description
-207,"Suffix out of range"	Invalid CM ID
-206,"Settings conflict"	Validation failed
-201,"Memory error"	Set operation failed
-205,"Hardware missing"	Hardware missing

:UNIT:PRES:DEF

Applicability   PACE5000 E, PACE6000 E

Short Form: :UNIT:DEF

Command Syntax

`:UNIT[x][:PRESsure]:DEFine[y] <unit>, <factor>`

where x = is the module number (default is 1) , y = is the number of user defined units (default is 1)

Parameter:	String: ASCII representation of unit name., Double: Conversion factor from Pascals to required units
Function:	There are four user defined units on the instrument. This command defines the name and conversion factor to use.

Query Syntax

`:UNIT[x][:PRESsure]:DEFine[y]?`

where x = is the module number (default is 1) , y = is the number of user defined units (default is 1)

Function:	Query conversion factor
Response:	A string representing name and number corresponding to the conversion factor.

Description

This command defines the name and conversion factor for the special units. This conversion factor is from Pascals to the required units. An index of 1 is for USER1 unit and an index of 2 is for USER2 unit.

y	Special Units
1	USER1
2	USER2
3	USER3
4	USER4

Example

Tx	Rx	Remarks
:UNIT:PRES:DEF?	:UNIT:PRES:DEF "", 0.0000000	-
:UNIT:PRES:DEF4?	:UNIT:PRES:DEF4 "", 0.0000000	-
:UNIT:PRES:DEF4 "MyUnit", 200.0	None	Setting USER4 as 'MyUnit'
:UNIT:PRES:DEF4?	:UNIT:PRES:DEF4 "MyUnit", 200.0000000	-
:UNIT:PRES USER4	None	Select 'MyUnit' for use:
:UNIT:PRES?	:UNIT:PRES USER4	The front panel display shows "MyUnit" and uses it for measurement, set-point, full-scales and source pressures.
:SENS:PRES?	:SENS:PRES 5.0000187	The following query returns a number in 'MyUnit'

| :UNIT:PRES? | :UNIT:PRES USER4 | To confirming reading the pressure unit |
| :UNIT:PRES:DEF4? | :UNIT:PRES:DEF4 "MyUnit", 200.0000000 | Calculate equivalent in Pascals: 5.0000187 multiplied by 200.0000000 |

Possible Errors

Error	Description
-201,"Memory error"	Set operation failed
-202,"Parameter error"	User unit already present
-203,"Illegal parameter value"	Invalid user units

:UNIT:SPE

Applicability   PACE6000 E

Short Form: :UNIT:SPE

Command Syntax

`:UNIT[x]:SPEed KN|KPH|MPH`

where x = is the module number (default is 1)

Parameter: Character - Enumerated (KN, KPH, MPH): air speed unit

Function: Selects airspeed units.

Query Syntax

`:UNIT[x]:SPEed?`

where x = is the module number (default is 1)

Function: Queries the selected airspeed units.

Response: Character - Enumerated:(KN, KPH, MPH).

Description

This command selects the airspeed units. The query gets the selected airspeed units

Example

Tx	Rx	Remarks
:UNIT2:SPE?	:UNIT2:SPE KN	Return the current unit
:UNIT2:SPE?	:UNIT2:SPE KPH	Returns the unit as KPH

5.7 Common Commands

*CLS

Applicability   PACE5000 E, PACE6000 E

Short Form: *CLS

Command Syntax

*CLS

Function: This command clears all queues.

Description

Clears all event and condition registers. See section 3, status system.

Example

Tx	Rx	Remarks
*CLS		This clears all event and condition registers

*ESE

Applicability   PACE5000 E, PACE6000 E

Short Form: *ESE

Command Syntax

`*ESE <value>`

Parameter: Integer: 8 bit value of enable mask(minimum: 0 and Maximum: 255).

Function: Sets the Standard Event Status Enable register.

Query Syntax

`*ESE?`

Function: Queries the Standard Event Status Enable register.

Response: 8 bit integer of contents of Standard Event Status Enable register.

Description

See Standard Event Group, Section 3.3 and Figure 3-1.

Example

Tx	Rx	Remarks
*ESE?	ESE 0	Current register value
*ESE 32		Set the register value to 32
*ESE?	ESE 32	Query returns the current register value

*ESR

Applicability   PACE5000 E, PACE6000 E

Short Form: *ESR

Query Syntax

*ESR?

Function: Queries the Standard Event Status Register

Response: 8 bit integer of contents of Standard Event Status register.

Description

See Standard Event Group, Section 3.3 and Figure 3-1

Example

Tx	Rx	Remarks
*ESR?	ESR 8	Query returns the current ESR register value

*IDN

Applicability   PACE5000 E, PACE6000 E

Short Form: *IDN

Query Syntax

*IDN?

Function: Queries the identification of the instrument.

Response: A comma-separated list containing manufacturer, model, serial number, and software version.

Description

Returns identification.

Example

Tx	Rx	Remarks
*IDN?	Druck, PACE6000E, 11223399, DK0558 V01.01.42	Returns manufacture, model, serial number and software version

*OPC

Applicability   PACE5000 E, PACE6000 E

Short Form: *OPC

Command Syntax

*OPC

Function: When all operations have been completed, event 800 is written to the error/event queue (if enabled by STAT:QUE:ENAB). At the same time, this command allows the OPC bit in the standard event register to be set. This can be used to trigger a serial poll; see *ESR for details. If there are no pending operations, these actions are performed immediately. This command should be sent each time the OPC bit is allowed to be set.

Query Syntax

*OPC?

Function: When all operations have been completed a '1' is written to the output queue this can be used to trigger a serial poll, see *SRE for details.

Response: If there are no pending operations, a '1' is written to the queue immediately.

Note: It is intended that the *OPC command should be the last command in a program message.

Description

This command sets the OPC bit in the standard event register. The query returns '1' when all operations have been completed.

Example

Tx	Rx	Remarks
*OPC?	OPC 1	Query returns the OPC bit value

*RST

Applicability   PACE5000 E, PACE6000 E

Short Form: *RST

Command Syntax

*RST

Function: No Functionality

Description

No associated functionality. Maintained for SCPI Standard Conformance.

Example

Tx	Rx	Remarks
*RST?		No Functionality

*SRE

Applicability   PACE5000 E, PACE6000 E

Short Form: *SRE

Command Syntax

*SRE <value>

Parameter: Integer: integer 8 bit value of enable mask (minimum: 0 and Maximum: 255)

Function: Sets the Service Request Enable register.

Query Syntax

*SRE?

Function: Queries the Service Request Enable register.

Response: 8 bit integer of contents of Service Request Enable register.

Description

See Status Byte Group, Section 3.5 and Figure 3-1.

Example

Tx	Rx	Remarks
*SRE 32		Set the service request enable register value
*SRE?	*SRE 32	

*STB

Applicability   PACE5000 E, PACE6000 E

Short Form: *STB

Query Syntax

*STB?

Function: Queries the Status Register

Response: 8 bit integer of contents of Status register.

Description

See section 3, status system.

Example

Tx	Rx	Remarks
*STB?	16	Query returns the current status register value

*TST

Applicability   PACE5000 E, PACE6000 E

Short Form: *TST

Query Syntax

*TST?

Function: Queries the self-test status.

Response: Returns '0' to indicate fail, '1' to indicate pass.

Description

On a self-test failure, an error message can be stored in the error/event queue. The unit's hardware status cannot be changed during that test.

Example

Tx	Rx	Remarks
*TST?	1	Returns the test status

*WAI

Applicability   PACE5000 E, PACE6000 E

Short Form: *WAI

Command Syntax

`*WAI`

Function: No further commands are carried out until the completion of all pending operations. This command is ignored if all operations have been completed.

Description

This command stops further commands from being carried out until the completion of all pending operations.

Example

Tx	Rx	Remarks
*WAI		Command stops further commands.

5.8 Instrument Control Commands

GTL

:GTL

Applicability   PACE5000 E, PACE6000 E

Short Form: :GTL

Command Syntax

:GTL

Function: Go to local mode.

Description

Takes the instrument out of local lockout mode; the keypad on the instrument becomes active.

Example

Tx	Rx	Remarks
:GTL		Takes the instrument out of local lockout mode

LLO

:LLO

Applicability   PACE5000 E, PACE6000 E

Short Form: :LLO

Command Syntax

:LLO

Function: Local lock-out.

Description

Locks the instrument out of local mode. The instrument will no longer be in local mode and cannot be operated from the front panel.

Example

Tx	Rx	Remarks
LLO		Put Instrument into remote mode

LOC

:LOC

Applicability   PACE5000 E, PACE6000 E

Short Form: :LOC

Command Syntax

:LOC

Function: Local mode

Description

Puts the instrument into local mode. The instrument will no longer be in remote mode and can be operated from the front panel.

Example

Tx	Rx	Remarks
:LOC		Puts Instrument into local mode

REM

:REM

Applicability   PACE5000 E, PACE6000 E

Short Form: :REM

Command Syntax

:REM

Function: Selects remote mode.

Description

Sets the instrument in remote mode. The instrument will no longer be in local mode and cannot be operated from the front panel.

Example

Tx	Rx	Remarks
:REM		Sets into local mode

SRQ

:SRQ

Applicability   PACE5000 E, PACE6000 E

Short Form: :SRQ

Command Syntax

:SRQ

Function: Sends a service request to read messages.

Description

A service request causes all messages to be read from the register.

Example

Tx	Rx	Remarks
:SRQ		Not Implemented, maintained for backward compatibility

:SRQ:ENAB

Applicability   PACE5000 E, PACE6000 E

Short Form: :SRQ:ENAB

Command Syntax

:SRQ:ENABle

Function: Sets a service request to read messages.

Query Syntax

:SRQ:ENABle?

Function: Gets the messages in the register.

Response: Boolean: Message reading service request, 0 - Disbled and 1 - Enabled

Description

Sets a service request to enabled reading messages.

Example

Tx	Rx	Remarks
:SRQ:ENAB 1		Not Implemented maintained for backward compatibility

SYN

:SYN

Applicability   PACE5000 E, PACE6000 E

Short Form: :SYN

Query Syntax

:SYN?

Function: Queries synchronization.

Response: Boolean: 0 - not synchronized, 1 - synchronized

Description

Query for synchronization purposes.

Example

Tx	Rx	Remarks
:SYN?	:SYN?0	0 represents not synchronized, 1 represents synchronized.

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