



Honeywell Circular Chart Recorder DRC900C

Release 100

User Guide

DRCDOC-X001-en-100A

June 2025

CONTENTS

Chapter 1 - About this guide	9
Intended Audience	10
Related Documents	10
Revision history	10
Symbol definitions	10
Abbreviations	11
Chapter 2 - Product Overview	12
Analog inputs	13
Communication	14
RS485 Modbus Communication	14
BLE Communication	14
Touch Display	14
Configuration	14
Construction	14
Technical Data	15
Accuracy Specifications	16
Voltage and Resistance Equivalents for 0 % and 100 % Range Values	19
Certifications	21
Do's and Don'ts	23
Chapter 3 - Installation	25
Pre-installation information	26
Mounting	26
Mounting Consideration	26
Mounting Methods	27
Wiring Prerequisites	30
Electrical Considerations	30

Recorder grounding	31
Taking electrical noise precautions	31
Recommended wiring routing	31
Wire bundling recommendations	33
Wiring	34
Procedure	35
Procedure for input wiring	38
AI Instructions	41
Analogue Input Signal Wiring	42
Communication Wiring over RS485	42
Chapter 4 - Configuration, Start-up, and Operation of Recorder without Display	44
Overview	45
Configuration of Recorder without Display	45
Setting up the Recorder for Operation	45
Procedure	46
Running the Optional Step Test	46
Start-up	47
Procedure for Starting up the Recorder	47
Chapter 5 - Configuration, Start-up, and Operation of Recorder with Display ..	49
Operator Interface on Recorder with Display	50
Display	50
Configuration of Recorder with Display	51
Configuration Prompts	52
Start-up of Recorder with Display	62
Preparing the Recorder for Start-up	62
Running the Optional Step Test for Recorder with Display	63
Procedure for Running the Step Test	64

Completing Preparation and Start-up	65
Self-Test and Self-Diagnostics	67
Self-Tests	67
Self-Diagnostics	68
Operation of Recorder with Display	70
Monitoring the Recorder	70
Operators Interface	70
Chapter 6 - Configuring Using Honeywell EasySet Application	73
Overview	74
Connecting to EasySet app	74
Dashboards	86
Upload Configuration	87
Offline Configuration	91
Export configuration	97
Import configuration	98
Download	100
Online Configuration	101
Maintenance Data	107
Firmware Update through EasySet app	109
Settings	116
Pen Alignment	117
Step Test	120
Chart Rotation	122
Change Password	123
Factory Reset	127
Logs	129
About EasySet	131
Chapter 7 - Calibration	134

Introduction	135
Field Calibration Ranges	135
Input Calibration using Display	136
Input Calibration using Easyset App	140
Chapter 8 - Maintenance	145
Replacement of Chart	146
Replacing the Ink cartridge	147
Maximizing the life of pen	147
Cleaning Instructions	148
Chapter 9 - Troubleshooting	149
Troubleshooting of a Recorder without Display	150
Types of problems	150
Installation related problems	150
Application related problems	151
Hardware and software related problems	151
Troubleshooting Procedures	151
Recorder Failure Troubleshooting	152
Pen Trace Troubleshooting	152
Chart Rotation Troubleshooting	153
Troubleshooting Erratic Pen Movement	154
Alignment of Pen at 0 and 100%	155
Troubleshooting of a Recorder with Display	155
Types of problems	156
Installation related problems	156
Application related problems	156
Hardware and software related problems	156
Self Diagnostics	157
Troubleshooting Procedures	157

Chapter 10 - Security	163
Security Features	164
Physical Security	165
System Logs	166
Chapter 11 - Part List	167
Exploded Views	168
Door Assembly	168
Chart Plate	170
Recorder Components Without Options	171
Available 10-inch charts	173
A. Single Range Charts	173
Dual Range Charts	183
Logistics	189
Transport and Storage	190
Disposal	190
Notices	191

DISCLAIMER

This document contains Honeywell proprietary information. Information contained herein is to be used solely for the purpose submitted, and no part of this document or its contents shall be reproduced, published, or disclosed to a third party without the express permission of Honeywell International Sàrl.

While this information is presented in good faith and believed to be accurate, Honeywell disclaims the implied warranties of merchantability and fitness for a purpose and makes no express warranties except as may be stated in its written agreement with and for its customer.

In no event is Honeywell liable to anyone for any direct, special, or consequential damages. The information and specifications in this document are subject to change without notice.

Copyright 2025 - Honeywell International Sàrl

ABOUT THIS GUIDE

In this section:

<i>Intended Audience</i>	10
<i>Related Documents</i>	10
<i>Revision history</i>	10
<i>Symbol definitions</i>	10
<i>Abbreviations</i>	11

This manual contains instructions for Installation, Configuration, Start-up, Operation, Calibration, Troubleshooting, Maintenance, Transportation and Storage of the DRC900C series Honeywell Circular Chart Recorders.

Intended Audience

This guide is primarily intended for Honeywell field personnel who install and configure the product.

Related Documents

Document ID	Document Number
DRCDOC-X002-en-100A	Technical Specification
DRCDOC-X004-en-100A	Quick Start Guide

Revision History

Document Number	Revision	Model Number	Date	Changes
DRCDOC-X001-en-100A	A	DRC901C	June 2025	The initial release of R100.

Symbol Definitions

The following table lists the symbols used in this document to denote certain conditions.

Symbol	Definition
	CAUTION symbol on the equipment refers the user to the Product Manual for additional information. This symbol appears next to required information in the manual.

Symbol	Definition
	WARNING: Risk of electrical shock. This symbol warns the user of a potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 Vdc may be accessible. Failure to comply with these instructions could result in death or serious injury.
	PROTECTIVE EARTH (GROUND) Grounding of this recorder shall be in accordance with national and local electrical codes.
	NOISELESS (CLEAN) EARTH (GROUND) To minimize electrical noise and transients that may adversely affect the recorder, connection of the recorder terminal (located in the rear of the case) to a local earth (ground) using a No. 11 (4 mm ²) preferably braided copper conductor is recommended.

Abbreviations

Symbol	Definition
AI Card	Analog Input Card
UPS	Uninterruptible Power Supply
RTD	Resistance Temperature Detector
RH	Relative Humidity

PRODUCT OVERVIEW

In this section:

<i>Analog inputs</i>	13
<i>Communication</i>	14
<i>Configuration</i>	14
<i>Construction</i>	14
<i>Technical Data</i>	15
<i>Do's and Don'ts</i>	23

The DRC900C series includes circular chart recorders that have a stepper motor controlled by a microprocessor for plotting the process-measured values on a pre-printed chart. The pre-printed charts are available with different input ranges and timelines. The DRC901C model comes with one or two pen options, "with display" or "without display" options, and supports 10-inch (250mm) chart papers.

Honeywell Circular Chart Recorder DRC901C can be installed and set up easily in various conditions to measure the process data.

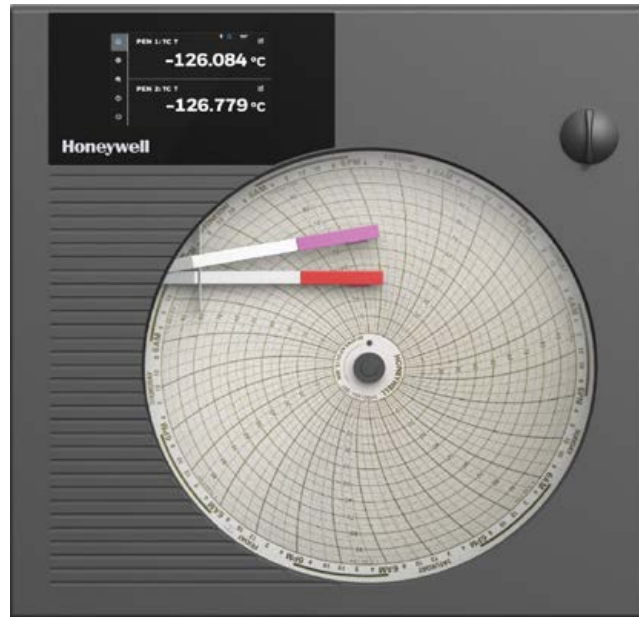


Figure 2-1: DRC901C Chart Recorder

Analog inputs

The Analogue Input (AI) card includes 4 inputs, with 2-pen recorders recognizing a maximum of 2 configurable inputs and 1-pen recorders recognizing a maximum of 1 configurable input. Additional input channels are included for redundancy/ future use.

The input for each channel can be any standard electrical signal: milliamp, millivolt, voltage, RTD, or thermocouple. The input type and range are configurable. For the recorders with displays, the range can be expanded and compressed to meet specific measurement needs. The display also permits the entry of input bias and filter values. (The input filter for the models without a display is fixed at one second; their bias is zero).

Communication

The below features are available by default in all models.

RS485 Modbus Communication

The Modbus communication option permits configuration of the recorder and monitoring of process variables over a standard multi-drop serial communications link.

BLE Communication

The BLE communication permits configuration of the recorder and monitoring of process variables using the Honeywell EasySet mobile app.

Touch Display

The capacitive touch display in the recorder lets you to visualize the real time value of the process variable of each input associated to the pens. The display also enables user to perform the configuration of the recorder.

Configuration

The model with display can be configured using the display and Honeywell EasySet app. The model without display can be configured using only the Honeywell EasySet app.

The model with display also uses a BLE app to define the type of input to be expected by the hardware. Input parameters used by the software are configured using the display.

The display is used to configure models with these options. When the unit is in configuration mode, set-up parameters are displayed and grouped by function. Designate site-specific values by selecting them from a list of choices or entering them as numeric values.

Construction

The DRC901C recorders are housed in a rugged molded case that can be panel or surface mounted. An acrylic-windowed, gasketed door protects internal components from harsh environments, while allowing easy access to the chart.

Technical Data

Performance			
Number of Inputs	One-pen model: One input Two-pen model: Two inputs		

Performance Specification (Reference Accuracy)			
Types of Input Actuations (Linear)	Range	Reference Accuracy*	Temp Stability# ± Degrees Error Per 1 Degree ΔT
Milliamperes DC	0 to 20	0.1 % F.S	0.005 %/°F
	4 to 20	0.1 % F.S	0.005 %/°F
Millivolts DC	0 to 10	0.2 % F.S	0.005 %/°F
	0 to 100	0.1 % F.S	0.005 %/°F
	0 to 200	0.1 % F.S	0.005 %/°F
Volts DC	0 to 1	0.2 % F.S	0.005 %/°F
	0 to 2	0.2 % F.S	0.005 %/°F
	0 to 5	0.1 % F.S	0.005 %/°F
	1 to 5	0.1 % F.S	0.005 %/°F
	0 to 10	0.1 % F.S	0.005 %/°F
	2 to 10	0.1 % F.S	0.005 %/°F
*Accuracy at reference conditions ± 22°C (± 2°C) and includes reference junction calibration of ± 0.01°C using the standard "ice bath" method of calibration. #Temperature Stability - Interpreted as % of Full Span per Degree ΔT change in ambient from Reference condition. Notes:			

Performance Specification (Reference Accuracy)			
Types of Input Actuators (Linear)	Range	Reference Accuracy*	Temp Stability# ± Degrees Error Per 1 Degree ΔT
- Total Accuracy = Reference Accuracy + CJC Accuracy (T/C input types only). - Factory calibration source have typical variations of ± 10 μV for mV /Volts Inputs and ± 0.3Ω for RTDs which means recalibration may be required to achieve stated accuracy. - The RTD accuracy is tested for 3-Wire configuration. - Tolerance for mA input types includes tolerance of external 10 ohms shunt resistors (0.1% tolerance). - For field calibration of mV/TC, the accuracy of the calibrating source shall be ±0.02% or better. - For field calibration of RTD, the accuracy of resistance decade box shall be ±0.02% or better for 0 to 500 ohm range with resolution of 0.01 ohm.			

Accuracy Specifications

Types of Input Actuators	Range		Reference Accuracy*		Temp Stability# ± Degrees Error Per 1 Degree ΔT
	°F	°C	± °F	± °C	
Thermocouples B	140 to 3300	60 to 1816			
	140 to 500	60 to 260	49	27	1.00
	500 to 1000	260 to 538	10	5.5	0.50
	1000 to 3300	538 to 1816	5	2.8	0.25
E	-454 to 1832	-270 to 1000			
	-454 to -202	-270 to -130	45	25	0.50
	-202 to 1832	-130 to 1000	2.8	1.6	0.20

Chapter 2 - Product Overview

Types of Input Actuations	Range		Reference Accuracy*		Temp Stability# ± Degrees Error Per 1 Degree ΔT
E (low)	–200 to 1100	–129 to 593	2	1.1	0.15
J	0 to 1600	–18 to 871	2	1.1	0.16
J (low)	20 to 770	–7 to 410	1.8	1.0	0.07
K	–320 to 2500	–196 to 1371	4.5	2.5	0.25
K (low)	–20 to 1000	–29 to 538	2.1	1.2	0.10
Ni-Ni Moly	32 to 2500	0 to 1371			
	32 to 500	0 to 260	2.0	1.2	0.10
	500 to 2500	260 to 1371	1.4	0.8	0.20
Nicrosil-Nisil	0 to 2192	–18 to 1200	3.0	1.7	0.22
R	0 to 3100	–18 to 1704			
	0 to 500	–18 to 260	8.0	4.4	0.10
	500 to 3100	260 to 1704	3.6	2.0	0.25
S	0 to 3100	–18 to 1704			
	0 to 500	–18 to 260	8.0	4.4	0.10
	500 to 3100	260 to 1704	3.6	2.0	0.25
T	–420 to 700	–251 to 371	3.9	2.2	0.11
T (low)	–200 to 600	–129 to 316	1.8	1.0	0.10
W5W26	0 to 4200	–18 to 2316			
	0 to 600	–18 to 316	5.6	3.2	1.00

Types of Input Actuators	Range		Reference Accuracy*		Temp Stability# ± Degrees Error Per 1 Degree ΔT
	600 to 3600	316 to 1982	5.2	3.0	0.30
	3600 to 4200	1982 to 2316	6.4	3.6	0.20
RTD					
Platinum					
100 Ω**	-300 to 900	-184 to 482	2.8	1.6	0.15
100 Ω (low)**	-130 to 392	-90 to 200	1.6	1.0	0.15
100 Ω (T)***	-238 to 482	-150 to 250	2.0	1.1	0.15

*Accuracy at reference conditions ± 22°C (± 2°C) and includes reference junction calibration of ± 0.01°C using the standard "ice bath" method of calibration.

**IEC Alpha = 0.00385

***Alpha = 0.00391

#Temperature Stability - Interpreted as % of Full Span per Degree ΔT change in ambient from Reference condition.

Notes:

- Total Accuracy = Reference Accuracy + CJC Accuracy (T/C input types only).
- Factory calibration source have typical variations of ± 10 μV for mV /Volts Inputs and ± 0.3Ω for RTDs which means recalibration may be required to achieve stated accuracy.
- The RTD accuracy is tested for 3-Wire configuration.
- Tolerance for mA input types includes tolerance of external 10 ohms shunt resistors (0.1% tolerance).
- For field calibration of mV/TC, the accuracy of the calibrating source shall be ±0.02% or better.
- For field calibration of RTD, the accuracy of resistance decade box shall be ±0.02% or better for 0 to 500 ohm range with resolution of 0.01 ohm.

Voltage and Resistance Equivalents for 0 % and 100 % Range Values

Sensor Type	PV Input Range		Range Values*		
	°F	°C	0 %	68 °F/20 °C	100 %
Thermocouples B	105 to 3300	41 to 1816	0 mV		13.769 mV
E	-454 to 1832	-270 to 1000	-9.835 mV	1.192 mV	76.373 mV
E (low)	-200 to 1100	-129 to 593	-6.472 mV		44.555 mV
J	0 to 1600	-18 to 871	-0.886 mV	1.019 mV	50.060 mV
J (low)	20 to 770	-7 to 410	-0.334 mV		22.400 mV
K	-320 to 2500	-196 to 1371	-5.822 mV	0.798 mV	54.856 mV
K (low)	-20 to 1000	-29 to 538	-1.114 mV		22.255 mV
Ni-Ni-Moly	32 to 2500	0 to 1371	-0.000 mV	0.755 mV	71.773 mV
Nicrosil-Nisil	0 to 2372	-17.8 to 1300	-0.461 mV	0.525 mV	47.513 mV
R	0 to 3100	-18 to 1704	-0.090 mV	0.111 mV	20.281 mV
S	0 to 3100	-18 to 1704	-0.092 mV	0.113 mV	17.998 mV
T	-420 to 700	-251 to 371	-6.187 mV	0.789 mV	19.097 mV
T (low)	-200 to 600	-129 to 316	-4.149 mV		15.771 mV
W5W26	0 to 4200	-18 to 2315	-0.234 mV	0.273 mV	37.075 mV
RTD					

Sensor Type	PV Input Range		Range Values*		
	°F	°C	0 %	68 °F/20 °C	100 %
100 Ω **	-300 to 900	-184 to 482	25.18 Ω		274.96 Ω
100 Ω (low)**	-130 to 392	-90 to 200	64.30 Ω		175.84 Ω
100 Ω (T)***	-238 to 482	-150 to 250	38.79 Ω		195.57 Ω
Milliamps	0 mA to 20 mA		0 mA		20 mA
	4 mA to 20 mA		4 mA		20 mA
Millivolts	0 mV to 10 mV		0 mV		10 mV
	0 mV to 100 mV		0 mV		100 mV
	0 mV to 200 mV		0 mV		200 mV
Volts	0 V to 1 V		0 V		1 V
	0 V to 2 V		0 V		2 V
	1 V to 5 V		1 V		5 V
	0 V to 5 V		0 V		5 V
	0 V to 10 V		0 V		10 V
	2 V to 10 V		2 V		10 V

*Range values for thermocouples are based on a cold junction temperature of 32 °F (0 °C). These values must be adjusted for the actual cold junction temperature when using the ambient temperature method for calibrating thermocouple inputs.

**IEC Alpha = 0.00385

***Alpha = 0.00391

Certifications

Performance	
Regulatory Certifications	CE Mark EMC Directive: 2014/30/EU Low Voltage Directive: 2014/35/EU RoHS Directive: 2011/65/EU
	FCC Approval 47 CFR Part 15 Subpart B and Subpart C
	Bluetooth SIG Listed
	Safety Certification CSA C22.2 No. 61010-1-12, UPD1:2015, UPD2:2016, AMD1:2018 UL 61010-1 3rd ed (Rev. Jun 6, 2023)
IP Rating	Ingress Protection Class: IP54
CE Conformity (Europe) (Optional)	This product is in conformity with the protection requirements of the following European Council Directives: 2014/35/EU , the Low Voltage Directive, and 2014/35/EU , the EMC Directive. Conformity of this product with any other “CE Mark” Directive(s) shall not be assumed.
Product Classification	Class I: Permanently Connected, Panel/Surface Mounted Industrial Control Equipment with protective earthing (grounding). (EN 61010-1).
Enclosure Rating	Terminals must be enclosed within the panel. Front panel is designed for IP54.
Installation Category (Over-	Category II: Energy-consuming equipment supplied from the fixed installation. Local level appliances, and Industrial Control Equipment. (EN 61010-1) Group 1, Class A, ISM Equipment

Performance	
voltage Category)	(EN 55011/CISPR 11, emissions), Industrial Equipment (EN 61326-1, immunity).
Pollution Degree	Pollution Degree 2: Normally non-conductive pollution with occasional conductivity caused by condensation. (Ref. IEC 664-1).

Do's and Don'ts

	Do's
✓	Whenever the chart or the pens are replaced with new ones, make sure pen alignment is done properly over 0% and 100% on the chart.
✓	Pen High and Pen Low is recommended to be configured inline with the Chart Low and Chart High configuration.
✓	Whenever a request is sent from Honeywell EasySet app, wait for the response from the recorder.
✓	While performing calibration, make sure an accurate input is given from source for Zero/ SPAN calibration.
✓	Make sure the recorder stays connected during a firmware upgrade.
✓	While performing pen alignment, visually check that the pens are aligned to 0% and 100% on the chart, by standing and observing in front of the recorder.
✓	Make sure channels are enabled before running the totalizer.
✓	When the Honeywell EasySet app is connected to the recorder, wait until the app's dashboard loads the latest values.
✓	To check if the recorder has fully booted up, look for the green LED on the CPU board and ensure the PV screen is visible on the display.
✓	When a configuration is downloaded from Honeywell EasySet app into the recorder (with/ without display), wait for the download successful message that appears on the App, before performing any operation.
✓	Make sure pens and chart rotation are enabled on the Display/ Honeywell EasySet app.

	Don'ts
	When the firmware upgrade is in progress, do not navigate to any other screen on the Honeywell EasySet app.
	When the firmware upgrade is in progress, do not move away from the recorder.
	When step test is in progress, do not disturb the recorder using the Display/ Honeywell EasySet app.
	After performing pen alignment, do not disturb/ touch the pens position.
	Do not disturb the chart while it is rotating.

INSTALLATION

In this section:

<i>Pre-installation information</i>	26
<i>Mounting</i>	26
<i>Wiring Prerequisites</i>	30

Installation of the DRC901C recorder consists of mounting and wiring the recorder according to the instructions given in this section.

Pre-installation information

If the recorder has not been removed from its shipping carton, inspect the carton for damage and remove the recorder. Inspect the recorder for any obvious shipping damage and report any damage due to transit to the carrier.

- Check each part of the product after delivery for any damage which might occur during the transportation and report if any damage is seen.
- Make sure that the bag contains hardware required for mounting purpose.

Mounting

Mounting Consideration

Physical considerations

The recorder can be mounted flush in a panel, or on the surface of a panel or wall, using the mounting kit supplied with the recorder. Adequate access space must be available at the back of the panel for installation and servicing.

Overall dimensions

The overall dimensions and panel cutout requirements for mounting the recorder.

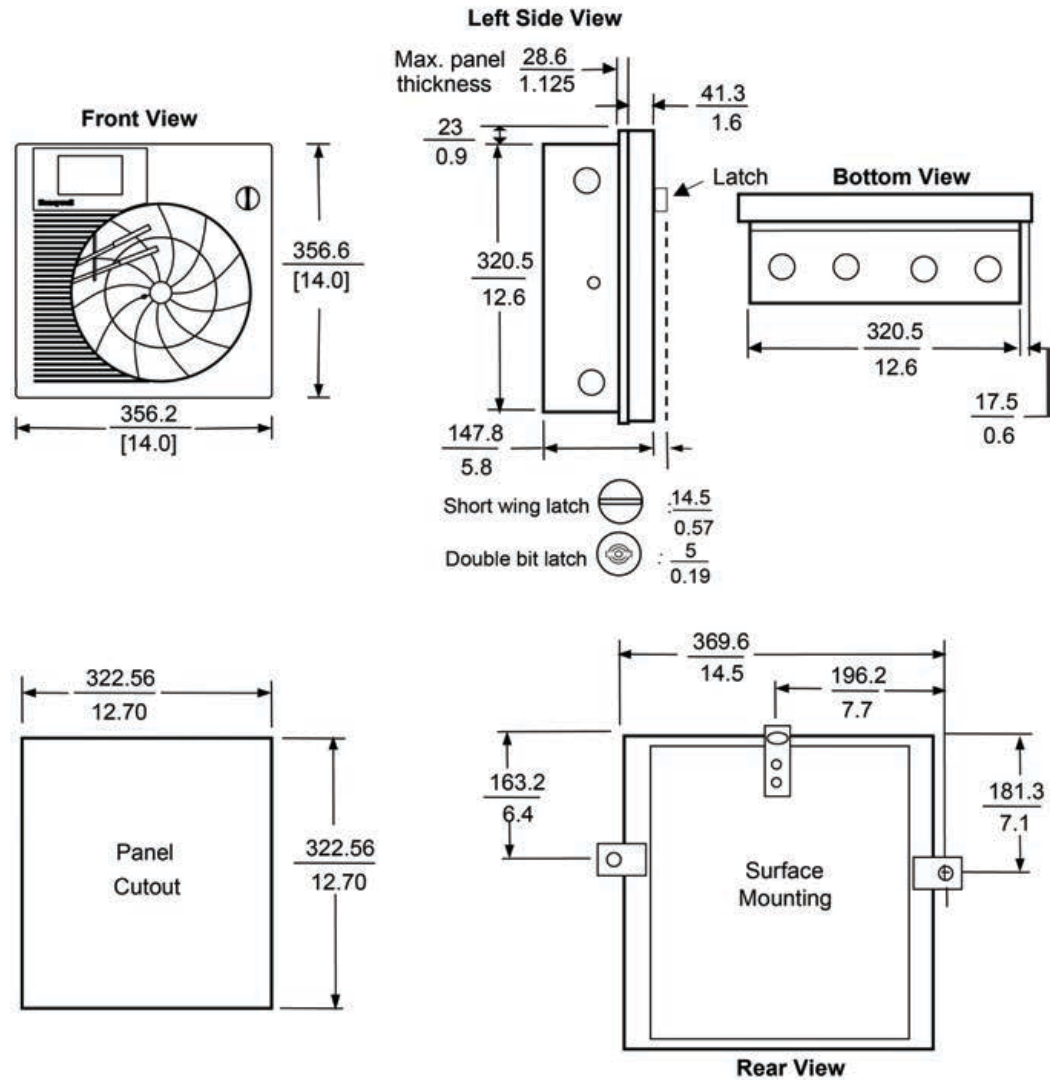


Figure 3-1: Overall Dimensions

Mounting Methods

This section provides instructions for mounting the recorder using one of the following methods, mentioned below:

Before mounting the recorder, remove the plugs which are relevant at the bottom and sides of the recorder case for wire entry through 1/2" (12.7 mm) conduits.

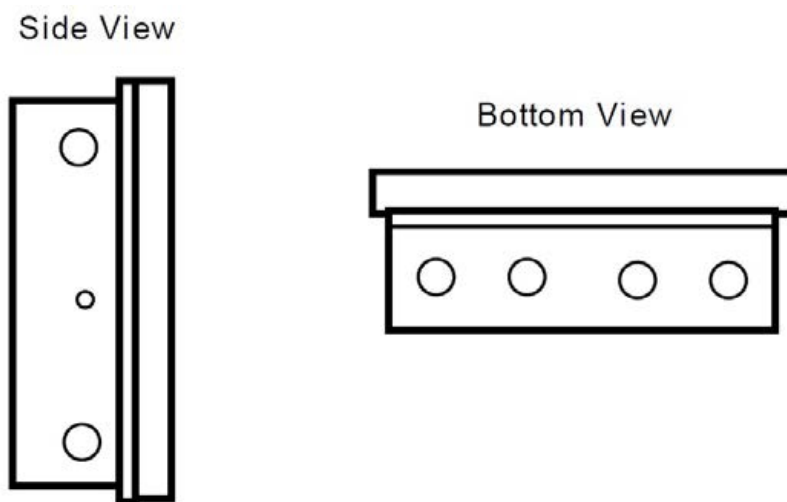


Figure 3-2: Plug Locations

Panel Mounting

1. At the appropriate location, make a square cutout in the panel. Cutout dimensions should be $322.56 \text{ mm} \pm 1.52 \text{ mm} \times 322.56 \text{ mm} \pm 1.52 \text{ mm}$ [$12.7 \text{ in} \pm 0.060 \text{ in} \times 12.7 \text{ in} \pm 0.060 \text{ in}$]. See "Overall Dimensions" on the previous page.
2. Point the recorder case properly and slide it into the cutout from the front of the panel. Support the recorder as shown in Steps 3 and 4.
3. Refer "Panel Mounting (Rear View)" on the facing page. From the back of the panel, attach a mounting bracket to each side of the recorder case using a $1/4\text{-}20 \times 1/2\text{-inch}$ hex screw for each bracket (mounting hardware supplied with recorder). Leave the screws slightly loose so you can adjust the brackets.
4. While holding the recorder firmly against the panel, slide each bracket against the back of the panel and tighten the screws.

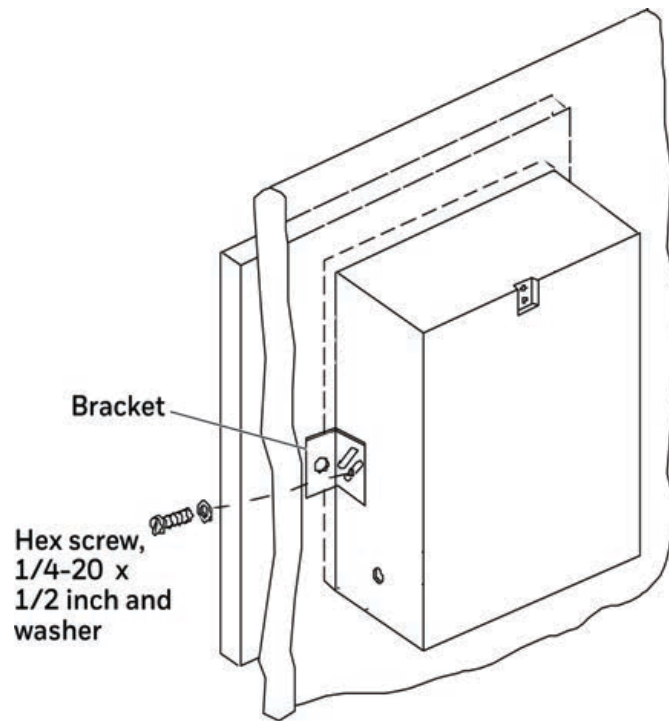


Figure 3-3: Panel Mounting (Rear View)

Mounting on Surface (of Panel or Wall)

ATTENTION: Three (3) screws must be supplied by the user for attaching the mounting hardware (brackets and support hook) to the panel or wall.

1. Using two flat-head 10-32 x 1/4-inch screws supplied with the recorder, fasten the support hook into the recess at the back of the recorder case.
2. Using 1/4-20 x 1/2-inch hex screws and lockwashers, attach a mounting bracket to each side of the case. Leave the screws slightly loose to permit some adjustments of the brackets.
3. On the panel, mark the locations for the three holes, as shown by the figure pattern in "Surface Mounting on a Panel or Wall (Rear View)" on the next page
4. Using a drill of appropriate size for user-supplied screws, drill a hole in the front of the panel for the eye of the support hook.
5. Insert the screws for the support hook into the panel, allowing the screw head to protrude approximately 5/16-inch.

6. Hang the recorder support hook on the screw. Make sure that the locations for the other two holes are correct. If not, make sure that the recorder is aligned vertically, and use the brackets as templates to mark the proper locations.
7. Remove the recorder from the panel and drill the other two holes.
8. Hang the recorder on the screw by the support hook and insert the other two user-supplied screws through the brackets into the panel. Tighten the two hex screws that attach the brackets to the case.

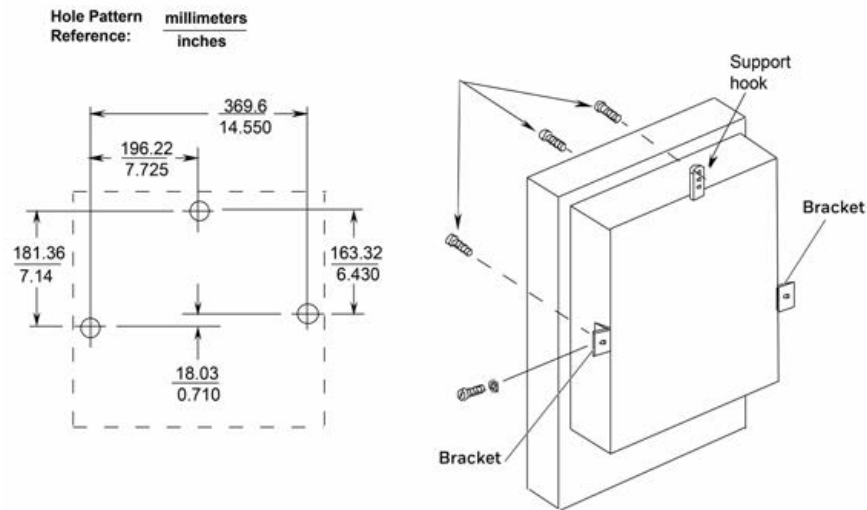


Figure 3-4: Surface Mounting on a Panel or Wall (Rear View)

Wiring Prerequisites

ATTENTION: Wiring should be performed by qualified personnel. The conduit hub is to be connected to the conduit before the hub is connected to the enclosure.

Electrical Considerations

CAUTION: The recorder is considered “rack and panel mounted equipment” per IEC/EN 61010-1, Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements.

Recorder grounding

Symbol	Definition
	PROTECTIVE EARTH (GROUND) Grounding of this recorder shall be in accordance with national and local electrical codes.
	NOISELESS (CLEAN) EARTH (GROUND) To minimize electrical noise and transients that may adversely affect the recorder, connection of the recorder terminal (located in the rear of the case) to a local earth (ground) using a No. 11 (4 mm ²) preferably braided copper conductor is recommended.

Taking electrical noise precautions

Electrical noise is composed of unabated electrical signals that produce undesirable effects in measurement and control circuits.

Digital equipment is especially sensitive to the effects of electrical noise. The recorder has built-in circuits to reduce the effect of electrical noise from various sources.

If there is a need to further reduce these effects:

- **Separate External Wiring**—Separate connecting wires into bundles and route the individual bundles through separate conduits or metal trays.
- **Use Suppression Devices**—For additional noise protection, commercially available suppression devices can be added at the external source.

Recommended wiring routing

The case is equipped with numerous knock-outs (plugs) for wiring conduits.

Cable trays and conduits are useful for both cable separation and shielding. The trays and conduits may be metal or non-metal but solidly grounded. The cables and wires should be grouped according to their associated signal level, keeping the power in a separate conduit away from signal input or communication lines. It is the responsibility of the user to select and install the conduits or cable trays.

Below are the recommendations:

1. Ensure that an approved ½ inch NPT cable conduit is used.
2. Conduits must be securely fastened to prevent movement or damage. Ensure that the conduit is tightened with an appropriate torque. Follow the instructions provided in the manufacturer's datasheet.
3. Follow local electrical codes and regulations while installing conduit systems. These codes are designed to ensure safety and compliance with industry standards.
4. When not in use, the conduit openings on the enclosure must be plugged with the caps provided to prevent dust, moisture, or pests from entering the opening.

See the below figure for the recommended use of these points of entry for various types of wiring.

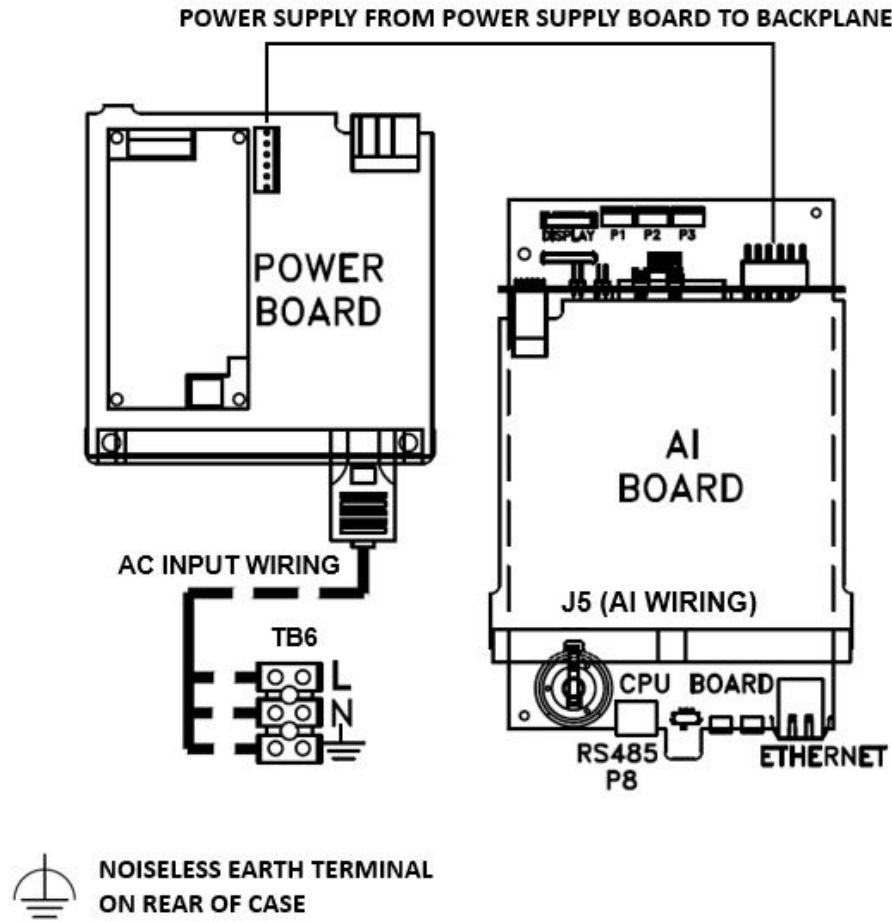


Figure 3-5: Recommended Wiring Routing

Wire bundling recommendations

Bundling together the wrong wires can adversely affect the recorder's performance. The wire functions that are packed together are shown in the table below. Do not bundle together wires from different categories.

Category	Wire Functions
1	- Line power wiring - Earth ground wiring
2	Analog signal wire, such as: Input signal wire (thermocouple, 4 to 20 mA, etc.)

- | | |
|--|---|
| | <ul style="list-style-type: none">• Communication wiring• Transmitter power out wiring |
|--|---|

Wiring

This section describes the procedures for wiring power, analog inputs, and communication links.

Power Wiring

WARNING: Be sure that the line voltage is OFF before connecting the power wires to the recorder. Failure to observe this precaution can result in serious personal injury or death.

ATTENTION: It is recommended to use UPS (Uninterruptible Power Supply) to avoid data loss and to ensure continuous power to the recorder, during power cuts, as the power backup is not existing.

CAUTION:

This equipment is suitable for connection to 100 to 240V AC (48 to 62 Hz) power supply mains.

To ensure overcurrent protection while performing the installation, it is the user's responsibility to:

- Use a dual-pole switch with fuses (0.5A, 250V AC) as shown in [figure 3-7](#).
- Or, use a circuit breaker, i.e. a single pole breaker that needs to be connected on the ungrounded supply conductor Line "L2/H".

The switch or circuit breaker shall be located in close proximity to the recorder, within easy reach of the operator. The switch or circuit breaker shall be marked as the disconnecting device for the recorder.

Procedure

1. Open the recorder door. Loosen the captive screw in the chart plate and swing the plate out.
2. Locate the power terminal block for your recorder model.

NOTE: The connection between the terminal block at the bottom of the case and the power supply board is made at the factory. In all models, you only have to connect power to a single terminal block.

3. Run the power wiring separately through the conduit hole.
4. Strip the 1/4-inch maximum of insulation from the end of each wire and form the end to fit under a screw connection.

ATTENTION: To avoid damaging the recorder, make sure to install the power wiring at the correct screw terminals.

5. Tighten the screws to secure the wiring.
6. Dress the wiring with as much slack as possible. Do not bundle any low-level signal wires with the power wiring.

WARNING:

1. Input line voltage may be present on the recorder's ground plane if earth ground is not attached.
2. Failure to observe this precaution can result in serious personal injury.

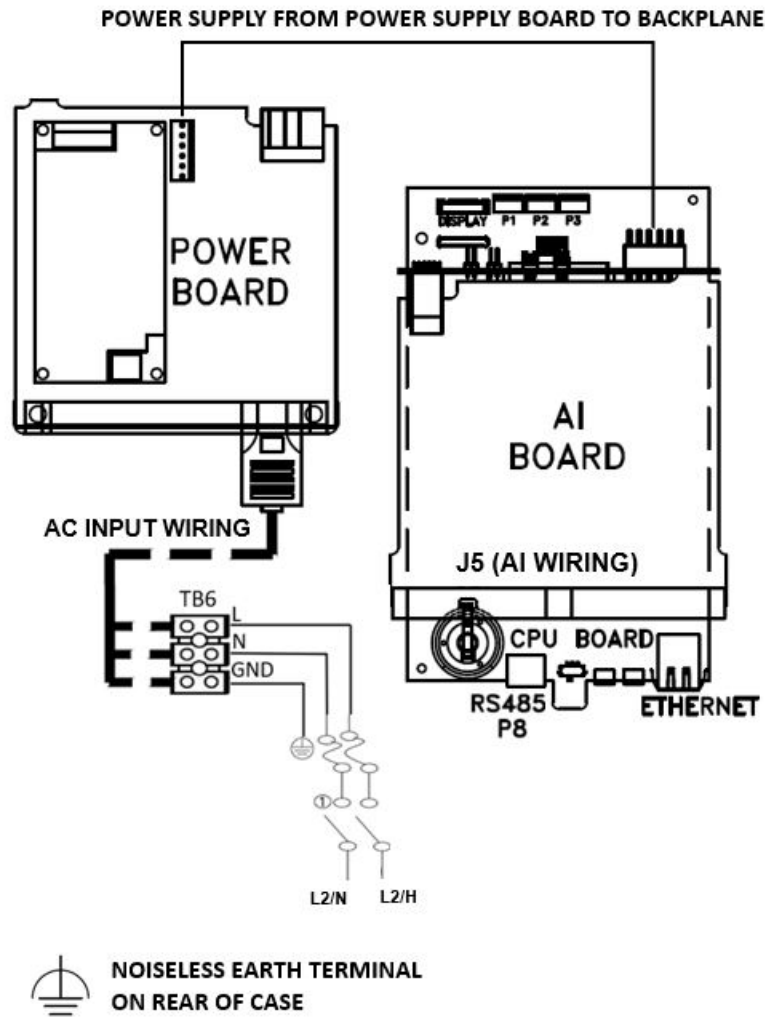


Figure 3-6: Power Wiring

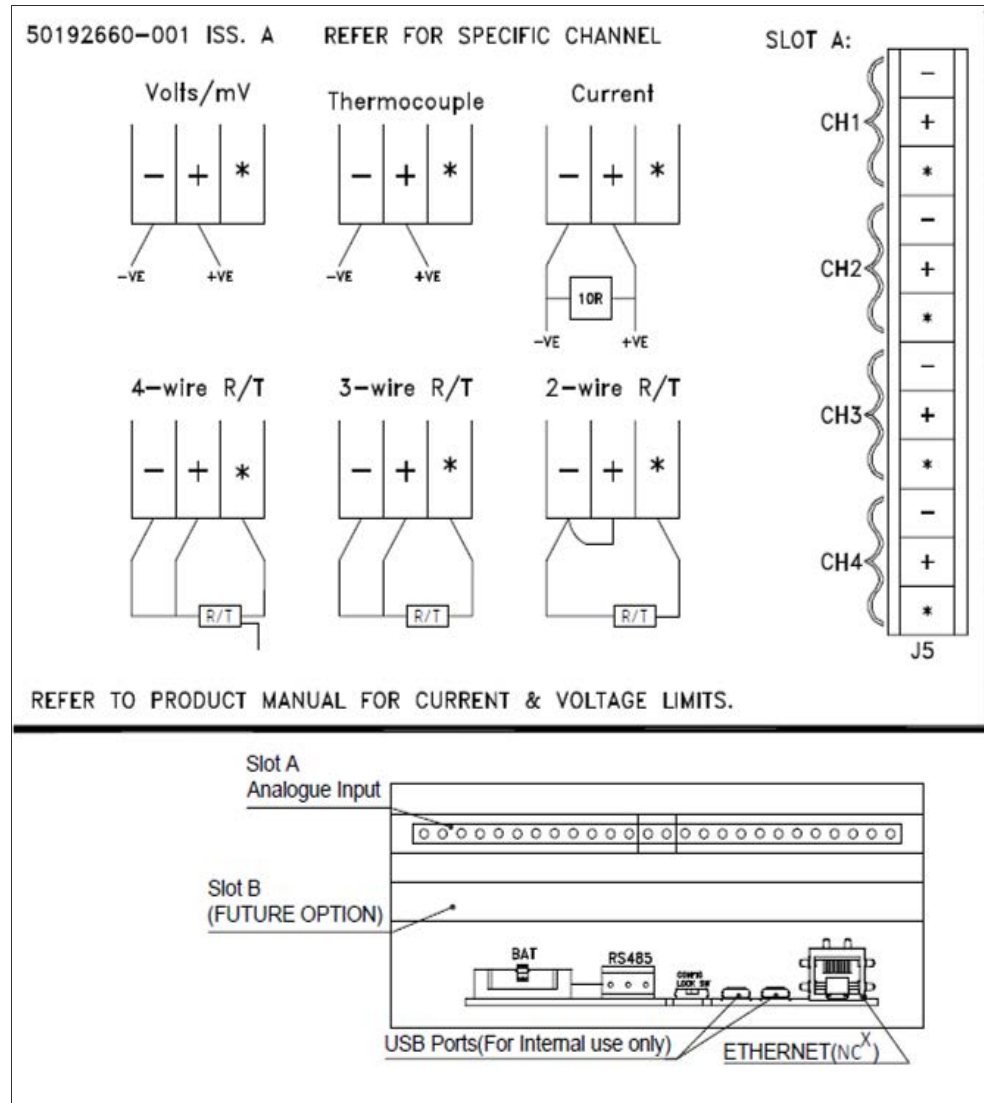
7. To ensure overcurrent protection while performing the installation, it is the user's responsibility to:
 - Use a dual-pole switch with fuses (0.5A, 250V AC) as shown in [figure 3-7](#).
 - Or, use a circuit breaker, i.e. a single pole breaker that needs to be connected on the ungrounded supply conductor Line "L2/H".

8. PROTECTIVE EARTH (Ground): The grounding of this recorder shall be in accordance with the national and local electrical codes.
9. NOISELESS (CLEAN) EARTH (Ground): To minimize the electrical noise and transients that may adversely affect the recorder's performance, the ground connection of the recorder terminal (located at the rear of the case) to a local earth (ground) shall use (4 mm²) braided copper conductor.

Analog Input Wiring

The inputs for Pen 1 and Pen 2 can be connected to any channel of the J5 connector on the AI card.

Each input can be wired for thermocouple, RTD, mA, mV, or voltage actuations.



ATTENTION: Make sure you have configured the recorder to accept the desired input type. See "Configuration, Start-up, and Operation of Recorder without Display" on page 44 or "Configuration, Start-up, and Operation of Recorder with Display" on page 49.

Procedure for input wiring

ATTENTION: To avoid damaging the recorder, be sure that you install the power wires into the correct screw terminals as shown in "Power Wiring" on page 36.

1. Turn off the power to the recorder.
2. Loosen the captive screw in the chart plate, open the recorder door, and swing the plate out.
3. Locate terminal block J5 connector on AI card for Pen 1 (refer "Analog Input Wiring" on the next page).
4. Run the input wires through the appropriate conduit hole. Do not bundle them with the power wires.
5. Strip the 1/4-inch maximum of insulation from the end of each wire and form an end to fit under the screw terminal on the removable connection block.
6. Insert the wires under the appropriate screws for the applicable input type. See "Analog Input Wiring" on the next page for label diagram located at the recorder's chart plate for specific input actuation wiring. Tighten the screws with an appropriate torque to secure the input wiring.
7. If the recorder has two pens, repeat Steps 3 through 6 to wire the input for the second pen channel on the J5 connector on the AI card.

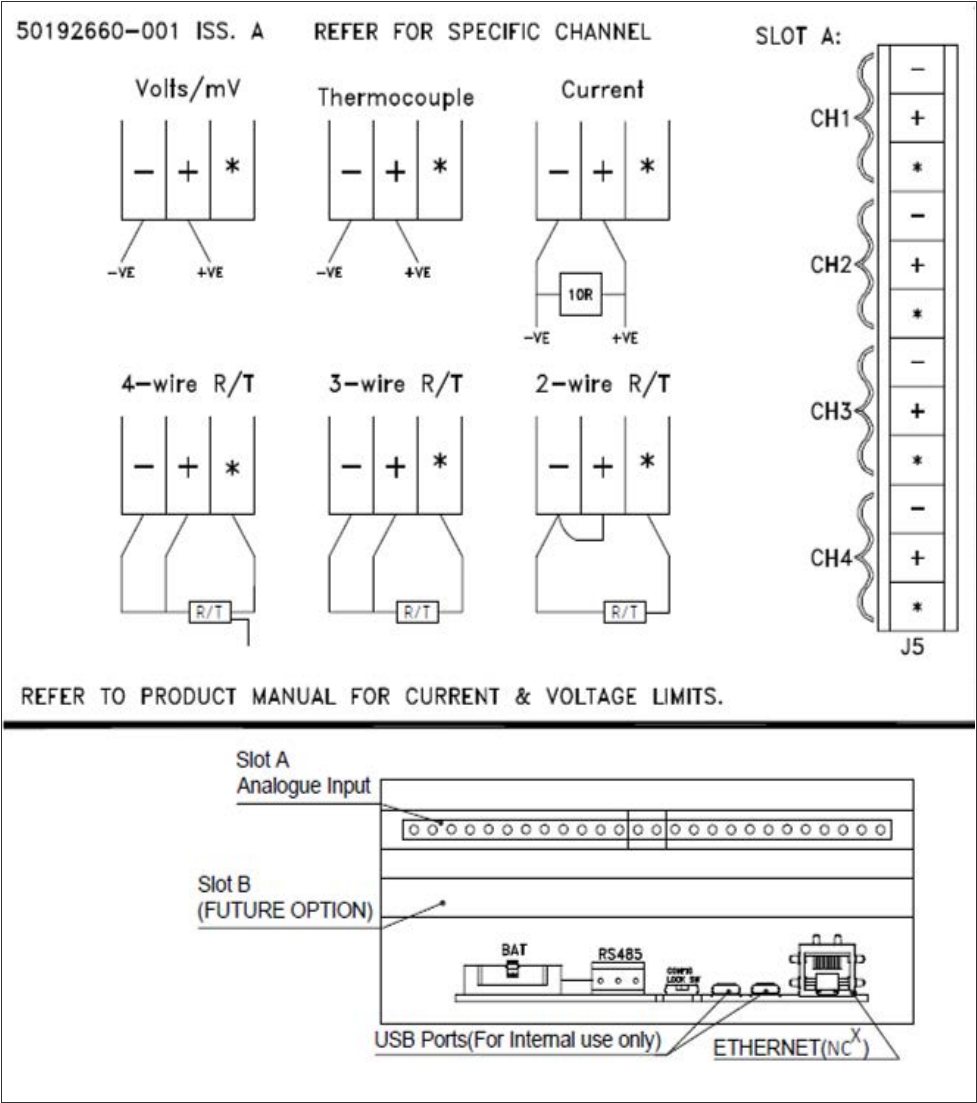


Figure 3-7: Analog Input Wiring

Transmitter Power Supply

The DRC901C supports 24V DC, 100 mA transmitter power supply. The connector is fitted on the power supply board within the recorder. A connection is made through a 2-way connector.

NOTE: The 24V transmitter power supply is not isolated from the recorder, and is not referenced to the ground.

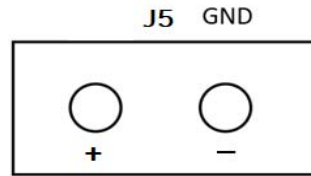


Figure 3-8: DRC901C 24V DC TXP

The recommended wire size for the termination connector is 22-12 AWG (22-14 SWG).

Analogue Input Card

AI Instructions

AI Max Input Voltage: +/- 15V DC

AI Max Common Mode Voltage (+ and -) to Chassis GND: +/- 15V DC

Temperature measurement directly on live parts are not acceptable.

WARNING:

1. Failure to comply with these instructions could result in death or serious injury.
2. Even with the above-restricted AI inputs, transient voltages up to 500 volts can occur on such inputs.

NOTE: For 12-way connector, the torque setting is 0.4 Nm/3.5 lbf-in. Do not overtighten. The recommended wire size for termination connectors is 22-12 AWG (American Wire Gauge), equivalent to 22-14 SWG (Standard Wire Gauge). AWG metric: 0.6426-2.052 mm in diameter, or SWG metric: 0.71-2.03 mm in diameter.

Analogue Input Signal Wiring

CAUTION:
CONTROL UNIT DAMAGE:

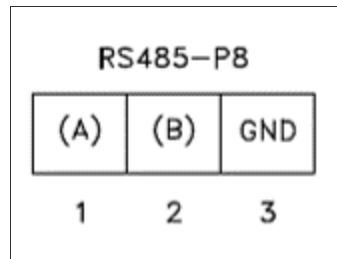
1. Do not apply a hazardous live voltage between + and - pins within a channel. (for example. 15V maximum on voltage ranges, 3V maximum on millivolt ranges). Do not apply a voltage above 1.2 volts to the * pin.
2. Failure to comply with these instructions may result in product damage.

Communication

The recorder hardware supports Modbus RTU communication; the communication link is wired to the terminal block on the CPU board.

Network address, baud rate, and transmitter delay are configurable for models with a display and EasySet app. Models with no display of parameters are configurable using the EasySet app.

Communication Wiring over RS485



1. Open the recorder door. Loosen the captive screw in the chart plate and swing the plate out.
2. Locate the terminal block (P8) on the CPU board as shown in below figure.
3. Run the communication wires through the appropriate conduit hole. Do not bundle them with the power wiring and analogue input wiring.
4. Strip the 1/4-inch maximum of insulation from the end of each wire and form the end to fit under a screw connection.
5. Insert the wires under the appropriate screws. Tighten the screws to secure the wires.

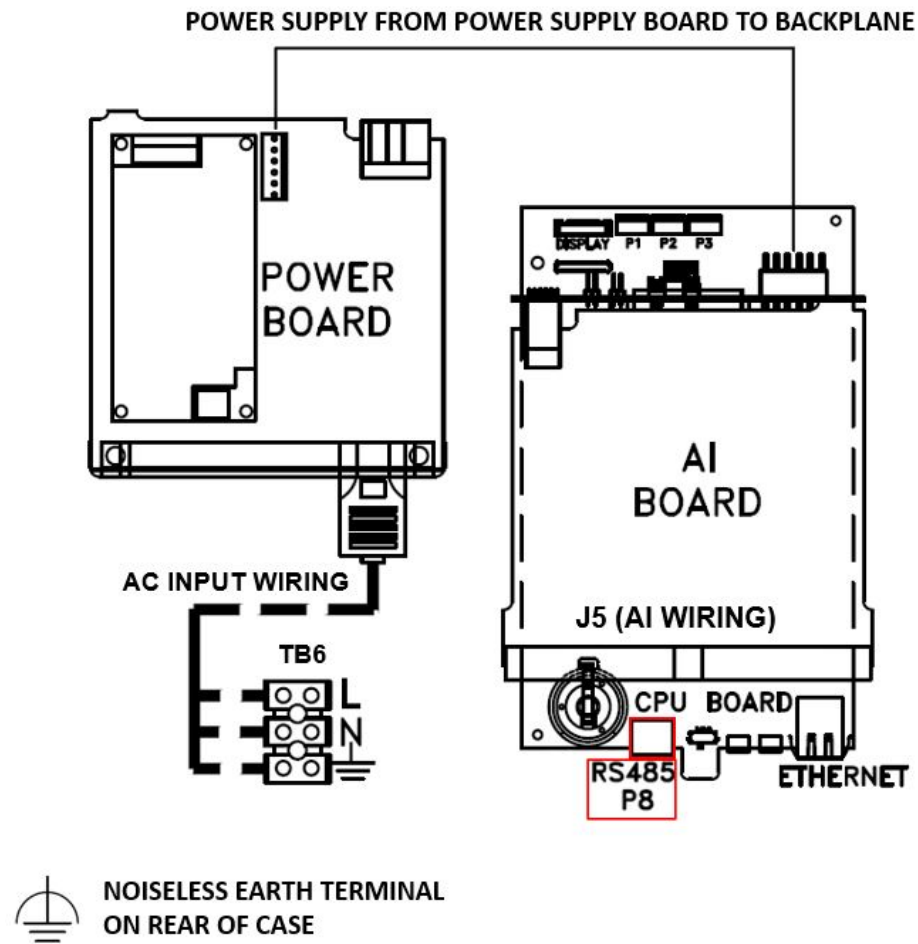


Figure 3-9: Communication Wiring

CONFIGURATION, START-UP, AND OPERATION OF RECORDER WITHOUT DISPLAY

In this section:

<i>Overview</i>	<i>45</i>
<i>Configuration of Recorder without Display</i>	<i>45</i>
<i>Setting up the Recorder for Operation</i>	<i>45</i>
<i>Running the Optional Step Test</i>	<i>46</i>
<i>Start-up</i>	<i>47</i>

Overview

Set up the functionality of the models that do not have a display using EasySet app.

Configuration of Recorder without Display

For information on the configuration of recorder without display, see the chapter "Configuring Using Honeywell EasySet Application" on page 73

NOTE: To enable all the configurations for write operation, ensure:

- The [Config Switch \(S1\)](#) located on the CPU board is turned OFF.
- The Lockout feature is set to "None" in the Honeywell Easyset App.

Setting up the Recorder for Operation

ATTENTION: Start-up and maintenance may require access to hazardous live circuits and should only be performed by qualified service personnel. The unit must be de-energized before servicing.

Never move the pen arms when the unit is operating unless adjusting the pen alignment as described in Troubleshooting Procedures.

WARNING: When the unit is powered, a potentially lethal shock hazard exists at the AC line connections at TB6 on each printed circuit assembly (behind the chart plate). Make sure the unit power is disconnected before starting the procedure, it is required to de-energize the recorder. Failure to observe this precaution can result in exposure to a potentially lethal shock hazard.

Procedure

1. Open the recorder's door.
2. Pull up on the pen lifter to raise the pen(s) from the chart plate. Lift the locking clip on the chart hub.
3. Place the new chart under the pen lifter, pen, and time index, and press it over the chart hub.
4. Turn the chart until the desired time line on the chart is aligned with the time index on the chart plate and Pen 1 before closing the locking clip on the hub. Remove the protective cap from each pen tip, and push down on the lifter to return the pen(s) to the chart.

CAUTION: Do not try to rotate the hub as the motor might get damaged.

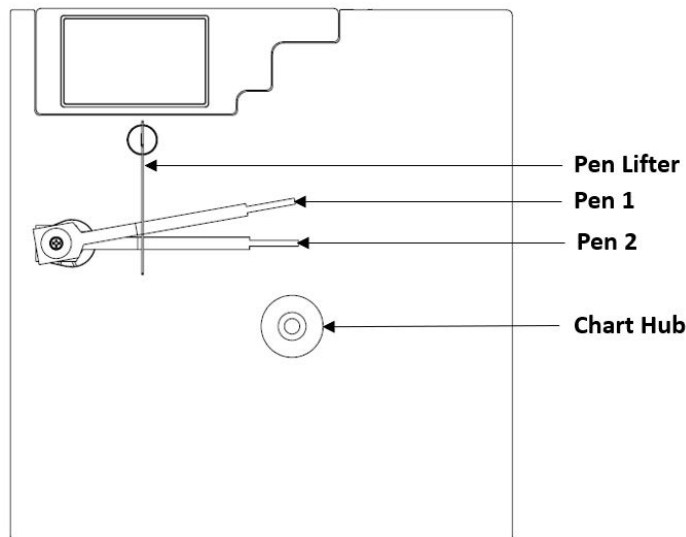


Figure 4-1: Basic Chart Plate Components

Running the Optional Step Test

You can test the recorder's mechanical operation by running a "step test."

This test prints a step pattern, which is independent of any chart settings, with horizontal lines drawn by both pens at each 10% increment on the chart (see "Setting up the Recorder for Operation" on the previous page).

The test will run for one complete revolution of the chart before it returns to normal operation. The chart revolution for the test takes approximately three minutes, regardless of the configured chart speed.

WARNING: When the unit is powered, a potentially lethal shock hazard exists at the AC line connections at TB6 (behind the chart plate). Make sure the unit power is disconnected before starting the procedure. required to de-energize the recorder. Failure to observe this precaution can result in exposure to a potentially lethal shock hazard.

For more information on the procedure of step test using Honeywell EasySet app, see [Step Test](#)..

Start-up

Procedure for Starting up the Recorder

Follow the below steps for preparing the recorder for start-up

1. Open the door.
2. Pull up the pen lifter to raise the pen(s) from the chart plate. Open the hub locking clip.
3. Turn the chart until the desired time line on the chart is aligned with the time index on the chart plate and Pen 1 before closing the locking clip on the hub. Push down on the lifter to return the pen (s) to the chart.

CAUTION: Be careful while inserting the chart, chances are to get impression of the pen. Do not try to rotate the hub as the motor might get damaged.

4. Close the door and apply power.
5. The pen(s) will move into position, and the recorder will start to track the input value.

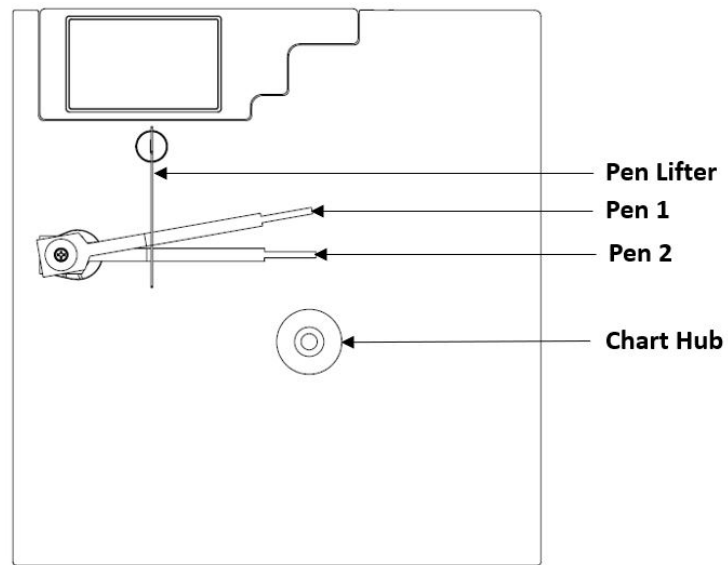


Figure 4-2: Setting Chart Time to Time Index

CONFIGURATION, START-UP, AND OPERATION OF RECORDER WITH DISPLAY

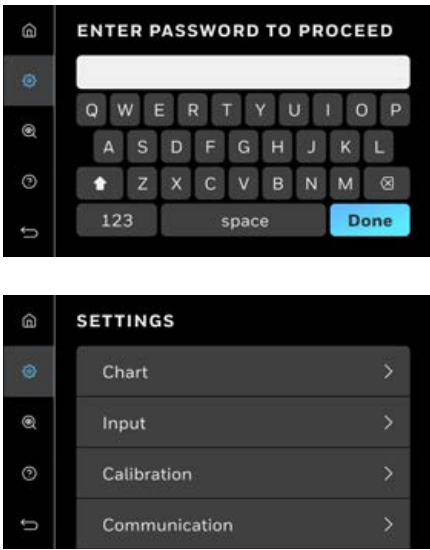
In this section:

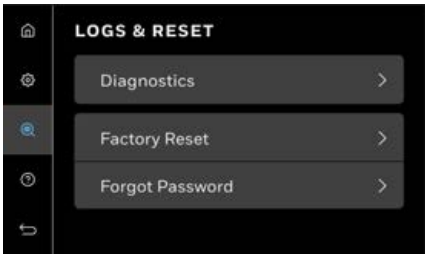
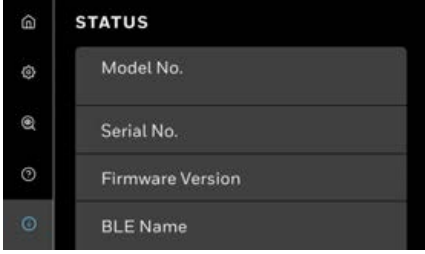
<i>Operator Interface on Recorder with Display</i>	<i>50</i>
<i>Configuration of Recorder with Display</i>	<i>51</i>
<i>Start-up of Recorder with Display</i>	<i>62</i>
<i>Running the Optional Step Test for Recorder with Display</i>	<i>63</i>
<i>Completing Preparation and Start-up</i>	<i>65</i>
<i>Self-Test and Self-Diagnostics</i>	<i>67</i>
<i>Operation of Recorder with Display</i>	<i>70</i>

Operator Interface on Recorder with Display

The DRC901C model with display option, includes a 4-inch capacitive touch display to view real time values, and enables user to assign application-specific values to configuration parameters. This subsection describes the operator interface, using the display to configure the recorder, and procedures for starting up and operating the recorder.

Display

Screen	Description
	The Home screen enables user to edit Pen 1 and Pen 2, and also displays the Bluetooth (when enabled), Totalizer (when enabled, Config Switch (Lock/Unlock indication), Password Policy (Lock/Unlock indication), Alarms (if any), on the Home screen. The password is mandatory to edit Pen 1/ Pen 2 configuration.
	The Settings screen enables user to configure Chart Type, Input Type, Calibration Settings, Communication, Services, Miscellaneous, Step Test, and Lockout features. While navigating to the Settings screen, a prompt appears to enter password. The password is mandatory to view/ modify any settings.

Screen	Description
	The Logs & Reset screen enables user to view diagnostics information, to do factory reset, and provides forgot password feature.
	The Help screen displays the QR code to scan and access the Quick Start Guide (QSG).
	The Status screen displays the general information about the recorder, such as the Model Number, Serial Number, Firmware Version, BLE Name, BLE MAC Address, Slot A Card Version, and Slot B Card Version, Display Version, Battery Voltage, Date and Time, Config CRC, etc.

Configuration of Recorder with Display

NOTE: To enable all the configurations for write operation, ensure:

- The [Config Switch \(S1\)](#) located on the CPU board is turned OFF.
- The Lockout feature is set to “None” in the Display or Easyset App.

The display of DRC901C recorder is used for configuring input and chart parameters, as well as for displaying real-time values during normal operation.

When the recorder is in configuration mode, setup parameters are displayed, grouped by function. Designate site-specific values by selecting them from a list of choices or entering them as numeric values.

If the recorder is equipped with two pens, function parameters can be configured separately for each pen.

Configuration Prompts

Set Up Group	Function Prompts
Home Screen	• Pen 1/ Pen 2: • Pen: To enable/ disable the pen operation using the toggle switch. • Pen Input: To select the required channel for the pen from the list of four available channels. The channel selected shall be according to the AI card wiring. • Channel 1: RTD H <i>[factory setting]</i> • Channel 2: RTD H • Channel 3: RTD H • Channel 4: RTD H • Zero: Enter a value that corresponds with the chart low range value for the pen. <i>[factory setting: 730]</i> • Span: Enter a value that corresponds with the chart high range value for the pen. <i>[factory setting: 780]</i> • Pen Alignment: The Pen Alignment screen appears. To know about the pen alignment procedure, refer to the Pen Alignment Instruction sheet (DRCDOC-X006- en-100A). • Totalizer • Enable/ Disable: To enable/ disable the totalizer function using the toggle switch. The text "TOT" appears on the Display (Home screen), once enabled.

Set Up Group	Function Prompts
	• Rate Of Integration: This parameter is used to select the desired rate of integration. • Seconds: EU (Engineering Units) per second. <i>[factory setting]</i> • Minute: EU per minute • Hour: EU per hour • Day: EU per day • EU Of Input: Engineering Units Of Input Signal • None: Disables EU conversions. <i>[factory setting]</i> • CuFt: Cubic Feet • GAL: Gallons • CuMT: Cubic Meters • EU Of Totalizer: Engineering Units Of Totalized Value. • None: Disables EU conversions. <i>[factory setting]</i> • CuFt: Cubic Feet • GAL: Gallons • CuMT: Cubic Meters • LITR: Liters • AcFt: Acre-Feet • HMTR: Hectare-Meters • TOT Decimal Places: This parameter is used to select the number of decimal places of the displayed TOTAL value. This selection will be overridden if the SCALER selection is not equal to 1. • 8888 <i>[factory setting]</i> • 888.8

Set Up Group	Function Prompts
	• 88.88 • TOT Scale Factor: The totalizer displays the current totalized flow value (up to six digits maximum). The scaling factor selected here is applied to the totalized value when it is displayed. • 1 <i>[factory setting]</i> • 10 • 100 • 1000 • 1E4 • 1E5 • 1E6 • 1E7 • 1E8 • Low Cutoff Value: Enter the Input % of range below which the totalizer stops accumulating. <i>[factory setting: 0]</i> • Reset Value: To reset the current totalizer value to zero. This action cannot be undone. • Alarm 1/ Alarm 2 • Type • None: To set no alarm. <i>[factory setting]</i> • Input PV: To set Input PV type alarm. • State • High <i>[factory setting]</i>: Enter the upper threshold value for the alarm. If the Input PV value exceeds above this value along with the hysteresis, an alarm triggers and an alarm symbol appears on the Display and as an indication.

Set Up Group	Function Prompts
	• Low: Enter the lower threshold value for the alarm. If the Input PV value goes below this value along with the hysteresis, an alarm triggers and an alarm symbol appears on the Display and as an indication. • Hysteresis: Enter the value for "Hysteresis" using the keypad appeared on the Display. The hysteresis value avoids false alarms that can occur when the Input PV reaches near the alarm threshold, i.e., Alarm High or Alarm Low. For example, If a Alarm Low is set to trigger at 100°C, and a hysteresis value of 3°C is set, then the alarm will remain active until the temperature drops below 97°C, even if it briefly returns to 100°C. <i>[factory setting: 0.0]</i>
Settings	• Chart: • Type: • Linear <i>[factory setting]:</i> Select this option when using the linear chart type for your recorder. The user can recognize the chart type based on the chart part number. • Non Linear: Select this option when using the non-linear chart type for your recorder. The user can recognize the chart type based on the chart part number. • Duration: Select the duration the recorder will take to drive the chart one complete revolution. • 8 Hours • 12 Hours • 24 Hours <i>[factory setting]</i> • 1 Week

Set Up Group	Function Prompts
	• Custom: The custom value can be entered in Hours Per Revolution. • Hours Per Revolution: Enter the required duration for revolution which is not listed in the available options. <i>[factory setting: 1]</i> • Chart Rotation: • Start <i>[factory setting]</i>: Starts the chart rotation. • Stop: Stops the chart rotation. • Input: • Input 1/Input 2/Input 3/Input 4: Shows the available input channels to the recorder. The DRC901C models supports any two input channels at a time. • Sensor Type: Select the sensor type you want to configure for Input 1 and Input 2. • TC: • B, E High, E Low, J High, J Low, K High, K Low, NiNiMo, Nicrosil - Nil, R, S, T High, T Low, W. • RTD: • 100 H <i>[factory setting]</i>, 100 L, 100 T. • Milliamps¹: • 4 to 20, 0 to 20. • Millivolts¹: • 0 to 10, 0 to 100, 0 to 200. • Volts¹: • 0 to 1, 0 to 2, 1 to 5, 0 to 5, 0 to 10, 2 to

¹The range is "-999 to 9999".

Set Up Group	Function Prompts
	10. • Sensor Sub Type: The options displayed here are based on the Sensor Type selection. <i>[factory setting: 100 H (alpha=0.00385)]</i> • Zero: Enter the Input Low. It is not configurable for non-linear inputs. <i>[factory setting: -300]</i> • Span: Enter the Input High. It is not configurable for non-linear inputs. <i>[factory setting: 900]</i> • Input Bias: Used to compensate the input for drift of an input value due to deterioration of a sensor, or some other cause; enter the value you want on the input. The input bias can be configured within the range of -999 to 9999. <i>[factory setting: 0.0]</i> • Filter: A software digital filter is provided for the input to smooth the input signal. You can configure the first order lag time constant from 1 to 120 seconds. If you do not want filtering, enter "0". <i>[factory setting: 0]</i> • Burnout: Enter the range for the Burnout. Burnout typically happens when there is an input fail. • None <i>[factory setting]:</i> In this case, the Pen stops after moving to a nearby scale division. • Upscale: It will make the indicated PV signal go to over-range value when input fails. • Downscale: It will make the indicated PV signal go to under-range value when input

Set Up Group	Function Prompts
	fails. • CJ Compensation¹: • Internal Automatic [<i>factory setting</i>]: It includes the sum of AI card temperature and room temperature. • Ext. 0°C: Includes only the AI Card temperature, and considers room temp as "0". • Transmitter Type: • Linear [<i>factory setting</i>]: Use this parameter to specify whether the input should be used as the PV without characterization (linear). • Square Root: Use this parameter to specify whether the square root of the input should be used as the PV. For example: Suppose the linear input range is 0 to 5000 and the input type is 0 to 5 volts. Then if input = 2.5 V = 50 %, $\sqrt{.50} = .7071 = 70.71\%$ $.7071 \times 5000 = 3535 = PV$ • Decimal: This selection determines where the decimal point appears in the display. • None: XXXX • One Place [<i>factory setting</i>]: XXX.X • Two Places: XX.XX • Three Places: X.XXX • Units: This selection will be indicated on the PV display. • No units

¹Only apply for the sensor type "TC".

Set Up Group	Function Prompts
	• Degrees Fahrenheit <i>[factory setting]</i> • Degrees Celsius • Calibration¹: • Input 1/Input 2/Input 3/Input 4: • Calibration Type: • Factory <i>[factory setting]</i>: The calibration done as per the factory settings. • Field: The calibration done as per the field or customized inputs. • Calibrate Input: To proceed further with the calibration process. First zero calibration starts and then span calibration starts. • Communication: • Bluetooth: To enable/disable Bluetooth connection. • RS-485 • Baud Rate: Specify the baud rate used by all devices on the network. • 600 • 1200 • 2400 • 4800 • 9600 <i>[factory setting]</i> • 19200 • Transmitter Delay: Specify the minimum delay between the end of a received message and the start of the response message.

¹After the calibration is successful, the recorder restarts.

Set Up Group	Function Prompts
	• None <i>[factory setting]</i> • 10 ms • 20 ms • 30 ms • 40 ms • 50 ms • Double Byte Order: Determines Floating Point Byte order in Modbus queries. • FP B: Big Endian <i>[factory setting]</i> • FP BB: Big Endian – Byte Swapped • FP L: Little Endian • FP LB: Little Endian – Byte Swapped • Services: • Modbus: • Slave: To enable/disable slave. • ID: Enter Slave ID <i>[factory setting: 2]</i> • Port: • RS-485 • Miscellaneous: • Display: • Brightness: Increase/ Decrease the brightness of the display. • Turn Off Display After: • None <i>[factory setting]</i> • 30 sec • 1 min

Set Up Group	Function Prompts
	• Step Test: To test the recorder's mechanical operation. • Pen Selection: • Pen 1 <i>[factory setting]</i> • Pen 2 • Start: To start the pen movement. • Stop: To stop the pen movement. • Security • Password: To enable/ disable the password function on the Display. • Change Password: Enter the old password, and then new password (twice). • Lockout: Limits the access to one or more types of set up groups. • None <i>[factory setting]</i>: All groups are available for read/write. • Cal: Locks out calibration and pen alignment groups; they will be in read-only mode. All other groups are available for read/write. • Full: All configuration groups (except lock) are read only.
Logs & Reset	• Diagnostic: Shows the recorder's diagnostic information or logs. • Factory Reset: To reset the recorder with the default factory configurations. • Forgot Password: The user needs to contact the technical support team and share the serial number of the recorder (i.e., share the last six digit of the serial number on the label), along with the date by when the password needs to be created. The technical support team generates a temporary password that is valid for one day. The user must

Set Up Group	Function Prompts
	then change their password using this temporary password within that day.
Help	Scan the QR code to access the product page of the DRC901C.
Back	Tap the Back icon to navigate one step back.

Start-up of Recorder with Display

ATTENTION: Start-up and maintenance may require access to hazardous live circuits and should only be performed by qualified service personnel. required to de-energize the unit before servicing.

Preparing the Recorder for Start-up

Never move the pen arms when the unit is operating unless adjusting the pen alignment.

WARNING: When the unit is powered a potentially lethal shock hazard exists at the AC line connections at TB6 (behind the chart plate). Make sure the unit power is disconnected before starting the procedure. required to de-energize the recorder. Failure to observe this precaution can result in exposure to a potentially lethal shock hazard.

Start-up Procedure

1. Open the door.
2. Pull up on the pen lifter to raise the pen(s) from the chart plate and remove the protective cap from each pen tip. Lift the locking clip on the chart hub.
3. Place the new chart under the pen lifter, pen, and time index, and press it over the chart hub.
4. Turn the chart until the desired time line on the chart is aligned with the time index on the chart plate and Pen 1 before closing the locking clip on the hub. Push down on the lifter to return the pen (s) to the chart.

CAUTION: Do not try to rotate the hub, as the motor might get damaged.

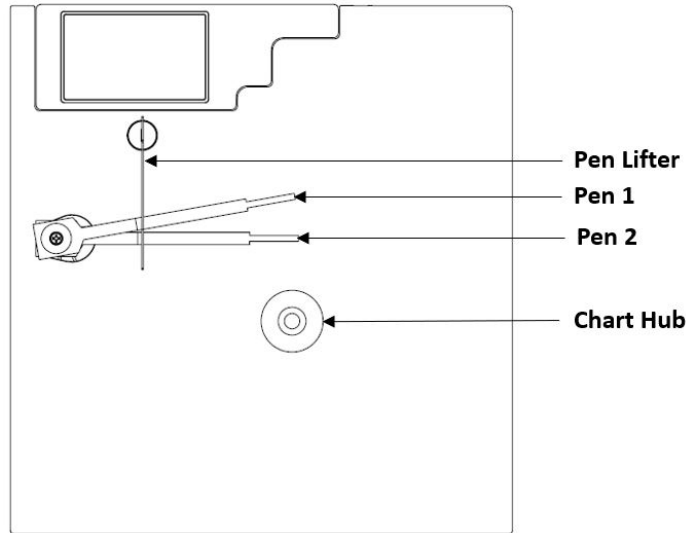


Figure 5-1: Basic Chart Plate Components

Running the Optional Step Test for Recorder with Display

You can test the recorder's mechanical operation by running a "step test."

This test prints a step pattern, which is independent of any chart settings, with horizontal lines drawn by both pens at each 10% increment on the chart (see "Typical Step Test Chart Patterns" on page 65).

The test will run for one complete revolution of the chart before it returns to normal operation. The chart revolution for the test takes approximately three minutes, regardless of the configured chart speed.

WARNING: When the unit is powered, a potentially lethal shock hazard exists at the AC line connections at TB6 (below the chart plate). Make sure the unit power is disconnected before starting the procedure. The recorder must be de-energized to de-energize the recorder. Failure to observe this precaution can result in exposure to a potentially lethal shock hazard.

Procedure for Running the Step Test

1. Make sure the cap is removed from the tip of each pen and the chart is installed.
2. Make sure the chart is placed and properly aligned in the recorder.
3. Turn ON the power to the recorder.
4. On the Display, go to the **Settings** group > **Step Test**. Configure the Step Test in the following manner:
 - Pen Selection: Select the required Pen for which you want to perform the step test, i.e. either Pen 1 or Pen 2.
 - Start: Select Start function to start the step test.
 - Stop: Not recommended to select this Stop function during step test, unless it is required.
5. The recorder will begin the test. The duration of the test is approximately 3 minutes.
6. When the test has been completed, the pens will move away from the test position. The below figure shows the typical pattern generated by the recorder in the step test.

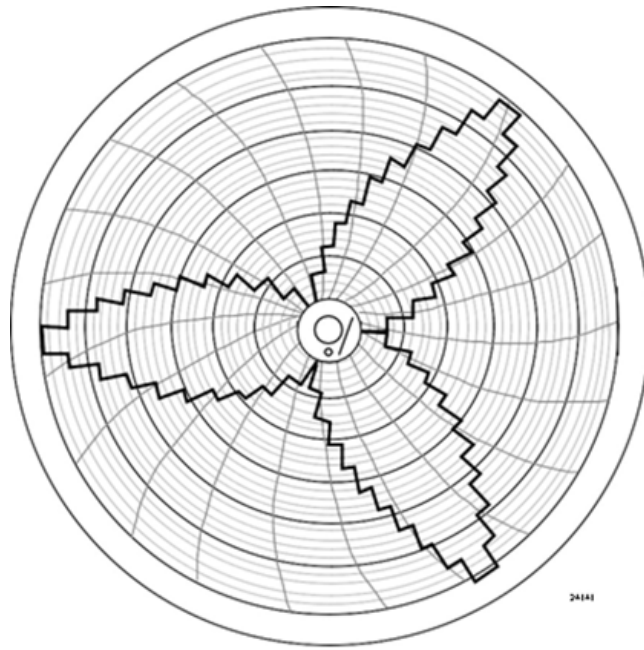


Figure 5-2: Typical Step Test Chart Patterns

7. At the conclusion of the test, turn OFF the power to the recorder.

Completing Preparation and Start-up

1. Open the door.
2. Pull up the pen lifter to raise the pen(s) from the chart plate. Open the hub locking clip.
3. Turn the chart until the desired time line on the chart is aligned with the time index on the chart plate and Pen 1 before closing the locking clip on the hub. Push down on the lifter to return the pen(s) to the chart.

CAUTION: Do not try to rotate the hub as the motor might get damaged.

4. Close the door and apply power.
5. The pen(s) will move into position, and the recorder pen will start to track the value specified using the parameter in the pen set-up group.

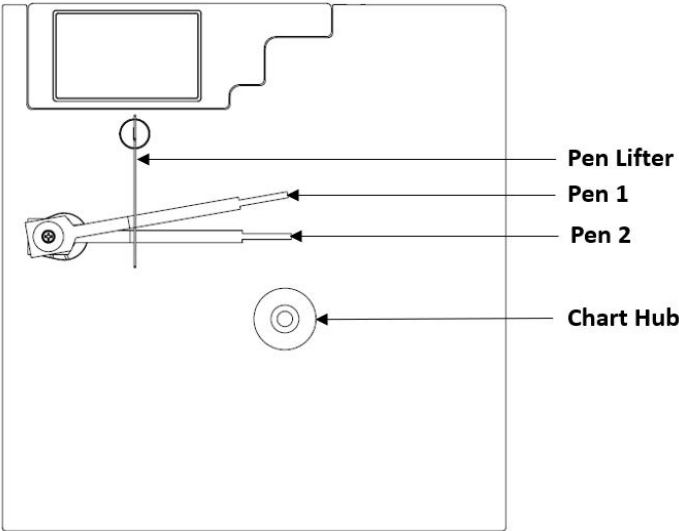


Figure 5-3: Setting Chart Time to Time Index

Self-Test and Self-Diagnostics

When the recorder is powered up, the self-tests and self-diagnostics are run by the firmware automatically.

Self-Tests

The DRC901C recorder runs self-tests at power-up. The following table lists the set of self tests performed in the recorder while starting up, and their corresponding success/failure messages that appear on the display.

Self-Test	Success Message	Failure Message*
AI CARD SELF TEST	AI CARD PASS	AI CARD FAIL
DEBUG PORT TEST	DBG PORT PASS	DBG PORT FAIL
RS232 PORT TEST	RS232 PORT PASS	RS232 PORT FAIL
BLE PORT SELF TEST	BLE PORT PASS	BLE PORT FAIL
RS485 PORT SELF TEST	RS485 PORT PASS	RS485 PORT FAIL
LCD PORT SELF TEST (IF DISPLAY PRESENT)	LCD PORT PASS	LCD PORT PASS
RTC SELF TEST	RTC PASS	RTC FAILED
TEMP I2C SELF TEST	TEMP TEST PASS	TEMP TEST FAIL
GPIO SELF TEST	PEN1 GPIOs PASS	PEN1 GPIOs FAIL
	PEN2 GPIOs PASS	PEN2 GPIOs FAIL
	CHART GPIOs PASS	CHART GPIOs FAIL
FRAM SELF TEST	FRAM TEST PASS	FRAMTST

Self-Test	Success Message	Failure Message*
RNBD BLE SELF TEST	BLE PASSED	BLE FAILED
*In case of failed test, contact Honeywell technical support ..		

Self-Diagnostics

The DRC901C recorder runs self-diagnostics at power-up and in the background during normal operation. Problems are reported by error messages on the display when they are present.

Display Indication	Error Name	Type of Test	Reason for Failure	How to Correct the Problem?
INP1FL	Burnout pen 1	Background	Recorder detects an input failure, i.e. input mapped to pen 1.	1. Make sure the range and actuation are configured correctly. 2. Check the input source.
INP2FL	Burnout pen 2	Background	Recorder detects an input failure, i.e. input mapped to pen 2.	1. Make sure the range and actuation are configured correctly. 2. Check the input source.
INP1RNG	Input out of range pen 1	Background	Input 1 out of range. The process input is outside the range limits.	1. Make sure the range and actuation are configured correctly. 2. Check the input source.
INP2RNG	Input out of range pen 2	Background	Input 2 out of range. The process input is	1. Make sure the range and actuation are configured

Display Indication	Error Name	Type of Test	Reason for Failure	How to Correct the Problem?
			outside the range limits.	correctly. 2. Check the input source.
CALERR	User calibration fail	Background	The working calibration constants in the recorder are in error or corrupted in memory.	1. Use the procedure to switch between the set of calibration constants being used (factory or field) to the other type. 2. Exit calibration mode. 3. Next go back into calibration selection and change back to the original type of constants used (factory or field). This will overwrite the corrupted values in memory.
CONFL	Configuration fail	Background	Configuration data is in error.	1. Check all the setup and configuration parameter values for accuracy. 2. Make a change to the configuration, and then exit the configuration.
FRAMTST	FRAM write fail	Power-up Background	Unable to write to non-volatile memory, i.e. anytime you change a parameter, it is not accepted, and you will see FRMTST.	1. Try to change something in configuration. 2. Cycle the power. 3. If problem persists, replace the CPU Board.

Operation of Recorder with Display

Monitoring the Recorder

Overview

In addition to the historical chart record, you can monitor the recorder's indicators and displays to see real time values of inputs.

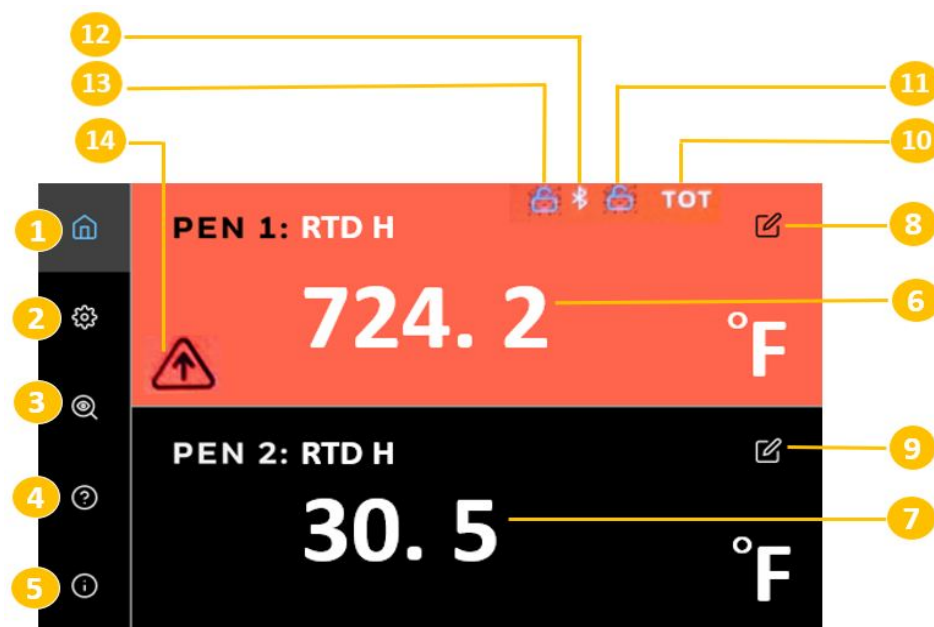
Set up values can also be viewed. Depending on the lockout status, configuration values may also be changed.

While power ON, the recorder runs self-diagnostics on the recorder for the pens. If a test is failed, an [error message](#) will be displayed.

Operators Interface

The user can see the process and the recorder's response with the help of indications on the display.

The indicators and displays on the operator interface lets the user to see what is happening to your process and how the recorder is responding. The below figure is a view of the operator interface/Display/HMI. For description of the displays and indicators, see the section "Display" on page 50.



Item Reference	Description
1	Main menu or Home page
2	Settings menu
3	Logs & Reset menu
4	Help menu
5	Information menu
6	Displays Input PV value for Pen 1

Item Reference	Description
7	Displays Input PV value for Pen 2
8	Edit option for Pen 1
9	Edit option for Pen 2
10	Totalizer • Totalizer enabled: TOT text appears. • Totalizer disabled: TOT text do not appears.
11	Config Switch Status: • Switch turned ON: Lock icon appears. • Switch turned OFF: Unlock icon appears.
12	Bluetooth: • Bluetooth enabled: Bluetooth icon appears. • Bluetooth disabled: Bluetooth icon do not appears.
13	Password Policy: • After session time-out: Lock icon appears. • After entering password: Unlock icon appears.
14	Input PV Alarm: • Alarm High: When the inputs PV value exceeds the defined upper limit, a symbol with upward arrow appears. • Alarm Low: When the inputs PV value reduces below the defined lower limit, a symbol with downward arrow appears.

CONFIGURING USING HONEYWELL EASYSET APPLICATION

In this section:

<i>Overview</i>	74
<i>Connecting to EasySet app</i>	74
<i>Dashboards</i>	86
<i>Upload Configuration</i>	87
<i>Offline Configuration</i>	91
<i>Download</i>	100
<i>Online Configuration</i>	101
<i>Maintenance Data</i>	107
<i>Firmware Update through EasySet app</i>	109
<i>Settings</i>	116
<i>Logs</i>	129
<i>About EasySet</i>	131

Overview

The BLE communication permits configuration of the recorder and monitoring of process variables using the Honeywell EasySet app.

The model with display can be configured using the display and Honeywell EasySet app. The model without display can be configured using only the Honeywell EasySet app.

Connecting to EasySet app

Follow the below instructions to connect to the Honeywell EasySet app:

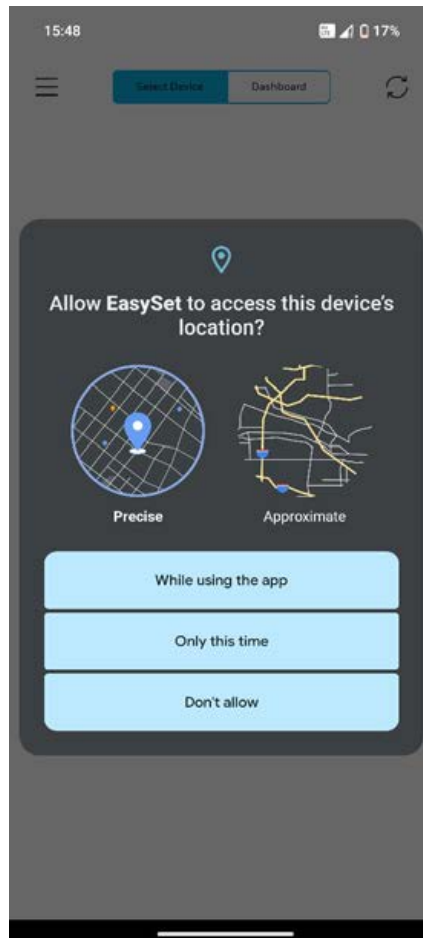
Prerequisite:

- The smartphone/tablet on which you are installing the Honeywell EasySet app must support:
 - Android version 11 or higher.
 - BLE 5.2 or higher.
- Enable bluetooth and location access on the smartphone/tablet.

1. Open the EasySet app. The Bluetooth permission pop-up appears.

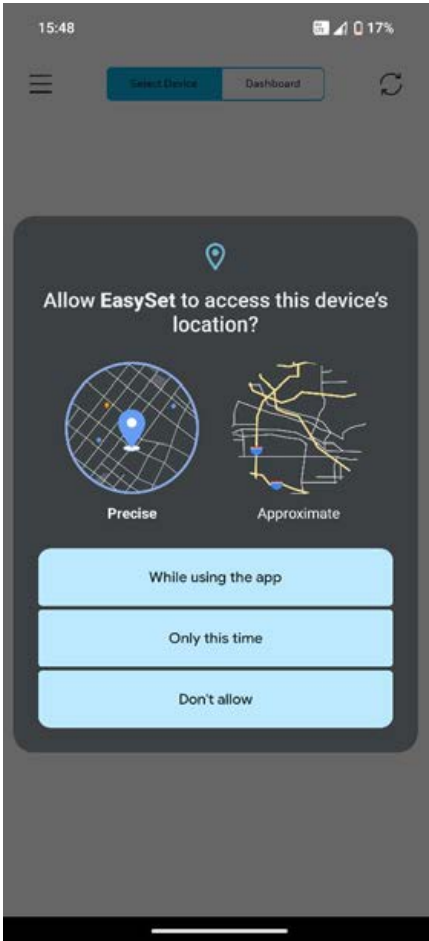
NOTE: In Android device, if the EasySet app opened for the first time:

- In Android version 11: User needs to allow location access permission.

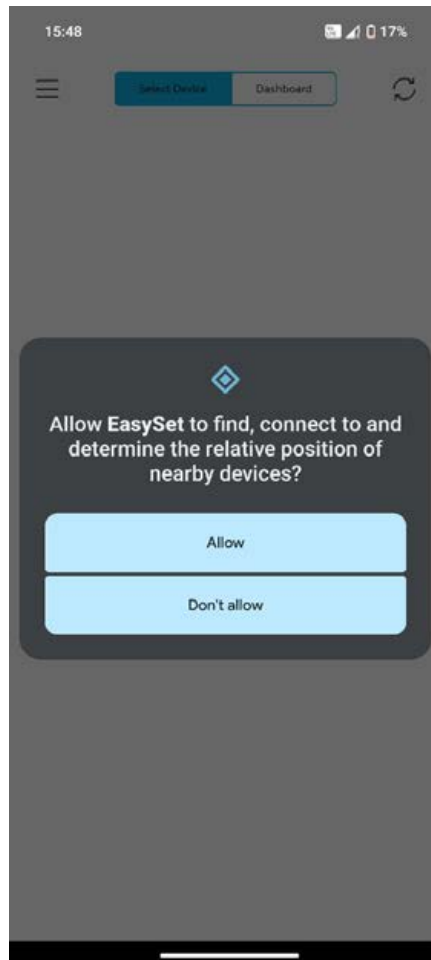


- From Android version 12 or higher: User needs to allow:

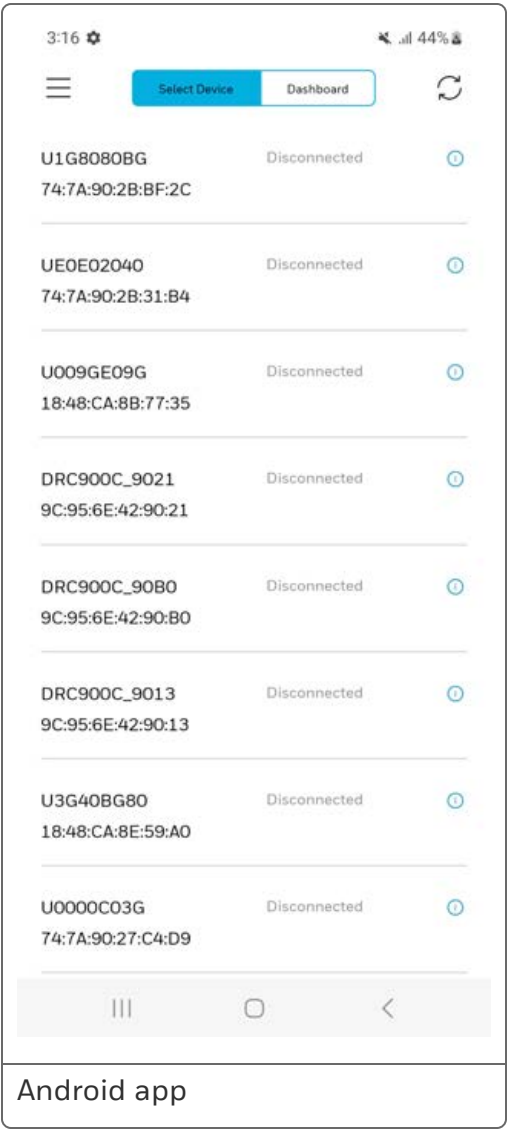
◦ Location access permission.



- To find, connect to and determine the relative position of nearby devices, in order to choose the precise location to scan the recorder.



2. Perform the following:
 - In Android devices, tap **Allow**.
3. Go to the **Select Device**, all available recorders are detected and displayed with Bluetooth IDs.

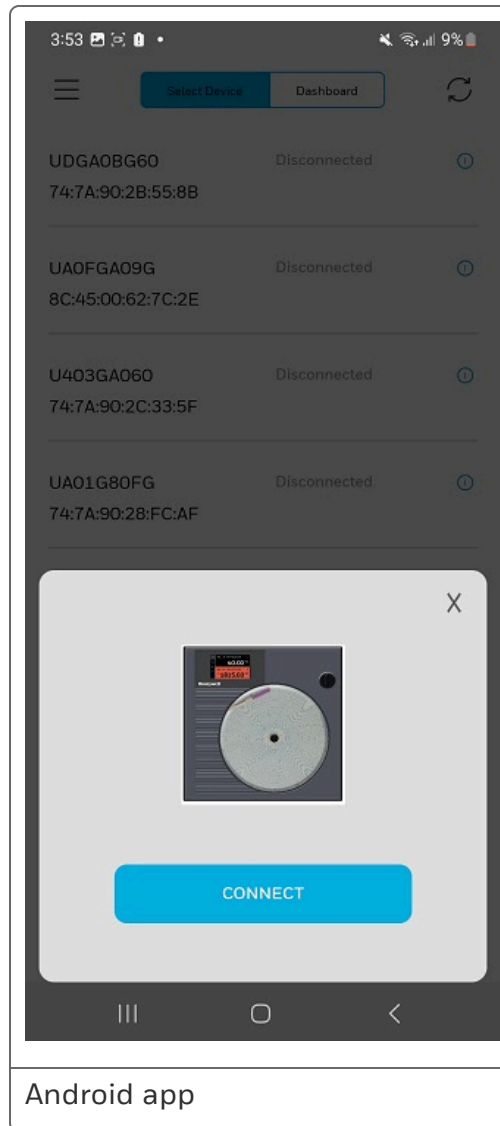


Android app

NOTE: If the required recorder is not listed, ensure the recorder is not connected to any other third-party Bluetooth application. Tap the **Refresh** icon to scan the available recorders.

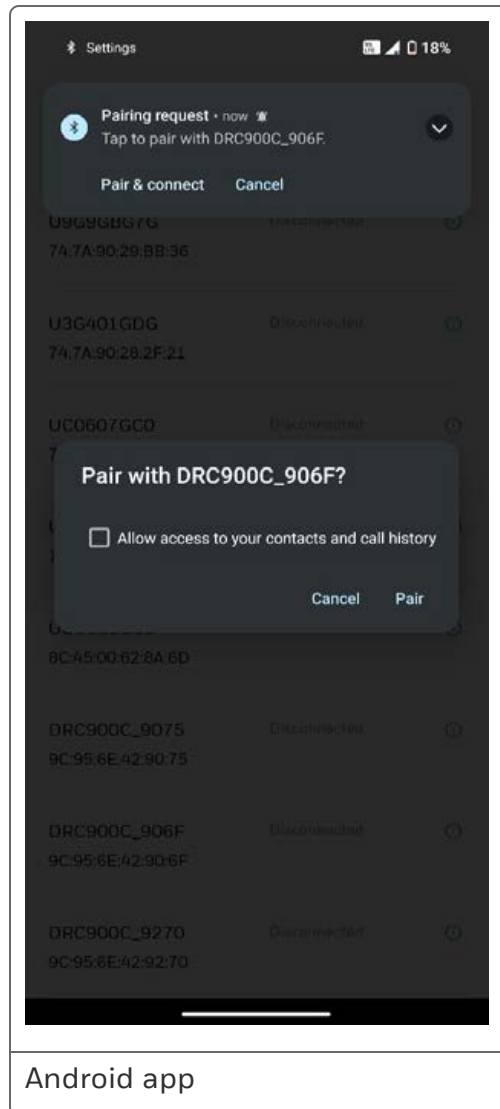
- 4. Select the required recorder to connect, the connect dialog appears.

Tap **CONNECT**.



5. The Bluetooth pairing request dialog appears.

Tap **Pair**.



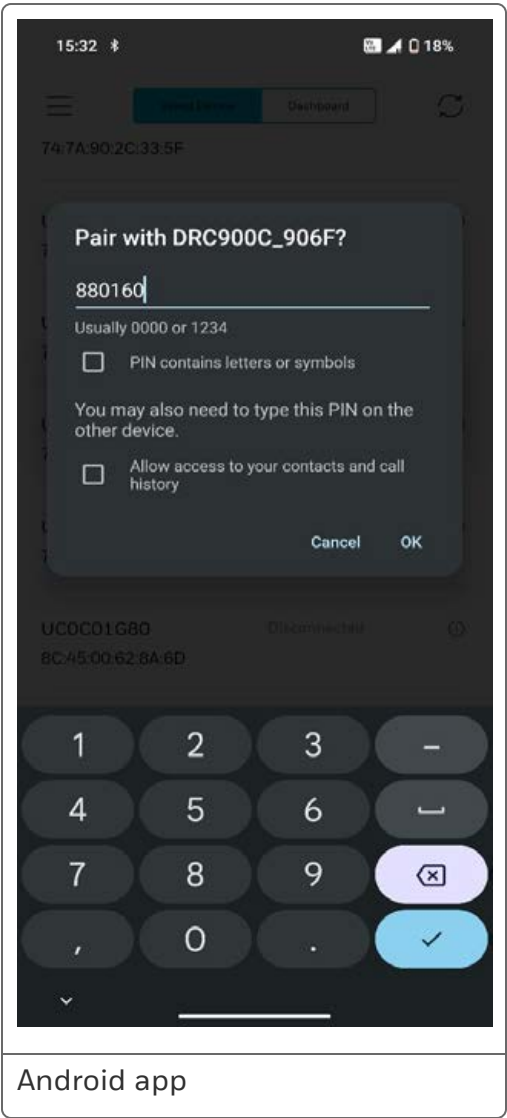
NOTE: For connecting the recorder for the first time, the smartphone/tablet prompts a pairing request. Please note that the number of such pairing requests prompted on the smartphone/tablet is dependent on the make of the particular smartphone/tablet. For example, while pairing the recorder using Lenovo/Motorola make smartphones/tablets, it has been realized that the pairing requests have been prompted up to three times, and the user has to tap Pair each time till the pairing code dialog appears.

6. The pairing code dialog appears. Enter the recorder's pairing code:

- For recorder with display: The pairing code appears on the display.
- For recorder without display: The default pairing code is "123456".

Then, tap **OK**.

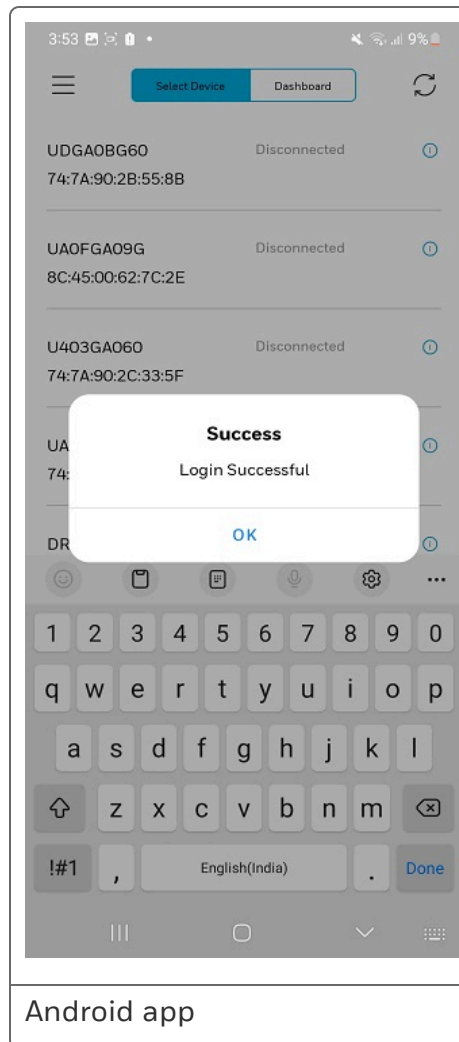
NOTE: If the user taps the cancel option while pairing with recorder, at that point the recorder will still be in active state with the smartphone/tablet for 30 seconds. To re-pair with the recorder, user needs to wait for 30 seconds. Or, if the user taps the cancel option, and then taps on Refresh button, then the recorder name will disappear from the list.



Android app

NOTE: If in case, the pairing request does not appear on the smartphone/tablet, the user can check the smartphone's/tablet's notifications.

7. After the successful Bluetooth pairing. The EasySet app prompts user to enter the password:
- If the user has already created the password: Enter the password set for the recorder in the EasySet app.
 - If the entered password is valid, a success message appears saying "Login Successful". Tap **OK**.
 - If the entered password is not valid, a failure message appears, saying "Login failed". Check the recorder password and try again.



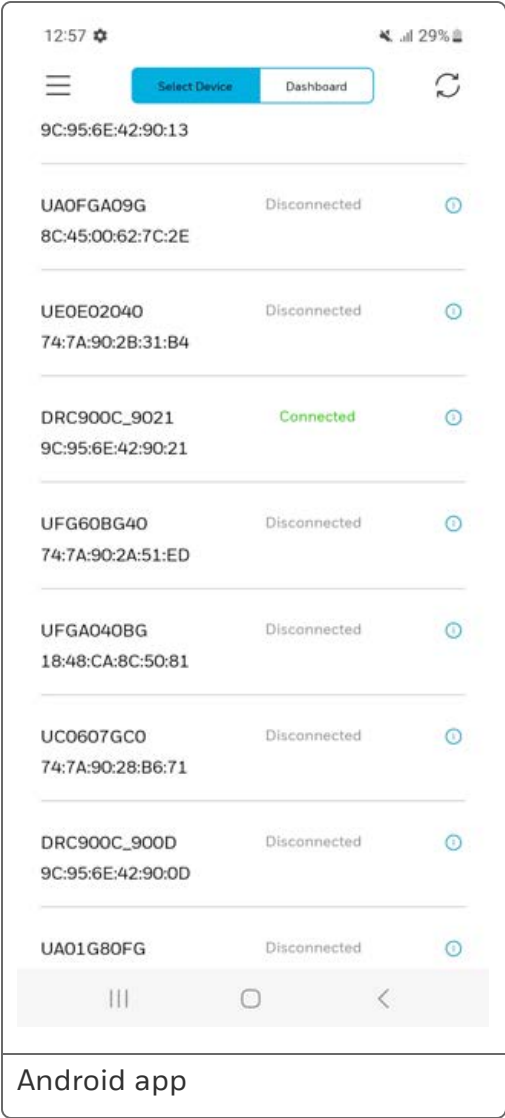
- Or, when the user logs-in for the first time, the app will prompt user to create a password in accordance with the [Honeywell password policy](#).

NOTE:

The secure password policy guidelines are as follows:

- a. Password must be between 8 to 16 alphanumeric characters in length.
- b. Password must include at least one uppercase letter, one lowercase letter, one number, and one special character.
- c. Password must not have more than two identical consecutive characters (e.g., AAA222qqq***).

- Or, in case the user forgets the password: Tap **Forgot Password**, and the EasySet app/ HMI displays the serial number of the recorder.
 - The user needs to contact the [technical support team](#) and share the serial number of the recorder (i.e., share the last six digit of the serial number on the label), along with the date by when the password needs to be created.
 - Based on the above information, the technical support team generates a temporary password that is valid for one day. The user must then change their password using this temporary password within that day.
8. The desired recorder is now connected to the EasySet app and status is also updated against the recorder as "Connected".



ATTENTION: Once the recorder is connected to the EasySet app through Bluetooth, do not disable or turn OFF the Bluetooth function in the recorder and smartphone/tablet.

NOTE:

The user must disconnect the current recorder from the EasySet app before connecting to the new recorder. If the Android app is unable to connect to the recorder after retrying, user must turn ON and OFF their smartphone's/tablet's Bluetooth.

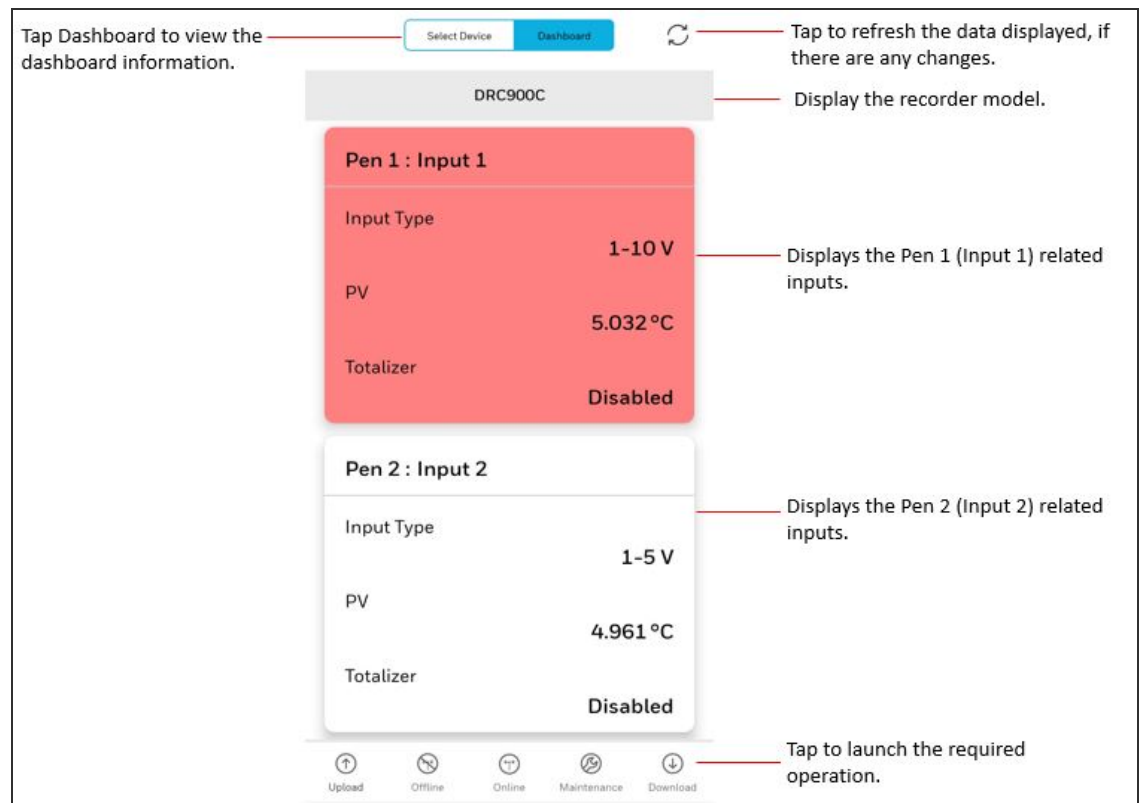
NOTE:

To unpair the recorder:

1. Go to the Smartphone's/tablet's **Settings > Bluetooth > Connected devices**.
2. Select the recorder you want to unpair, and tap **Unpair** or **Forget**.

Dashboards

The dashboard shows the basic information about the recorder's configuration, such as the input type, values, and totalizer for the Pen 1 and Pen 2. User can launch the required operation from the dashboard screen.



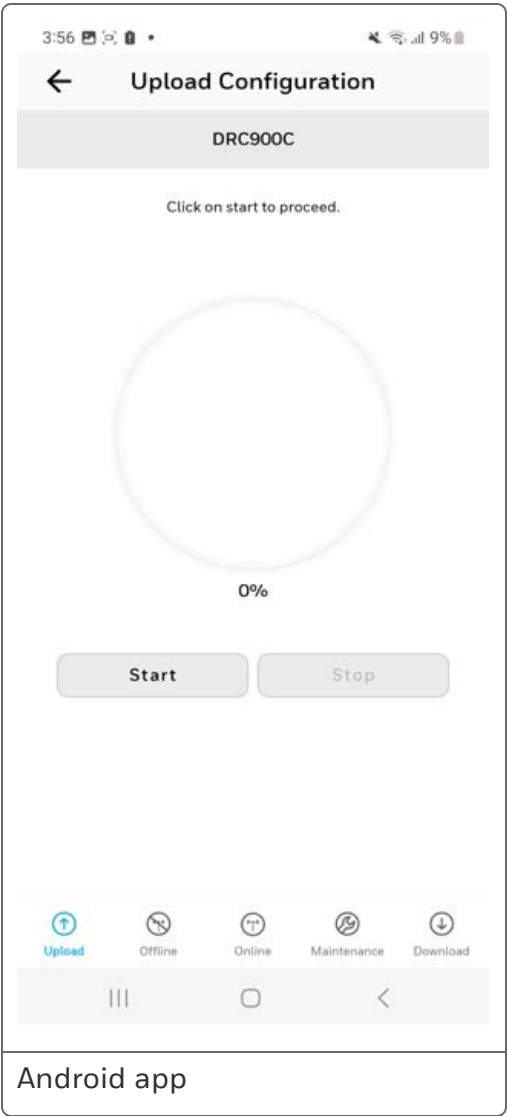
Upload Configuration

Using Upload Configuration user can upload the recorder's configuration into the EasySet app, where user can save the current configuration of recorder, so that it can be viewed/edited in the "Offline Configuration" on page 91.

1. Tap **Dashboard**. The dashboard page appears.

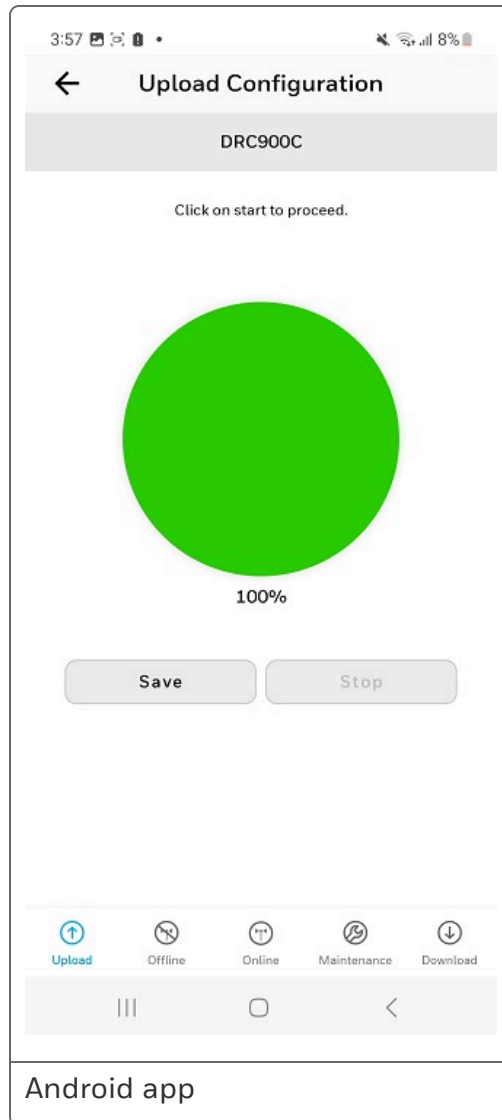
NOTE: Only after the dashboard is completely loaded, the user should navigate to other tabs like Upload, Online, Maintenance, and Download.

2. Tap **Upload**. The **Upload Configuration** page appears.



Android app

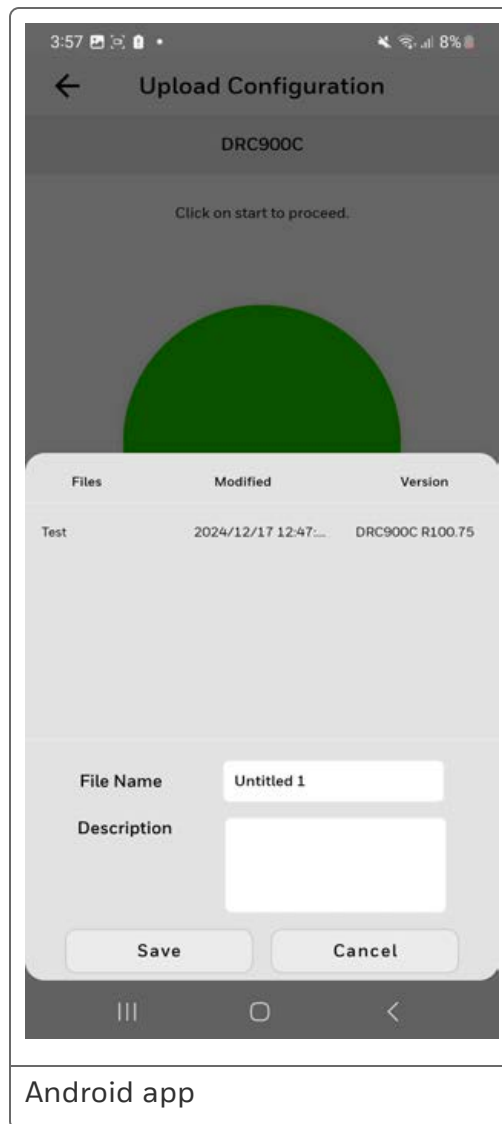
- 3. Tap **Start** to begin upload. The status of upload (% complete) is shown.



NOTE: To terminate upload, tap **Stop**.

If upload is successful, Users can save the configuration.

4. Tap **Save**, and enter the **File Name** and **Description**.



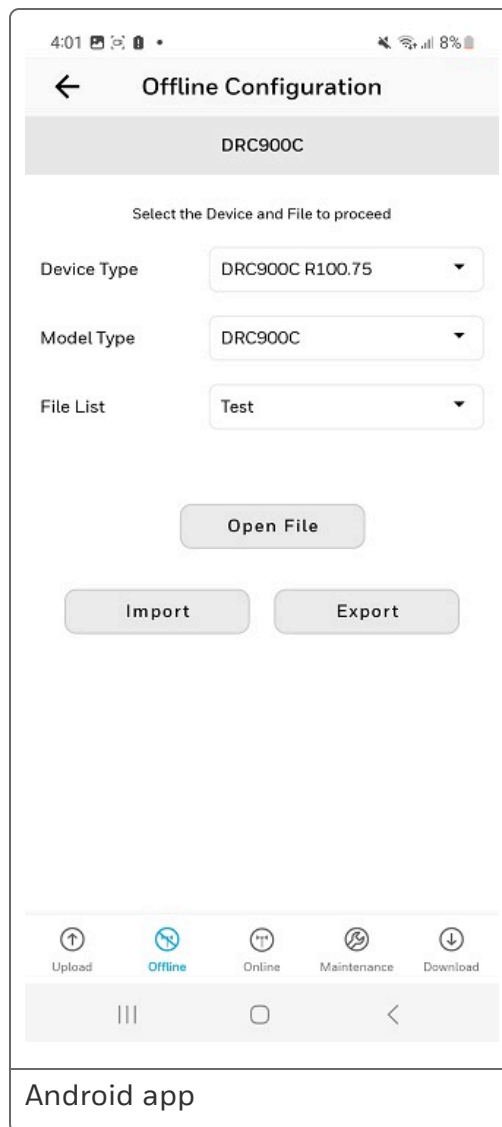
NOTE: If the same file name is specified that already exists in the app, the app prompts seeking permission to overwrite.
Also, the app does not allow you to save with the file name “default”.

5. Tap **Save**. The configuration file (.CVT) is ready to be viewed in the Offline Configuration.
If you do not want to save the configuration, tap **Cancel**.

Offline Configuration

Offline Configuration lets users to edit recorder's configuration file for later downloading to the recorder. This operation is mostly used for initial configuration, where the configuration from one recorder is copied, duplicated, or modified and then downloaded to other recorders.

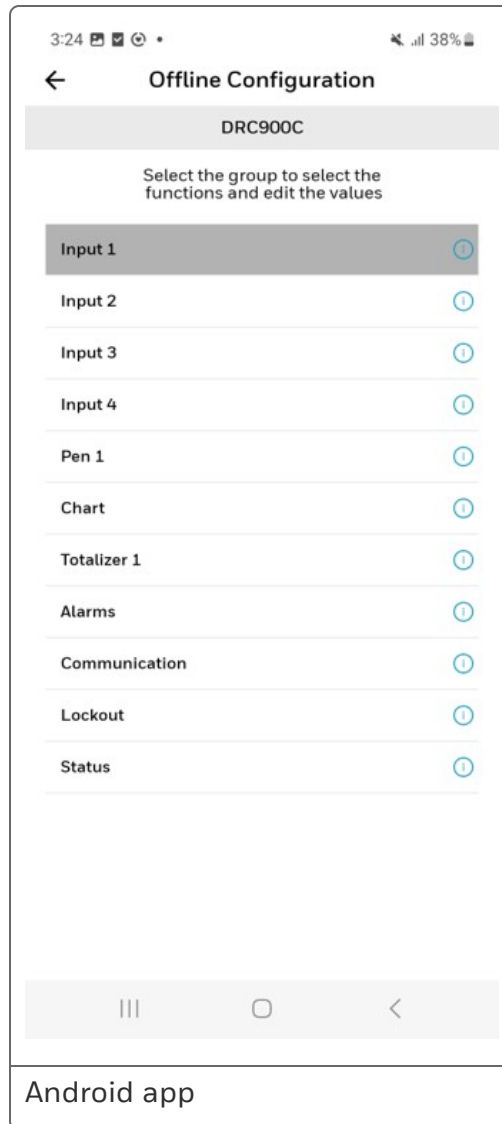
1. Tap **Dashboard**. The dashboard page appears.
2. Tap **Offline**. The **Offline Configuration** page appears.



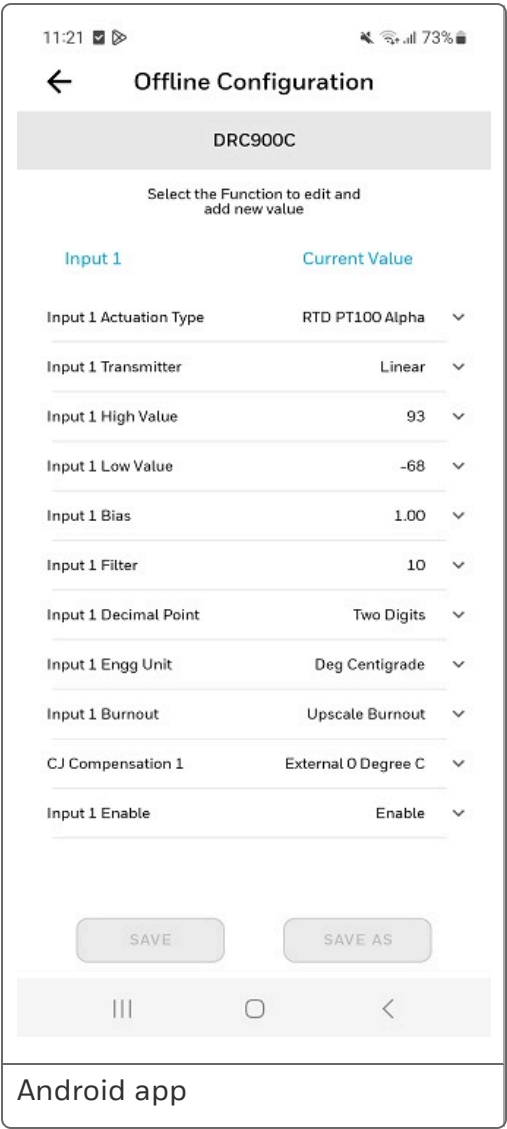
3. Specify the details as described in the below table.

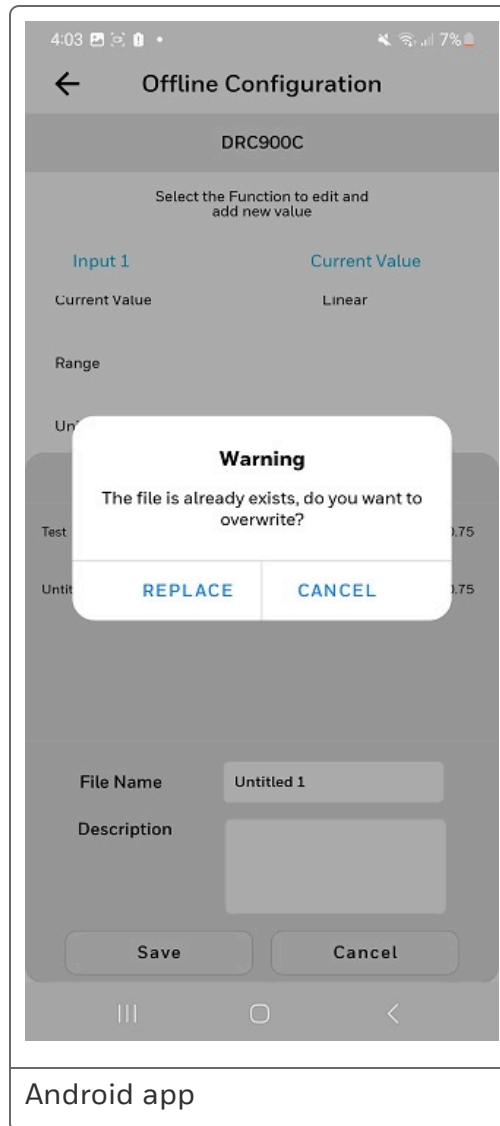
Item	Description
Device Type	Select the recorder type whose configuration you want to edit, i.e., it includes the <Model type> <Release number>.
Model Type	Select the required model type from the dropdown field, based on the recorder model you have.
File List	The list populates based on the selection made in the Device Type field. Select the required previously saved configuration file from the dropdown field.

4. Tap **Open File**, the offline configuration page appears.



5. Select a group and edit configurations. A pop-up appears to confirm the overwrite operation, tap **Replace** to proceed with the updates.

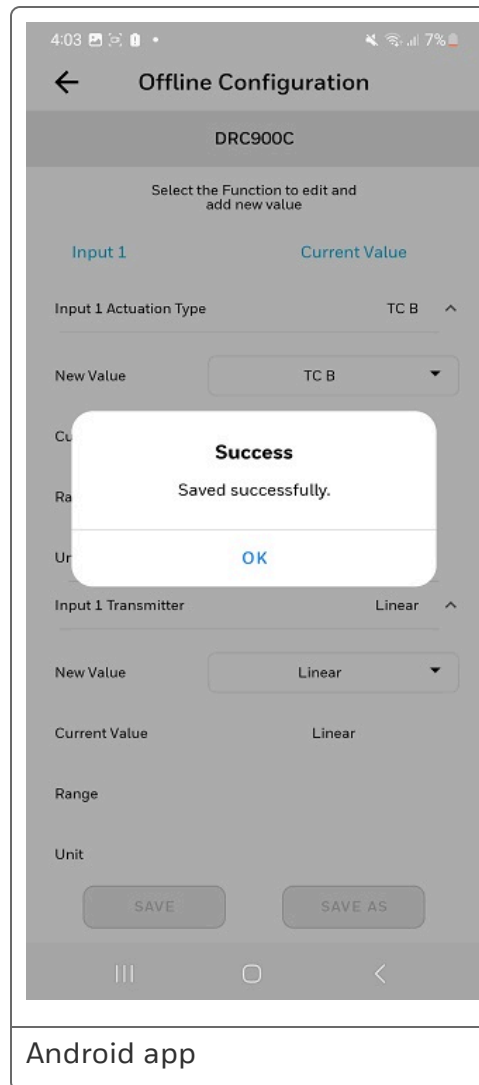




NOTE: If an analog configuration is highlighted with red text or a digital configuration is shown blank, it means that the stored value is now out of range, either because of previous changes to the recorder's configuration or because of incompatibilities with the configuration set. Change the configuration to an in-range setting to correct the error.

After finishing the configuration:

- Tap **Save**. The **Success** dialog appears, and then tap **OK**.



- If the user wants to save as a new configuration file, tap **SAVE AS**.
Enter **File Name** and **Description**. Tap **Save**.
If you do not want to save the configuration, tap **Cancel**.

NOTE: **Save** or **SAVE AS** options are enabled, only if there is any configuration change.



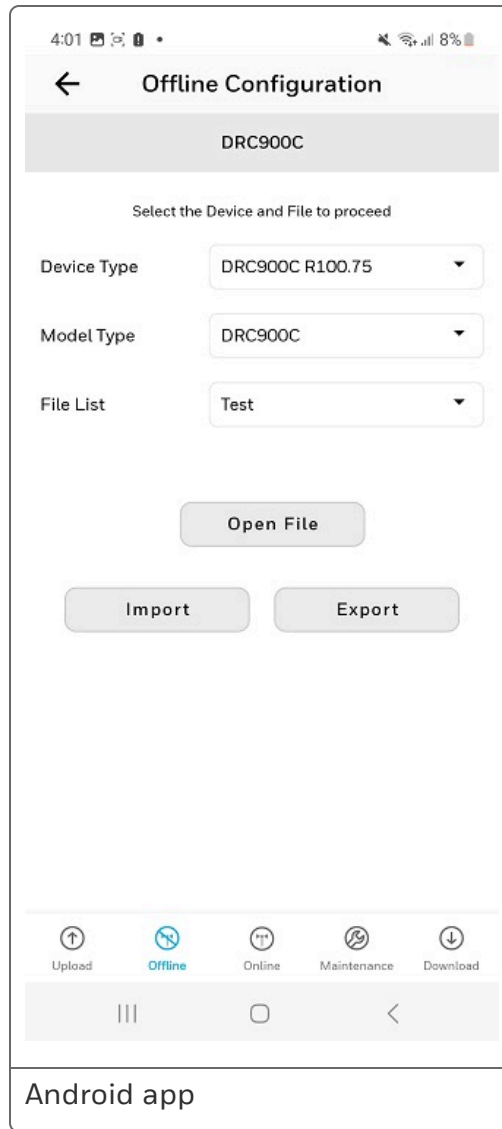
NOTE: If the same file name is specified that already exists in the app, the app prompts seeking permission to overwrite. Also, the app does not allow you to save with the file name “default”.

ATTENTION: Users must **Download** the offline configuration to reflect the changes in the recorder. See "Download" on page 100.

Export configuration

Users can Export the offline configuration files to .CVT format using the Export option. The exported .CVT files can be imported to other recorders.

1. Open the **EasySet** app.
2. Tap **Dashboard**, and tap **Offline**. The **Offline Configuration** dialog appears.



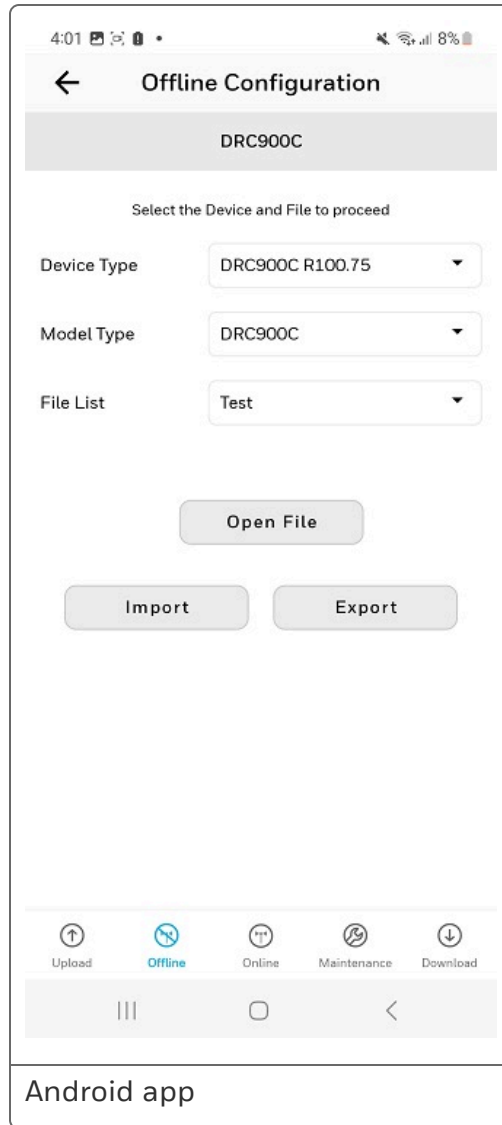
3. Configure the all parameters, and then save the file.
4. Tap **Export**. The configuration file is ready to share.
It is recommended to share the exported .CVT file through email to import to the other recorders.

Import configuration

Using the Import option, users can import the configuration files (.CVT) to the recorder through the app.

1. Open the email that contains configuration (.CVT) file. Download the file and save to the local storage of the phone.

2. Open the **EasySet** app.
3. Tap **Dashboard**, and tap **Offline**. The **Offline Configuration** dialog appears.



4. Tap **Import**. The import window appears and select the configuration file from the local storage.
5. After Importing is successful, the **Imported successfully** pop-up appears.
Tap **OK** to view/ modify the configuration file.

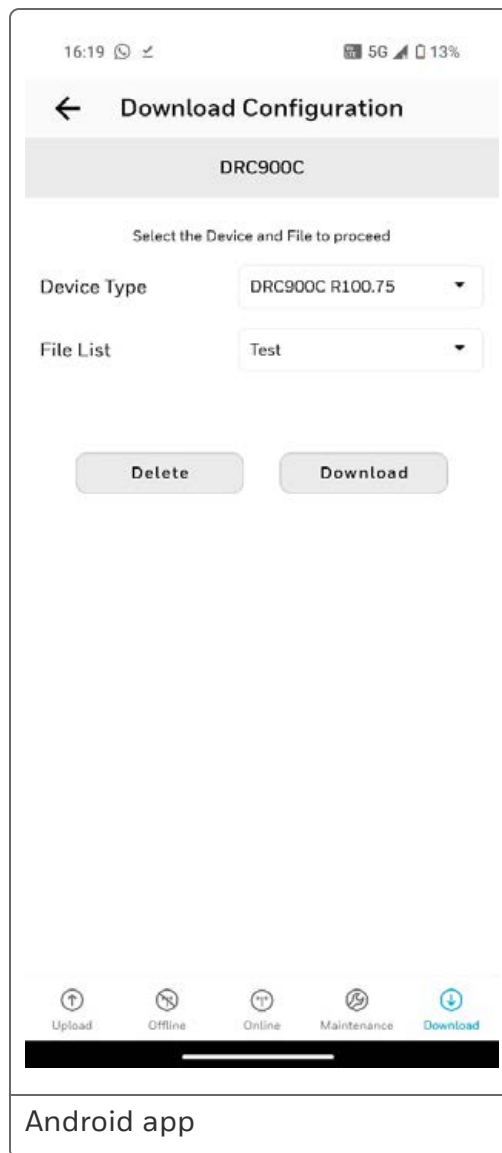
Download

Using the Download option, users can download the saved offline configurations from the EasySet app to the recorder.

1. Tap **Dashboard**. The dashboard page appears.

NOTE: Only after the dashboard is completely loaded, the user should navigate to other tabs like Upload, Online, Maintenance, and Download.

2. Tap **Download**. The **Download Configuration** page appears.



3. Select **Device Type** and **File List**.

Item	Description
Device Type	Select the recorder type whose configuration you want to download, i.e., it includes the <Model type> <Release number>.
File List	The list populates based on the selection made in the Device Type field. Select the required previously saved configuration file from the dropdown field.

4. Tap **Download**, and a dialog appears indicating that the configuration is downloaded successfully.
5. Tap **OK**.
If user want to delete the selected configuration file, tap **Delete**. A confirmation dialog appears, and then tap **OK**.

NOTE:

- Do not turn OFF the recorder while downloading.
- Even when there is a power failure in the middle of the downloading process, it will not restore the old configuration, because during downloading the configuration file, it updates memory in each iteration of the downloading process. However, it is recommended to have a power backup to avoid any power failure during the downloading process.

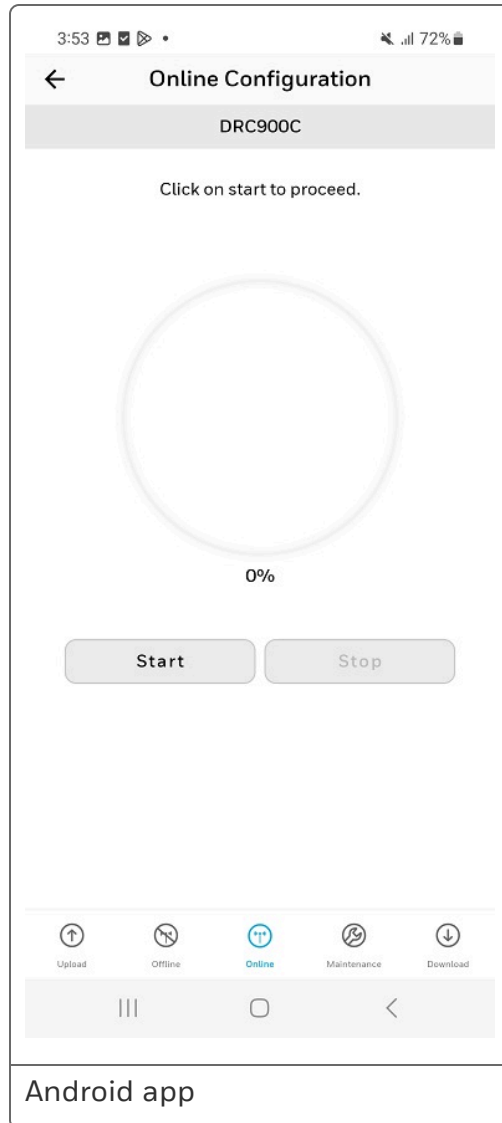
Online Configuration

Online Configuration lets users to upload the configuration from the recorder to the app, and then modify one parameter at a time back to the recorder. This option is useful for tuning recorder and is faster than downloading the entire configuration. However, it is recommended to do the offline configuration when there are multiple changes needed.

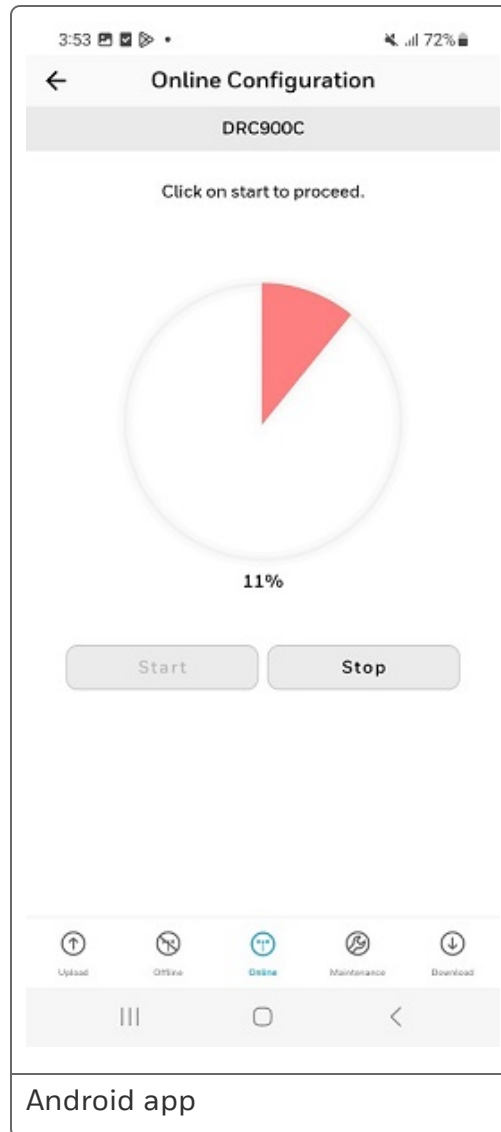
1. Tap **Dashboard**. The dashboard page appears.

NOTE: Only after the dashboard is completely loaded, the user should navigate to other tabs like Upload, Online, Maintenance, and Download.

2. Tap **Online Configuration**. The **Online Configuration** dialog appears.

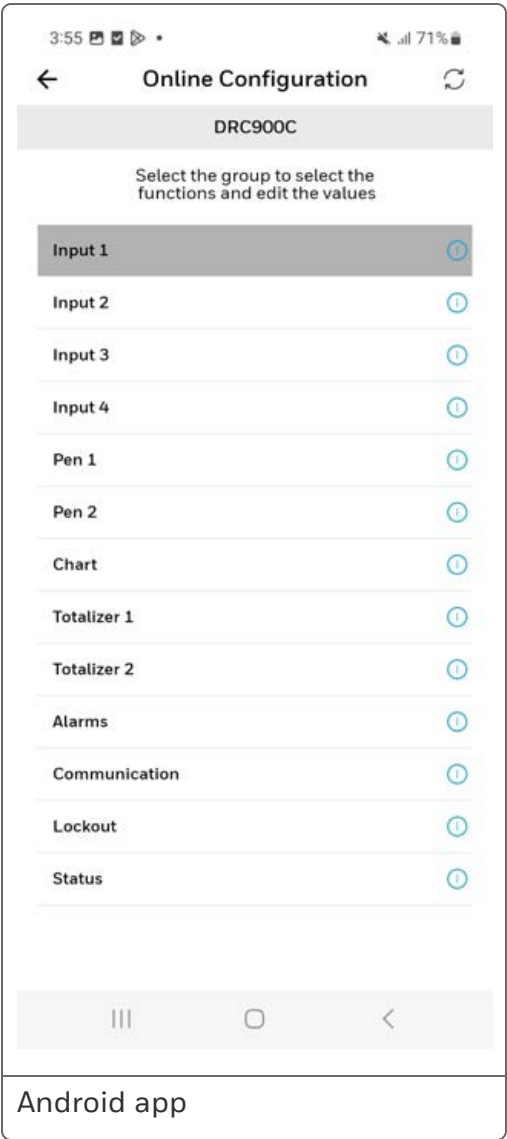


3. Tap **Start** to begin uploading configuration from the recorder to the EasySet app. The status of upload (% complete) is shown.



NOTE: To terminate upload, tap **Stop**.

If upload is successful, configurable groups appear.



Android app

NOTE: In case, any configuration is changed through display, after uploading to the EasySet app. Then tap the Refresh icon to reflect the updated configuration in the EasySet app.

4. Select a group and edit configurations.

←
Online Configuration
↺ Tap to refresh the data displayed, if there are any changes.

DRC900C

Select the Function to edit and add new value

Input 1	Current Value
Input 1 Actuation Type	0-100 mV ^
New Value	0-100 mV ▼
Current Value	0-100 mV
Range	
Unit	
Input 1 Transmitter	Linear ^
New Value	Square Root ▼
Current Value	Linear
Range	
Unit	

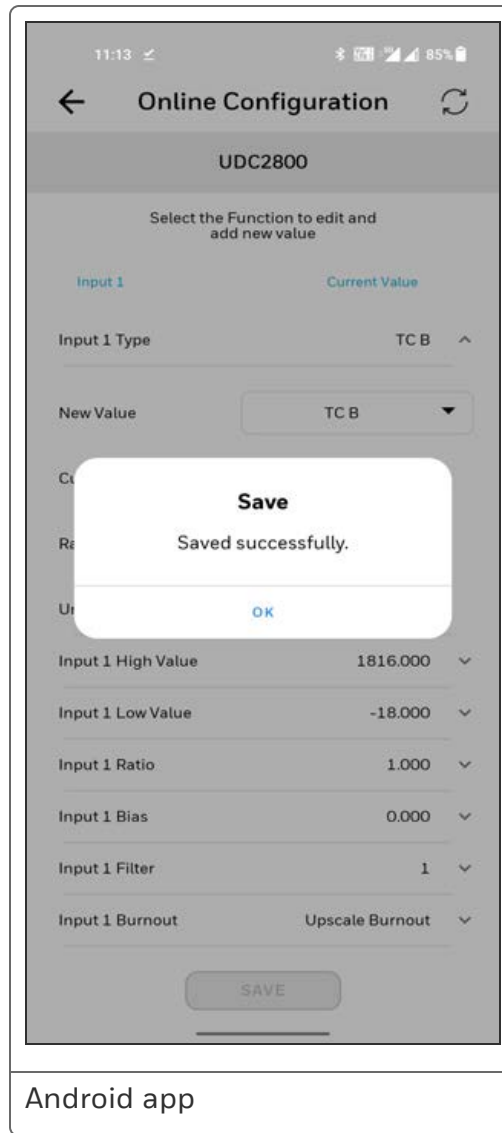
SAVE

|||
○
<

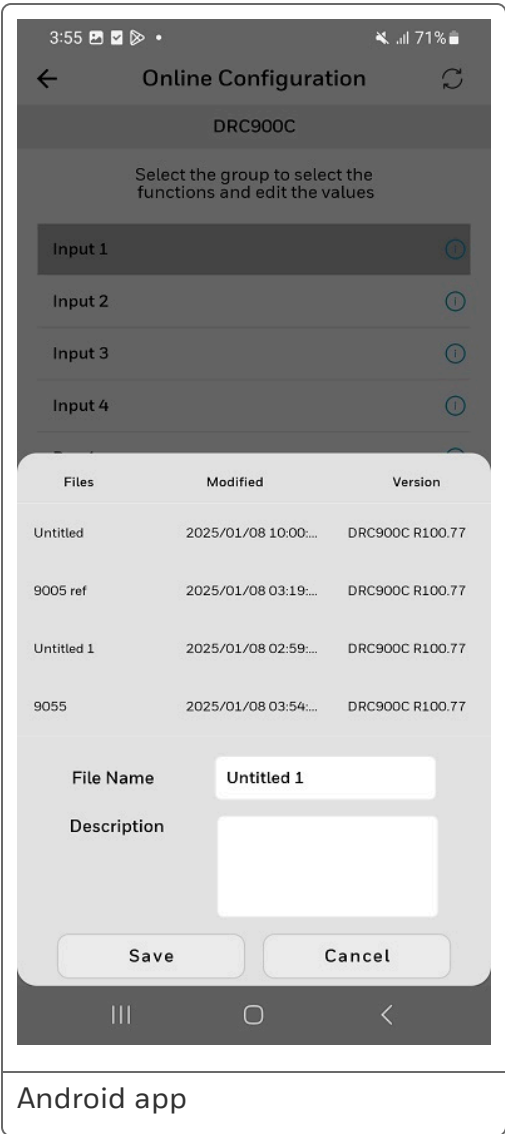
Android app

If an analog configuration is highlighted with red text or a digital configuration is shown blank, it means that the value read up from the instrument is now out of range, either because of previous changes to the recorder's configuration or because of incompatibilities with a downloaded configuration set. Change the configuration to an in-range setting to correct the error.

5. Once the configuration is completed, tap **Save**. The **Success** dialog appears. Tap **OK**.



6. Tap the arrow icon at the top left corner to return to the configurable groups page.
7. Tap the arrow icon at the top left corner again, a dialog appears to ask you to save the changed configuration for later use in the smartphone/ tablet.
8. Enter **File Name** and **Description**, and tap **Save**.
If you do not want to save the configuration, tap **Cancel**.



NOTE: If the same file name is specified that already exists in the app, the app prompts seeking permission to overwrite. Also, the app does not allow you to save with the file name “default”.

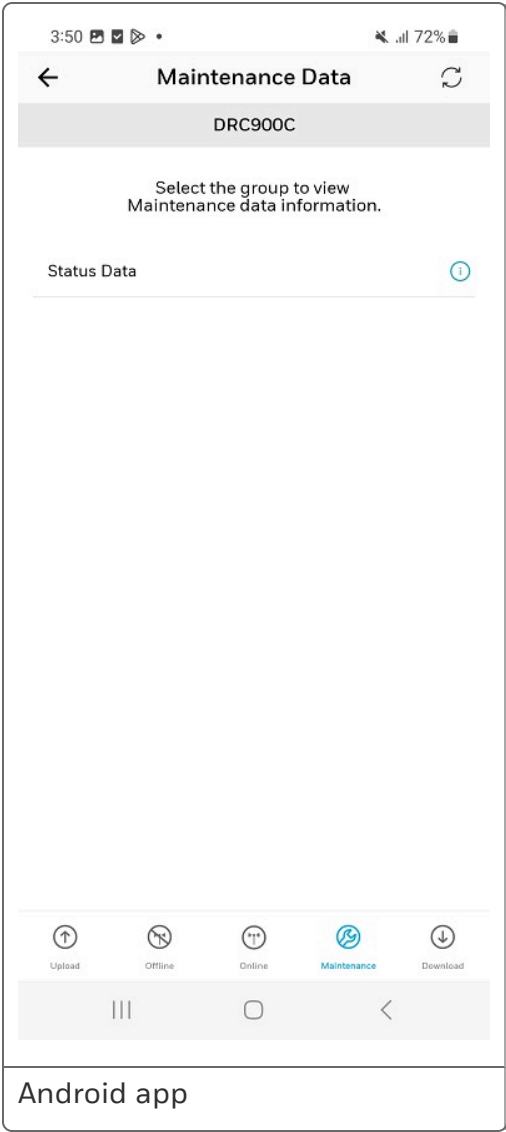
Maintenance Data

Maintenance Data displays key status parameters of the recorder. Primarily it is used for diagnostics purpose.

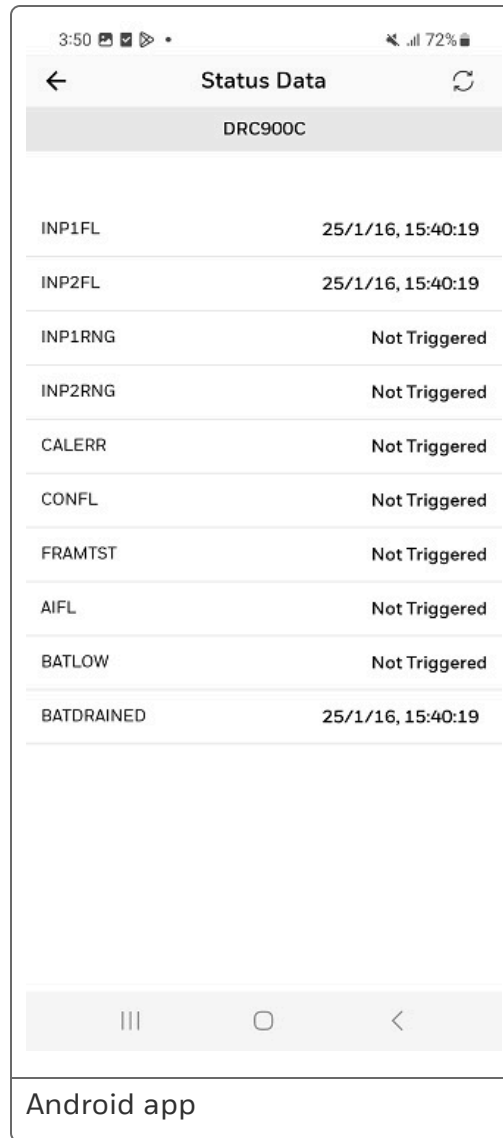
- 1. Tap **Dashboard**. The dashboard page appears.

NOTE: Only after the dashboard is completely loaded, the user should navigate to other tabs like Upload, Online, Maintenance, and Download.

- 2. Tap **Maintenance**. The **Maintenance Data** page appears.



3. Tap **Status**. The Status Data page appears.
The page lists the information, such as the status of the alarms, i.e. triggered or not triggered, to check the condition of the recorder, battery information, events of failure such as AI card failure, etc.



Firmware Update through EasySet app

Users can update the recorder's firmware using Honeywell EasySet Android app.

ATTENTION: It is safe to save the current configurations before performing the firmware update.

Prerequisites

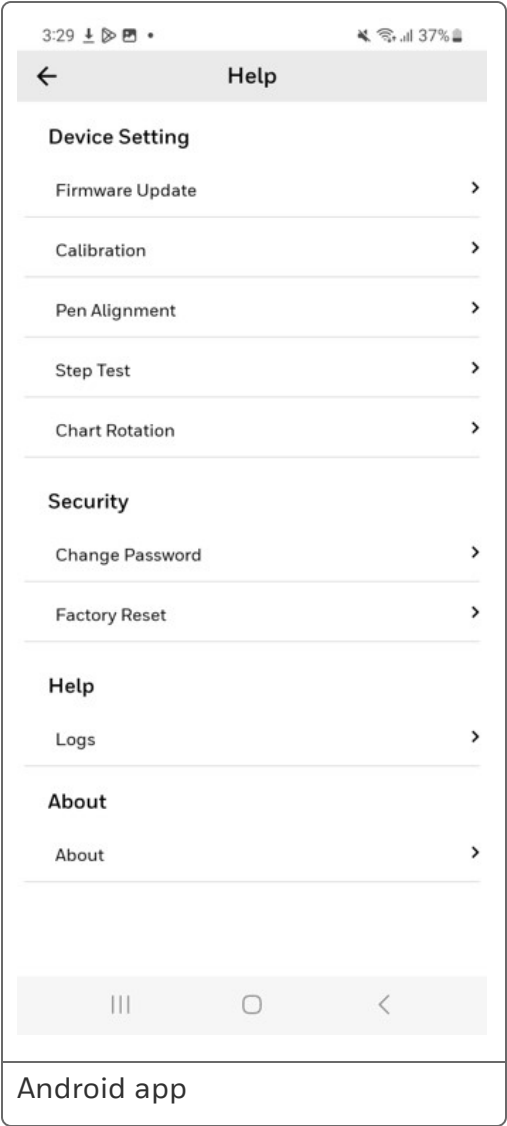
Connect to the recorder. See "Overview" on page 74 for more information.

Download the firmware package

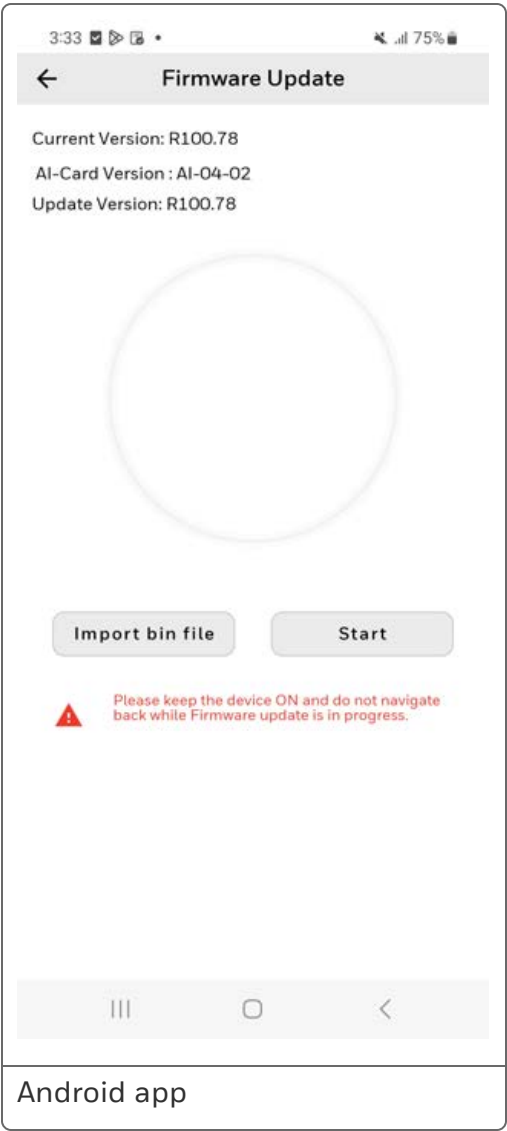
1. Go to Honeywell Process Solutions website (<https://process.honeywell.com>).
2. Click **Sign In** at the top-right corner of the page.
3. If you are a new user, create a new account at this website. Click **Create an Account** and follow the on-screen instructions.
4. If you are an existing user, Click **SIGN IN TO MYHPS** and type your **user name** and **password**, and then click **SIGN IN**.
After successful sign in, your account name appears at the top-right of the page.
5. Go to **Support > Technical Publications**. The Technical Publications page appears.
6. In the **Search** box, enter the keywords like **DRC901C Firmware Download Datasheet**, and then press **Enter**.
7. Click the **Download** against the required document to download it.
8. Open the document and download the firmware file to the Android-based smartphone/ tablet.

Update firmware package

1. Open the **EasySet** app.
2. Tap **Menu**, the menu options page appears.

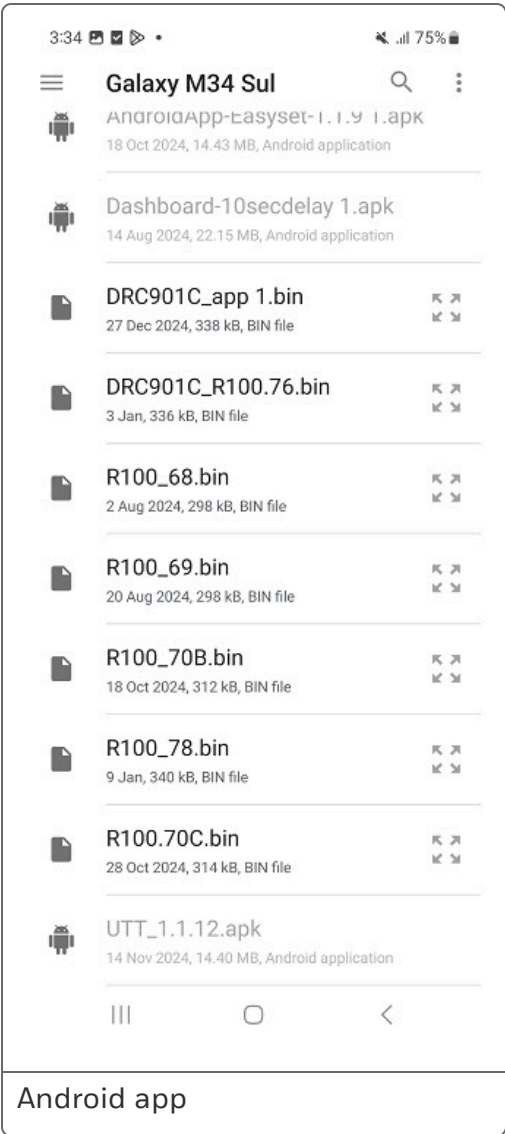


3. Tap **Firmware Update**. The Firmware Update page appears.

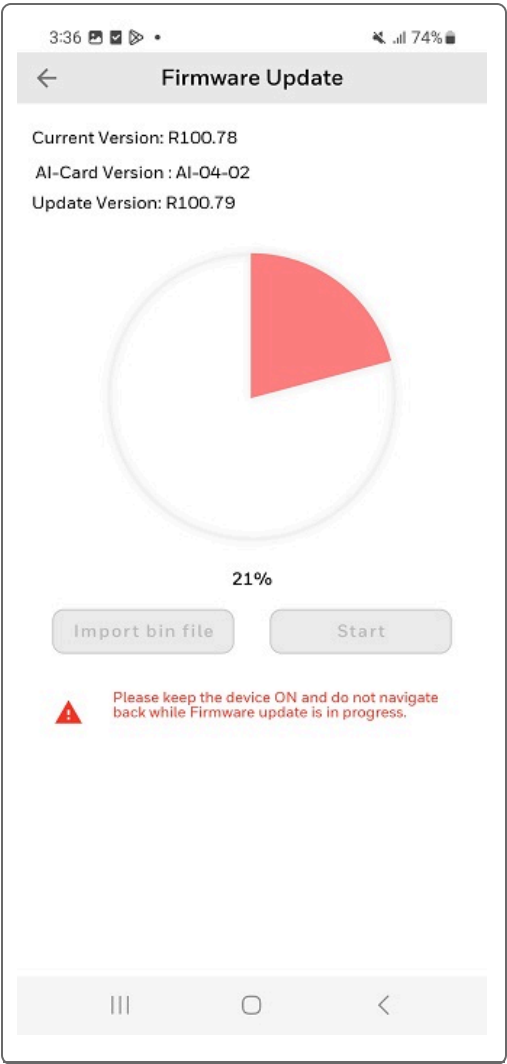


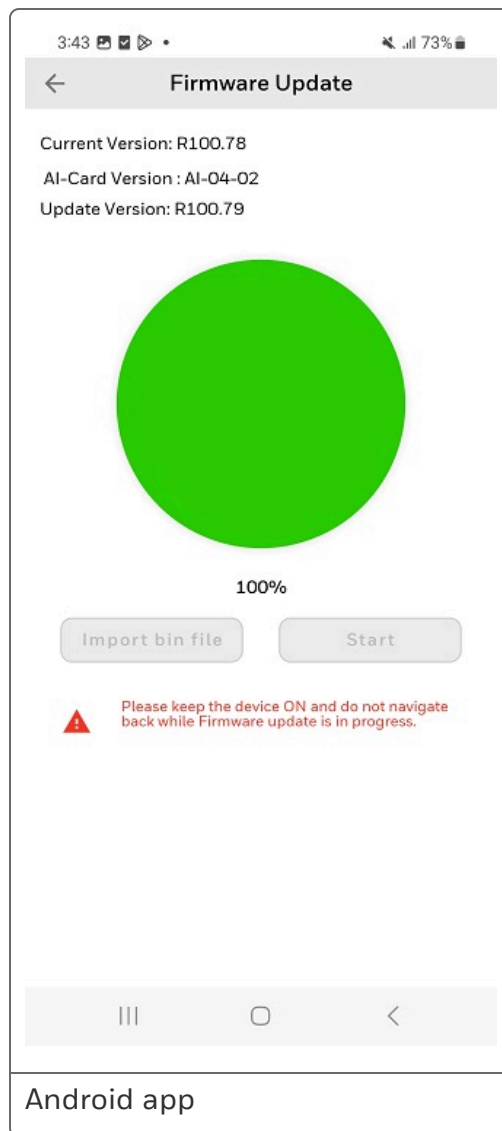
Android app

- 4. Tap **Import bin file**, and select the required firmware file (.bin) from the local drive.



5. Tap **Start**. The firmware update process is started.

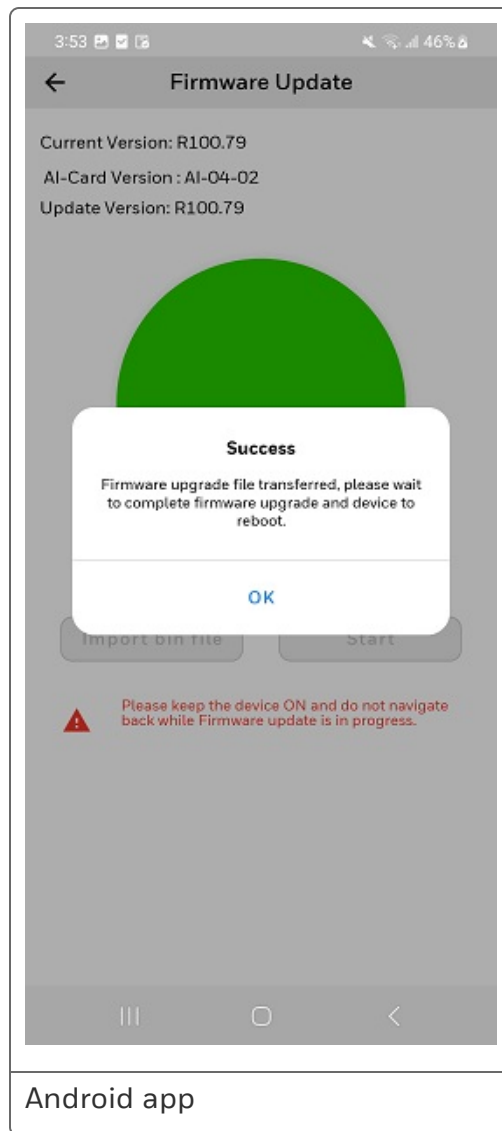




ATTENTION:

- Do not close the EasySet app during firmware update.
- Do not turn OFF the recorder during firmware update.
- Keep the mobile and the recorder in the Bluetooth range while updating the firmware.

6. When the firmware update file transfer is completed, a message appears that the recorder is going to reboot. Tap **OK** and wait for the recorder to restart.



ATTENTION: The device takes some time to reboot. Do not turn OFF the recorder.

Once the recorder restarts, the new firmware is installed in the recorder.

Settings

The Settings page enables user to carry out various settings as needed while using the recorder.

Go to the **Menu > Device Setting**. The Device Setting page appears.

Following are various settings available in the EasySet app:

- [Firmware Update](#)
- [Calibration](#)
- [Pen Alignment](#)
- [Step Test](#)
- [Chart Rotation](#)
- [Change Password](#)
- [Factory Reset](#)

NOTE: To enable all the configurations for write operation, ensure:

- The [Config Switch \(S1\)](#) located on the CPU board is turned OFF.
- The Lockout feature is set to “None” in the Honeywell Easyset App.

Pen Alignment

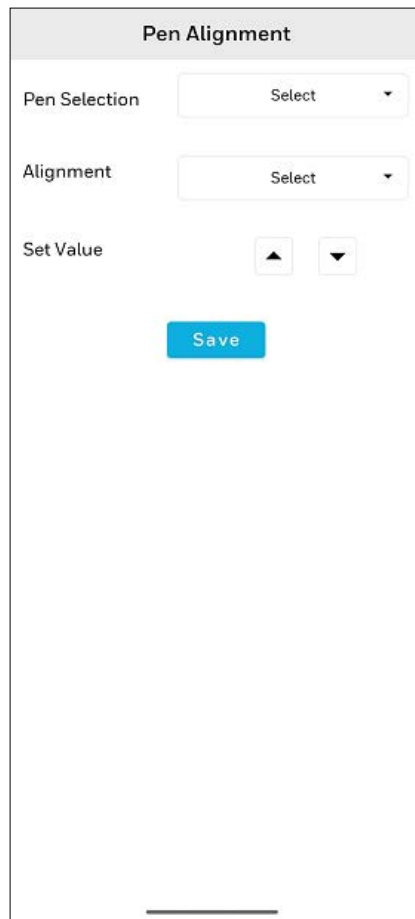
Follow the below instructions to perform the pen alignment using EasySet App:

Prerequisite:

- Refer to the Honeywell Circular Chart Recorder Instruction Sheet (DRCDOC-X006-en-100A) to prepare the recorder for the pen alignment.
 - Although the pen alignment is being performed using EasySet app, the user is required to be physically present near the recorder to monitor the pen movements to the respective position.
1. Go to the **Menu > Device Setting > Pen Alignment**. The Pen Alignment page appears.
 2. Specify the following information.

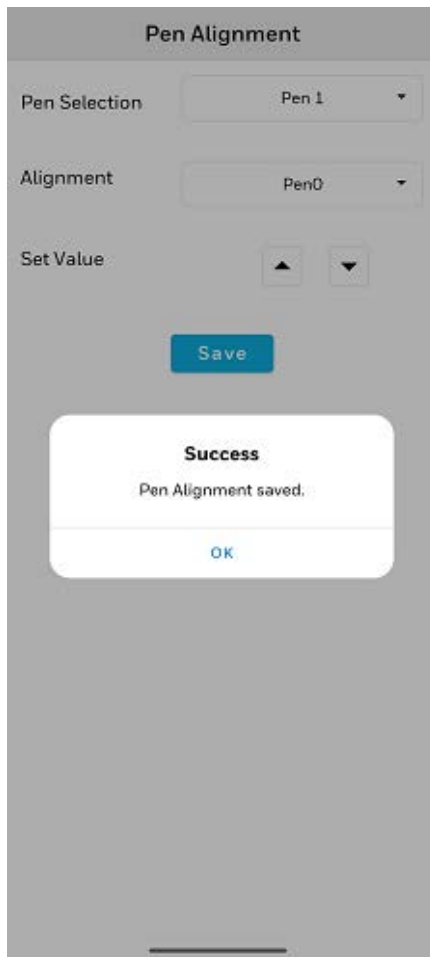
Field Name	Description
Pen Selection	Select the required pen for which you want to do the alignment:

Field Name	Description
	• Pen 1 (purple color) • Pen 2 (red color)
Alignment	Select the required position on the chart to which you want to align the pen. • Pen0 • Pen100
Set Value	Tap Up/Down key to increase/decrease the value respectively as needed to align the pen to the required position. • To align Pen 1/ Pen 2 to “0th” position: Tap the Up/Down key until the Pen 1/ Pen 2 is aligned to “0th” scale on the chart. • To align Pen 1/ Pen 2 to “100th” position: Tap the Up/Down key until the Pen 1/ Pen 2 is aligned to “100th” scale on the chart. NOTE: • For Pen 1: Make sure the difference between Pen 0 and Pen 100 counts should be 1200 (±20) counts. • For Pen 2: Make sure the difference between Pen 0 and Pen 100 counts should be 1220 (±20) counts.



The image shows a mobile application screen titled "Pen Alignment". It contains three configuration options: "Pen Selection" with a dropdown menu showing "Select", "Alignment" with a dropdown menu showing "Select", and "Set Value" with two arrow buttons (up and down). A blue "Save" button is located below the "Set Value" controls. The screen is framed by a thin black border, and a horizontal line at the bottom indicates the home indicator bar.

3. Tap **Save**. A success message appears, tap **OK**.



Step Test

You can test the recorder's mechanical operation by running a "step test".

Follow the below instructions to perform the step test using EasySet App:

Prerequisite: Although the step test is being performed using EasySet app, the user is required to be physically present near the recorder to prepare for the step test and monitor the step test chart patterns.

- a. Make sure the cap is removed from the tip of each pen and the chart is installed.
- b. Make sure the chart is placed and properly aligned in the recorder.
- c. Turn ON the power to the recorder.

1. Go to the **Menu > Device Setting > Step Test**. The Step Test page appears.
2. Select the required pen, i.e. Pen1/ Pen2, from the dropdown field for which you want to perform the step test.



3. Tap **Start**. The recorder will begin the test for the selected pen. This test prints a step pattern, which is independent of any chart settings, with horizontal lines drawn by both pens at each 10% increment on the chart. The test will run for one complete revolution of the chart before it returns to normal operation. The chart revolution for the test takes approximately three minutes, regardless of the configured chart speed.

NOTE: It is not recommended to select the Stop function during step test, unless it is required.

4. When the test has been completed, the pens will move away from the test position.

See the typical Step Test chart patterns below:

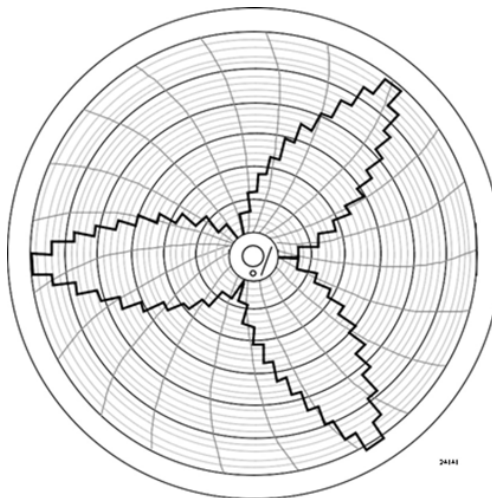


Figure 6-1: Typical Step Test Chart Pattern

5. At the conclusion of the test, turn OFF the power to the recorder.

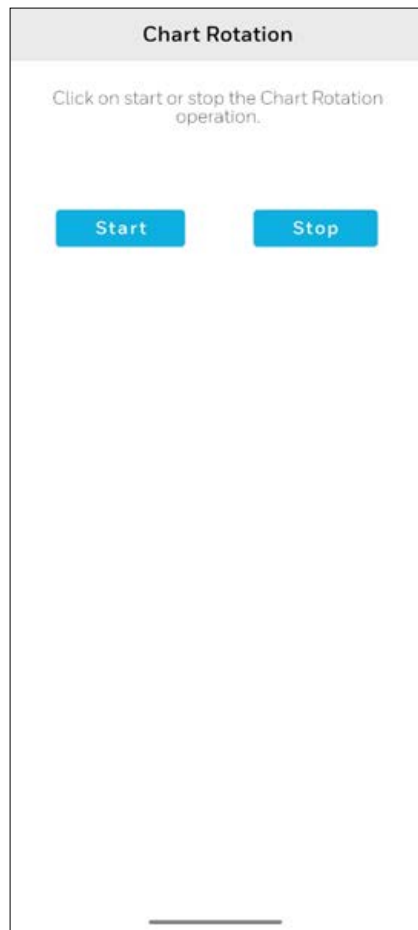
Chart Rotation

The function enables user to start or stop the rotation of the chart. For example, when we need to stop the rotation of the chart, once its duration is completed. And, then to start again for another duration.

Follow the below instructions to perform the chart rotation using EasySet App:

Prerequisite: Although the step test is being performed using EasySet app, the user is required to be physically present near the recorder to visually confirm if the rotation of the chart is stopped/ started.

1. Go to the **Menu > Device Setting > Chart Rotation**. The Chart Rotation page appears.
2. Tap **Start**. The rotation of the chart stops in the recorder.
Or, if in case the rotation of the chart is currently stopped, then to start it again, tap **Start** from here.



NOTE: Do not try to manually stop the rotation of the chart by holding on the hub as the motor might get damaged.

Change Password

The function enables the user to change the password at any point of time as needed.

NOTE: The login password to the EasySet app and the password needed for configuring the recorder through display are same.

Follow the below instructions to change the password using EasySet App:

1. Go to the **Menu > Device Setting > Change Password**. The Change Password page appears.
2. Enter the current password. and then tap **Validate**.

Change Password

Current Password

Validate

New Password

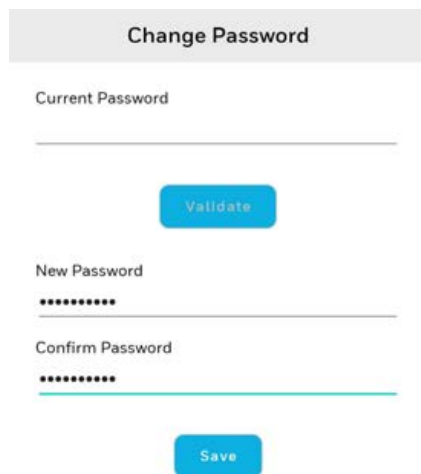
Confirm Password

Save

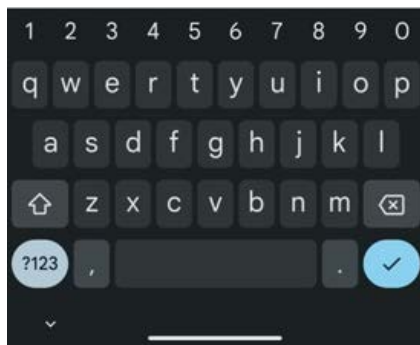
- 3. After the current password is validated, a success message appears. Tap **OK**.

The screenshot displays the 'Change Password' interface of the Honeywell EasySet application. It features three input fields: 'Current Password', 'New Password', and 'Confirm Password'. A blue 'Validate' button is positioned below the 'Current Password' field. A white success dialog box is centered on the screen, displaying the text 'Success' and 'Old password validated.', with an 'OK' button at the bottom.

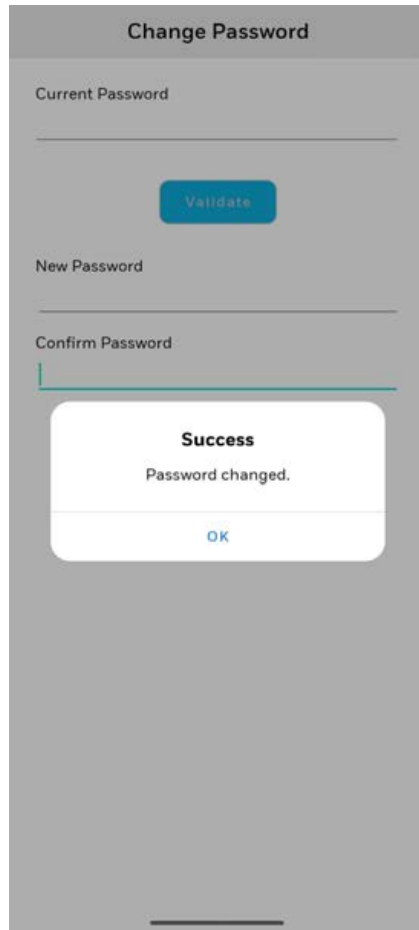
4. Enter the new password, and confirm the new password.



The image shows a 'Change Password' form. At the top, the title 'Change Password' is centered in a grey header. Below it, there are three input fields: 'Current Password', 'New Password', and 'Confirm Password'. Each field is represented by a horizontal line. A blue 'Validate' button is positioned below the 'Current Password' field. A blue 'Save' button is positioned below the 'Confirm Password' field. The 'New Password' and 'Confirm Password' fields are filled with a series of dots, indicating that the passwords have been entered but are hidden.



5. Tap **Save**.
A success message appears confirming the password change.
Tap **OK**.



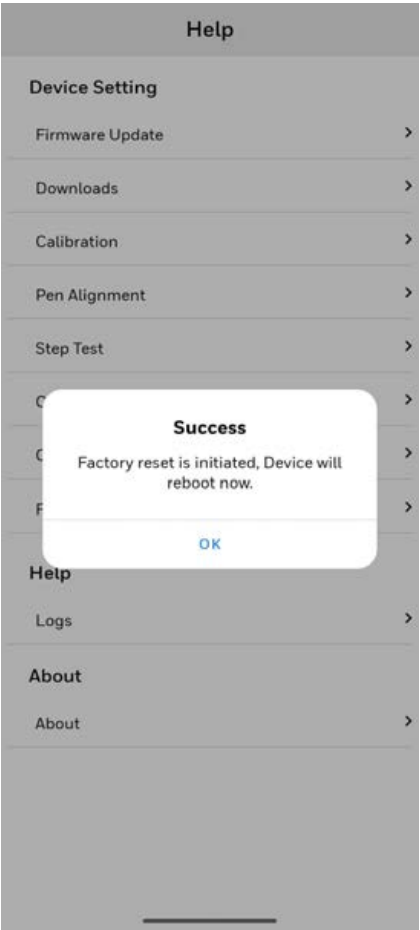
Factory Reset

The functionality enables user to restore the recorder to the default factory settings, i.e. the settings with which it was shipped.

Follow the below instructions to perform the factory reset of the recorder from the app:

1. Go to the **Menu > Device Setting > Factory Reset**.
2. A pop-up appears, prompting to enter the password to proceed with factory reset.
3. After entering the password successfully. A success message appears, saying that the factory reset is initiated, and the recorder will restart. Tap **OK**.

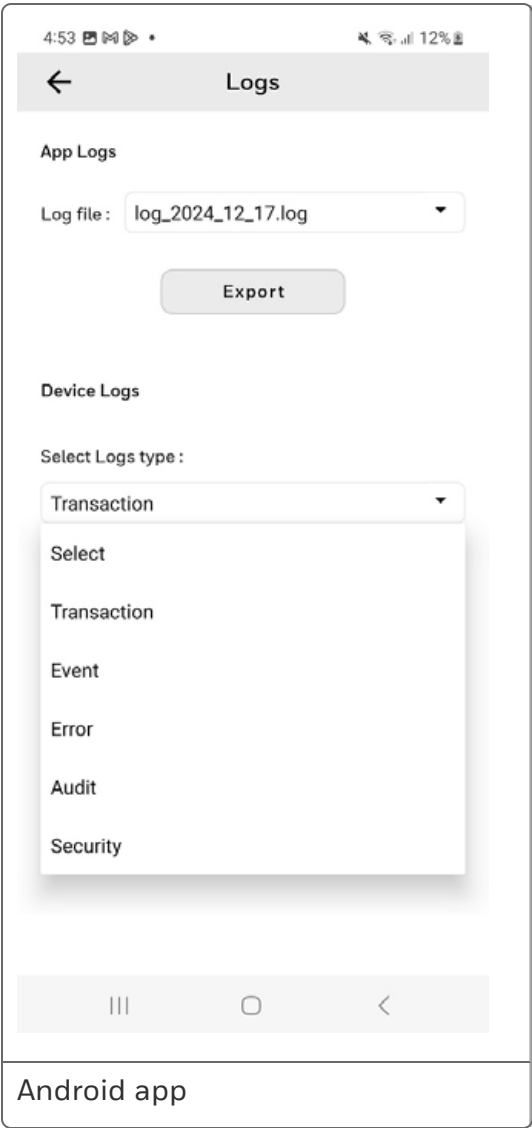
Thereby, the recorder disconnects from the app, to continue using the app, [connect the recorder](#) again to the app, once it is restarted.



Logs

The About EasySet page includes the logs related to the Honeywell EasySet app and the recorder.

1. Go to the **Menu > Help > Logs**.
2. A pop-up appears, prompting to enter the password. After entering the password successfully, the Logs page appears.
3. Select the type of logs you want to download.
 - a. App Logs: Select the required log file from the **Log file** dropdown field.
 - b. Device Logs: Select the required type of log file from the **Select Logs Type** dropdown field.



The following table describes the types of device logs available in the EasySet App to download.

Type of Logs	Description
Transaction Logs	It captures the history of actions that will be logged in the system, such as an update in the pen alignment and password related changes.
Event Logs	The event logs include information about all events related to chart recorder like changes in the input pV value, updates in the totalizer, the pen position, mode of configuration, mode of system reset, etc.

Type of Logs	Description
Error Logs	The error logs include information that describes about a failure of a particular component/system in the recorder, such as hardware failure of AI card, field calibration, Modbus communication, and any peripheral failure, or an operator message. This information further helps to diagnose an issue.
Audit Logs	Audit logs track user activity of field calibration of each channel. They are essentially a form of evidence providing details about when and which specific input actuation was carried out inside a system.
Security Logs	Security logs contain events related to security, such as firmware upgrade attempts, firmware verification and validation, and system power ON.

The following table provides the details of the capacity for storing the records of each type of logs in the recorder:

Type of Logs	Number of Logs Supported	Usage
Transaction	25	Application
Event	25	Application
Error	25	Application
Audit	25	Application
Security	25	Bootloader and Application

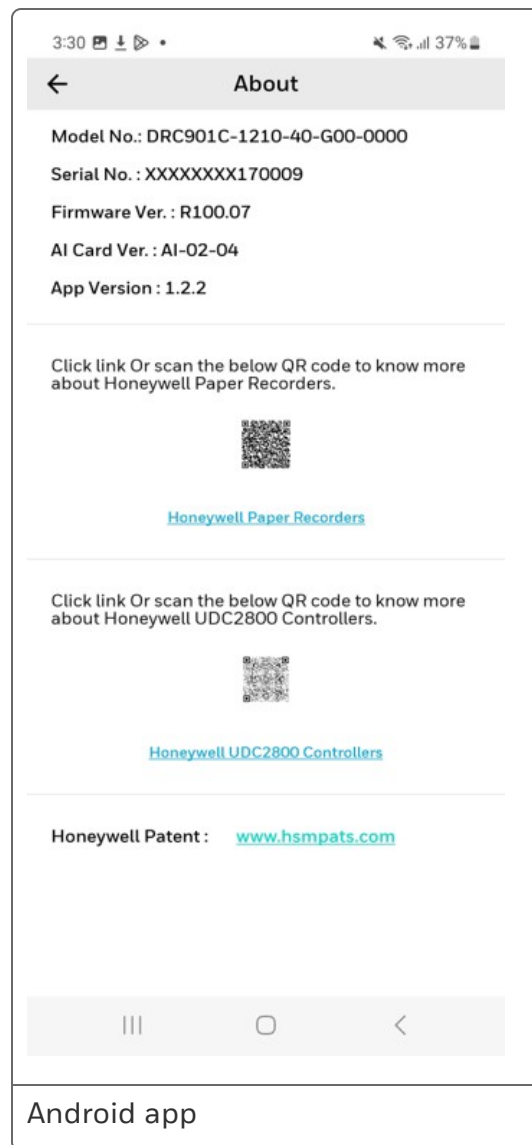
4. Tap **Export**. The EasySet App now fetches the requested logs that are stored in the FRAM to download it in a file.

About EasySet

Tap **Menu**, and then tap **About EasySet**.

The About EasySet page include the following details:

Detail	Description
Model No.	The model number of the recorder.
Serial No.	A unique identification number assigned to each recorder.
Firmware Ver.	The current firmware version of the recorder.
AI Card Ver.	The current AI card version used in the recorder.
App Version	The EasySet application released version.
QR Code	A QR code is provided to scan and access more information about the recorder.



CALIBRATION

In this section:

<i>Introduction</i>	<i>135</i>
<i>Field Calibration Ranges</i>	<i>135</i>
<i>Input Calibration using Display</i>	<i>136</i>
<i>Input Calibration using Easyset App</i>	<i>140</i>

Introduction

The recorder stores both factory and field calibration values for inputs in memory, you can easily select either factory or field calibration values for use by the recorder. This section explains how to field calibrate analog inputs.

Field Calibration Ranges

Input Type	Zero	Span
K	-50mV	50mV
R	-25mV	25mV
S	-25mV	25mV
B	-10mV	10mV
J	-50mV	50mV
T	-25mV	25mV
E	-100mV	100mV
N	-50mV	50mV
G (W)	-50mV	50mV
0-10mV	-10mV	10mV
0-100mV	-100mV	100mV
0-200mV	-250mV	250mV
0-1V	-1V	1V
0-2V	-3V	3V
1-5V	-6V	6V
0-5V	-6V	6V
2-10V	-12V	12V
0-10V	-12V	12V

Input Type	Zero	Span
0-20mA	-250mV	250mV
4-20mA	-250mV	250mV
RTD H	0 ohm	500 ohm
RTD L	0 ohm	500 ohm
RTD T	0 ohm	500 ohm

Input Calibration using Display

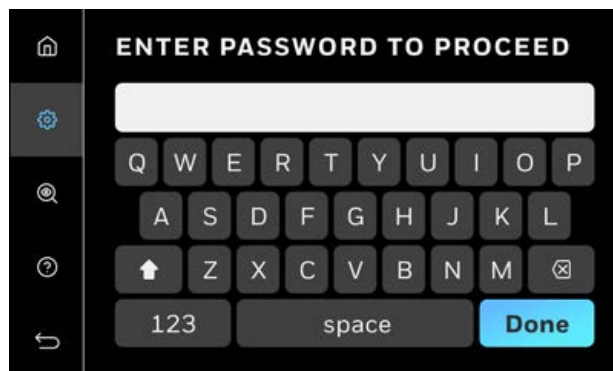
Follow the below instructions to perform the field calibration:

1. Power ON the recorder.
2. The recorder runs the power-up tests. Kindly wait until all the tests are passed, which is indicated by a success message "SELF TEST PASSED" on the display.
3. Make sure the inputs are connected physically to any one/two of the "Analog Input Wiring" on page 40, i.e. CH1/CH2/CH3/CH4.

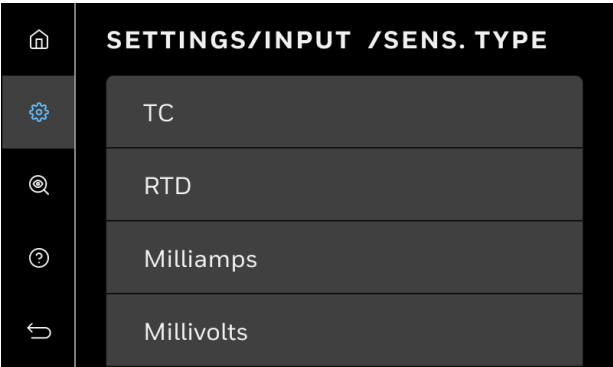
NOTE:

- For recorder with one-pen: Any one AI card channel can be used at a time.
- For recorder with two-pens: Any two AI card channels can be used at a time.

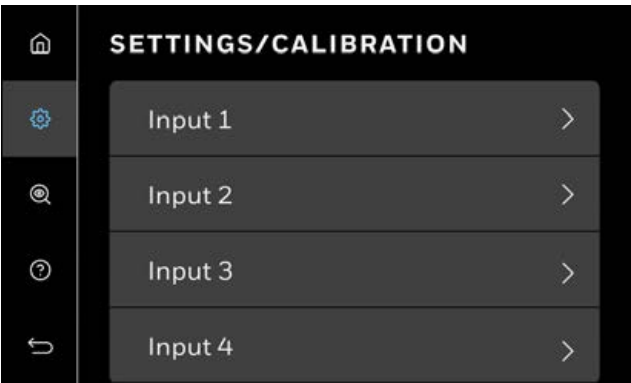
4. On the display, go to the **Settings** menu, and enter the **Password**.



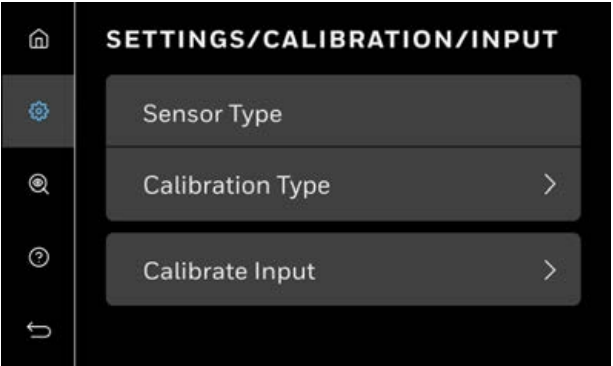
5. Go to the **Settings > Input group > Sensor Type**. Select the required input you want to calibrate.
For example, TC/RTD/Milliamps/Millivolts/Volts.



6. Go back to the **Main** menu, and ensure that the selected inputs are appearing.
7. Go to **Settings > Calibration**. Select the required input channel for which you are performing the calibration, i.e., Input 1/Input 2/Input 3/Input 4.



8. Go to **Settings > Calibration > Input Group**. The Calibration Input page appears.



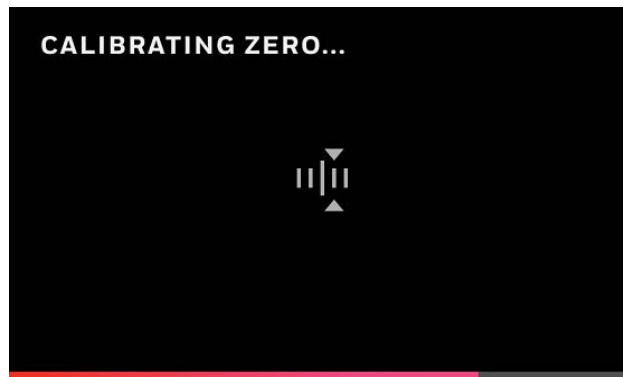
Specify the following details:

a. **Calibration Type:**

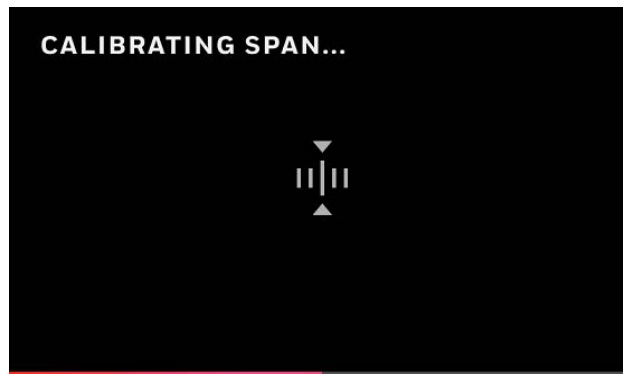
- **Factory:** Factory calibrated values will be considered.
- **Field:** To perform the calibration as per the field or customized inputs. If field calibration is not performed yet, then the factory values are written to field calibration.

b. **Calibrate Input:** To proceed further with the calibration:

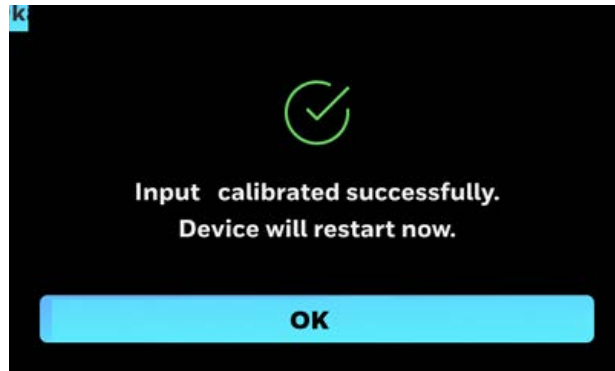
- i. Enter the Zero calibration value from the source by referring to the "Field Calibration Ranges" on page 135. Kindly wait until the Zero calibration is completed.



- ii. After Zero calibration is successful, enter the Span calibration range value from the source by referring to the "Field Calibration Ranges" on page 135. Kindly wait until the Span calibration is completed.

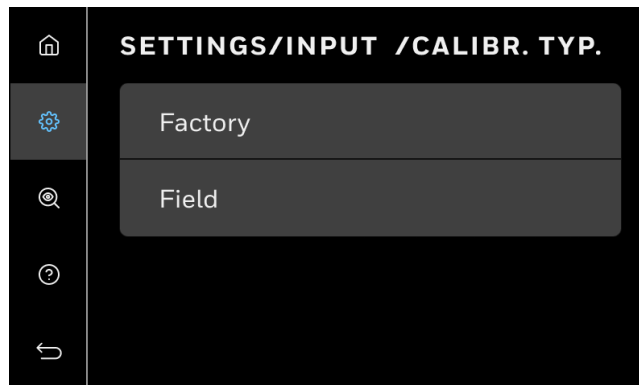


After Span calibration has been completed, a message appears saying, "Input calibrated successfully. Device will restart now".



NOTE: Do not disturb the recorder or do any other action on the display while the calibration process is in progress.

9. After the recorder restarts, go to the **Main** menu, and monitor the Input PV values as per the field calibration.
10. Go to the **Settings > Calibration > Input Group**. Select the Calibration Type as "Factory".



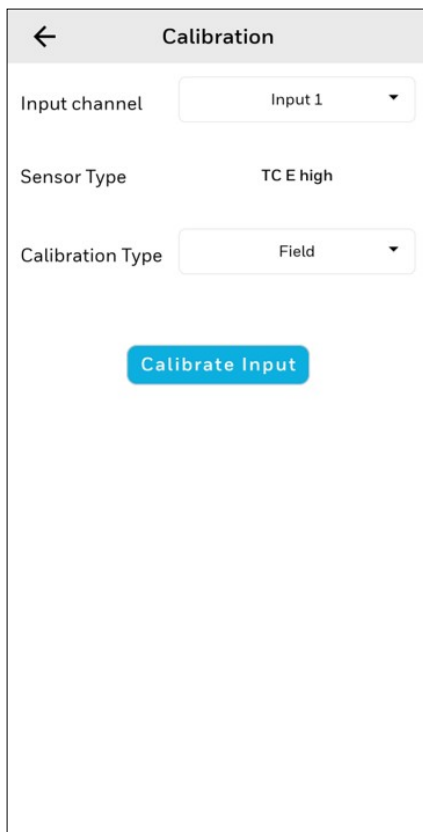
11. Go back to the **Main** menu, and monitor the Input PV values as per the factory calibration.
The expectation is that field calibration values accuracy should improve in comparison with the current factory calibration values, after performing the field calibration.
To measure the accuracy of the field calibrated values, refer to the "Accuracy Specifications" on page 16 for the factory calibration.

Input Calibration using Easyset App

Follow the below instructions to perform the field calibration using EasySet App:

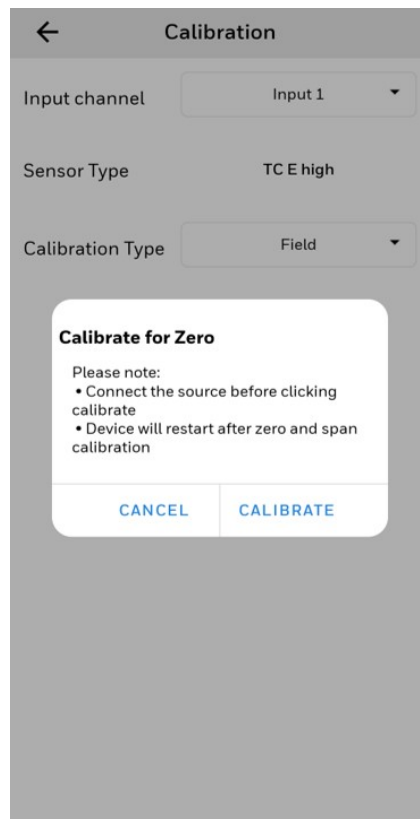
1. Go to the **Menu > Device Setting > Calibration**. The Calibration page appears.
2. Specify the following information.

Field Name	Description
Input Channel	Select the required input channel for which you want to do the calibration: • Input 1 • Input 2 • Input 3 • Input 4
Sensor Type	Displays the sensor type configured. For example, TC E high.
Calibration Type	Select the type of calibration you want to perform: • Field: To perform the calibration as per the field or customized inputs. • Factory: To perform the calibration as per the default factory settings, i.e. it uses built-in calibration values (stored in read-only memory).



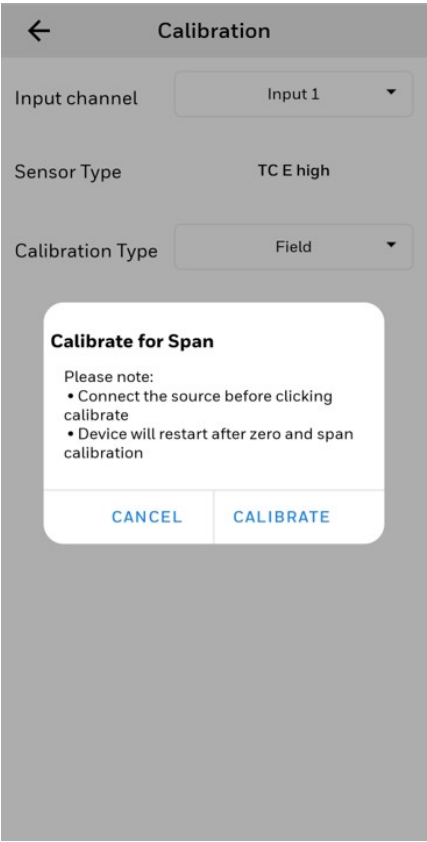
The screenshot shows a mobile application interface for calibration. At the top, there is a grey header bar with a back arrow on the left and the title "Calibration" in the center. Below the header, there are three configuration options, each with a label on the left and a value in a rounded rectangle on the right. The first option is "Input channel" with the value "Input 1" and a small downward arrow. The second option is "Sensor Type" with the value "TC E high". The third option is "Calibration Type" with the value "Field" and a small downward arrow. Below these options, there is a blue button with the text "Calibrate Input" in white.

3. Once done with the above configurations, tap **Calibrate Input**.
4. A pop-up appears to familiarize us with the following notes before proceeding further with the calibration for zero:
 - a. Connect the source before proceeding further with calibration.
 - b. Recorder will restart after zero and span calibration.Once the above notes are followed, tap **CALIBRATE**. The calibration process for zero starts.



5. After calibrating for zero, the same pop-up appears as in above step to familiarize us with the notes before proceeding further with the calibration for span.

Once the notes are followed, tap **CALIBRATE**. The calibration process for span starts.



6. After successful calibration for zero and span, a success message appears conveying the same. It also notifies that the recorder will restart now.

←

Calibration

Input channel

Input 1

▼

Sensor Type

TC E high

Calibration Type

Field

▼

Success

Span calibration successful, Device will reboot now.

OK

MAINTENANCE

In this section:

<i>Replacement of Chart</i>	<i>146</i>
<i>Replacing the Ink cartridge</i>	<i>147</i>
<i>Maximizing the life of pen</i>	<i>147</i>
<i>Cleaning Instructions</i>	<i>148</i>

Unless the recorder's location will expose it to dust, Honeywell Circular Chart Recorder DRC901C does not require any periodic maintenance except the replacement of the chart and ink cartridges.

This section provides instructions for replacing the chart and ink cartridge. It also contains tips for maximizing the life of the pens, including recommended practices if the recorder is used in a dusty area.

ATTENTION: Humidity can affect the size of the chart, resulting in the pen being offset from the proper chart increment. Instructions for aligning the pens are provided in the section "Troubleshooting and Pen Alignment for Recorder Without Display" and "Troubleshooting and Pen Alignment for Recorder With Display".

Replacement of Chart

Turn off the power to the recorder, then open the door.

Pull up on the pen lifter to raise the pen(s) from the chart plate.

Lift the chart from the hub, and slide it from under the pen(s) to remove it from the chart plate.

Place the new chart under the pen lifter, pens, and time index; and press it over the chart hub.

Turn the chart until the desired time line on the chart is aligned with the time index on the chart plate and Pen 1 before closing the locking clip on the hub. Push down on the lifter to return the pen(s) to the chart.

CAUTION: Do not try to rotate the hub as the motor might get damaged.

Close the door and apply power.

Replacing the Ink cartridge

ATTENTION:

- Be careful not to move the pen arm while removing and installing the ink cartridge.
- It is recommended to use ESD gloves while changing the ink cartridge.

1. Turn OFF the power to the recorder.
2. Open the door.
3. Pull up on the pen lifter to raise the pen(s) from the chart plate.
4. Unclip and remove the Pen 1 (purple)/Pen 2 (red) ink cartridge from the pen arm.
5. Remove the protective cap from the pen tip on the new cartridge and open its clip. (If you plan to store or ship the recorder, save the protective cap.)
6. Slide the new cartridge onto the pen arm so that its tip fits into the notch at the end of the pen arm and close the clip to secure the cartridge to the pen arm.
7. Push down the pen lifter to return the pen tip to the chart.
8. Close the door and apply power.

Maximizing the life of pen

Store the chart paper in a cool, clean dry place where the temperature does not exceed 40 °C (104 °F) and the humidity is below 65% RH.

Do not expose the pen tip and chart paper to abrasive chemicals or dust that cause excessive pen wear.

If the recorder is used in a dusty atmosphere, provide a positive 'clean air purge' to minimize dust particle accumulation on the chart paper.

Periodically clean the pen arm using a cotton swab dipped in alcohol. This is more important when the recorder is located in a dusty environment and no 'clean air purge' is used.

Never let the pen tip ride on the chart plate when the paper is not present. Use the pen lifter to raise the arm when changing the paper.

Keep the door closed while recording.

Always cover the pen arm tip with its protective cap when storing or shipping the recorder.

Be sure that the chart paper lays flat against the chart plate. Any ripple in the paper will cause light pen printing.

Be sure the chart hub assembly is pushed onto the motor shaft so that it is flush with the chart plate.

Cleaning Instructions

Periodically clean the pen arm using a cotton swab dipped in alcohol. This is more important when the recorder is located in a dusty environment and no 'clean air purge' is used.

Cleaning the recorder should be done with a soft lint cloth and warm soapy water or screen cleaner recommended for use on an installed recorder. Solvents and prolonged exposure to detergents can cause damage to the front panel. It is recommended that any cloth used for cleaning is damp but NOT wet, to avoid water collecting in the unit.

TROUBLESHOOTING

In this section:

Troubleshooting of a Recorder without Display 150

Troubleshooting of a Recorder with Display 155

Troubleshooting of a Recorder without Display

This section explains how to use observable symptoms of failure to troubleshoot the recorder models that do not have a display.

- To reduce recorder down-time, this section enables tracing trouble to a hardware assembly level rather than to an individual component.
- While troubleshooting is straightforward, we recommend that only trained service technicians repair the recorder. SEE THE SHOCK HAZARD WARNING BELOW.

ATTENTION: Troubleshooting may require access to hazardous live circuits, and should only be performed by qualified service personnel.

Types of problems

Instrument performance can be adversely affected by installation and application problems as well as by hardware problems. Investigate the problems in the order listed below, and use the information in this section to solve them. Below is the list of problems an ordered list for reference and If replacement of any part is required, follow the procedures in "Part List" on page 167.

- Installation related problems
- Application related problems
- Hardware and software related problems

Installation related problems

Go through the section "Installation" on page 25 to make sure the DRC901C has been properly installed.

ATTENTION:

1. System noise induced into the recorder may result in transient abnormalities in performance.
2. If system noise is suspected, completely isolate the recorder from all field wiring. Use calibration sources to simulate PV and check all recorder and control functions, that is, pen functions, chart trace etc.

Application related problems

Review the application of the recorder; then, if required, direct your questions to the local sales office.

Hardware and software related problems

Observe the symptoms to identify typical failures which may occur in the recorder. Follow the troubleshooting procedures to correct the problems.

Troubleshooting Procedures

Observable Symptoms of Failure

The troubleshooting procedures for the observable symptoms of failure are shown in "Recorder Failure Troubleshooting" on the next page. Each procedure gives the instruction for a problem to be solved.

Check Installation

If a set of symptoms still persists, refer to "Installation" on page 25 and "Configuration of Recorder with Display" on page 51 to ensure that the recorder has been installed and set up properly.

Equipment needed

You will need a voltmeter to troubleshoot the symptoms listed in the tables that follow.

Safety precautions

Exercise appropriate safety precautions when troubleshooting the recorder operation.

WARNING: Troubleshooting may require access to hazardous live circuits, and should only be performed by qualified service personnel. More than one switch may be required to de-energize the unit before servicing.

Hardware and Software issues**Recorder Failure Troubleshooting**

S. No.	What to do?	How to do it or where to find the instructions?
1	Check the recorder input power supply voltage.	Measure the line voltage across the line and neutral connections at TB6.
2	Check the connections to TB6, and TB6 to power supply board.	Refer to AC wiring procedures in "Installation" on page 25
3	Check the system for brown-outs, heavy load switching, etc.; and conformance to installation instructions.	Refer to "Installation" on page 25
4	Check the output voltages of power supply board.	Refer to AC wiring procedures in "Installation" on page 25

Pen Trace Troubleshooting

S. No.	What to do?	How to do it or where to find the instructions?
1	Ensure that the recorder's configuration in the EasySet app is correct.	For more information, see the "Configuring Using Honeywell EasySet Application" on page 73.
2	If the issue still persists - Check the ink cartridge for proper installation.	Reposition or replace the ink cartridge as described in the section ""Replacing the Ink cartridge" on page 147".
3	If the issue still persists - Check that the chart agrees with the actuation type and chart set up.	Replace wrong chart with correct chart. Refer to the section ""Configuration, Start-up, and Operation of Recorder without Display" on page 44" for instructions for viewing the

S. No.	What to do?	How to do it or where to find the instructions?
		configuration. See "Replacement of Chart" on page 146. Check Pen High and Pen Low is within the chart range.
4	If the issue still persists - Check the pen alignment.	Follow the procedure in "Alignment of Pen at 0 and 100%" on page 155.

Chart Rotation Troubleshooting

S. No.	What to do?	How to do it or where to find the instructions?
1	Ensure that the recorder's configuration in the EasySet app is correct.	For more information, refer the section "Configuring Using Honeywell EasySet Application" on page 73.
2	Check the chart installation.	Turn the chart until the desired time line on the chart is aligned with the time index on the chart plate and Pen 1 before closing the locking clip on the hub. Push down on the lifter to return the pen(s) to the chart. CAUTION: Do not try to rotate the hub as the motor might get damaged.
3	Check the chart rotation selection. Change settings if incorrect for application.	Ensure that the chart rotation selection in chart setup group is selected as 'Start'.
4	Run the step test.	Refer to "Setting up the Recorder for Operation" on page 45.

S. No.	What to do?	How to do it or where to find the instructions?
5	Check the motor cable plug connection at connector P11 on the CPU board.	Power down the recorder, then visually examine the plug and reset it.
6	Replace the chart motor.	Refer to the replacement procedure in the "Chart Motor Replacement Instructions Sheet (DRCDOC-X012-en-100A)".
7	Replace the CPU board.	Refer to the replacement procedure in the "CPU Board Replacement Instructions Sheet (DRCDOC-X007-en-100A)".

Troubleshooting Erratic Pen Movement

S. No.	What to do?	How to do it or where to find the instructions?
1	Ensure that the recorder's configuration in the EasySet app is correct.	For more information, refer the section "Configuring Using Honeywell EasySet Application" on page 73.
2	Check the sensor connections on the J5 connector on the AI card.	Replace the sensor lead wires as needed. Tighten the connections.
3	Check the pen and input configuration data on the EasySet app.	Refer to "Configuration of Recorder without Display" on page 45.
4	Run the step test for the Pen with the problem.	Refer to "Setting up the Recorder for Operation" on page 45.
5	Swap the input connections to the	

S. No.	What to do?	How to do it or where to find the instructions?
	unused channels (Ch.3 and Ch.4).	
6	Replace the AI card.	Refer to the replacement procedure in the section "AI Card Replacement Instructions Sheet (DRCDOC-X010-en-100A)".
7	Replace the chart motor.	Refer to the replacement procedure in the "Chart Motor Replacement Instructions Sheet (DRCDOC-X012-en-100A)".
8	Replace the CPU board.	Refer to the replacement procedure in the "CPU Board Replacement Instructions Sheet (DRCDOC-X007-en-100A)".

Alignment of Pen at 0 and 100%

CAUTION: When the unit is powered a potentially kill shock hazard exists at the AC line connections at TB6. Make sure the unit power is disconnected before starting the procedure, required to de-energize the recorder. Failure to observe this precaution can result in exposure to a potentially kill shock hazard.

You can align the pens to the "0th" and "100th" positions on the chart. If humidity causes the chart to change size, repeat the pen alignment procedure as needed. To know about the pen alignment procedure, refer to the *Pen Alignment Instruction sheet (DRCDOC-X006-en-100A)*.

Troubleshooting of a Recorder with Display

This section explains the troubleshooting procedure for the recorders with display. Troubleshooting uses self-diagnostic test results and error messages, as well as some observable symptoms of failure.

Troubleshooting may require access to hazardous live circuits, and should only be performed by qualified service personnel.

Types of problems

Instrument performance can be adversely affected by installation and application problems as well as by hardware problems. Investigate the problems in the order listed below, and use the information in this section to solve them. Below is the list of problems an ordered list for reference and If replacement of any part is required, follow the procedures in "Part List" on page 167.

- Installation related problems
- Application related problems
- Hardware and software related problems

Installation related problems

Go through the section "Installation" on page 25 to make sure the DRC901C has been properly installed. Document 51-52-05-01 How to Apply Digital Instrumentation in Severe Electrical Noise Environments can provide additional relevant information.

ATTENTION:

1. System noise induced into the recorder may result in transient abnormalities in performance.
2. If system noise is suspected, completely isolate the recorder from all field wiring. Use calibration sources to simulate PV and check all the recorder functions, i.e., pen functions, chart trace etc.

Application related problems

Review the application of the recorder; then, if required, direct your questions to the local sales office.

Hardware and software related problems

Observe the symptoms to identify typical failures which may occur in the recorder. Follow the troubleshooting procedures to correct the problems.

Self Diagnostics

Power up tests

When the recorder is powered-up, [self-diagnostics](#) are run by the software. As the tests are run, the display indicates whether the tests were passed or failed as described below.

Background Tests

During normal operation of the recorder, tests of the configuration and calibration run in the background. If the recorder fails one of the tests, the appropriate message will be displayed as described in "Self Diagnostics" above

Troubleshooting Procedures

The troubleshooting procedures for the observable symptoms of failure are shown in "Recorder Failure Troubleshooting" on page 152. Each procedure gives the instruction for a problem to be solved.

Equipment needed

You will need the following equipment in order to troubleshoot the symptoms listed in the tables that follow:

- DC Milliammeter – mA DC
- Calibration sources – T/c, mV, Volt, etc.
- Voltmeter

Safety precautions

Exercise appropriate safety precautions when troubleshooting the recorder operation.

WARNING: Troubleshooting may require access to hazardous live circuits, and should only be performed by qualified service personnel. More than one switch may be required to de-energize the unit before servicing.

Recorder Failure Troubleshooting

S. No.	What to do?	How to do it or where to find the instructions?
1	Check the recorder input power supply voltage.	Measure the line voltage across the line and neutral connections at TB6.
2	Check the connections to TB6, and TB6 to power supply board.	Refer to AC wiring procedures in "Installation" on page 25
3	Check the system for brown-outs, heavy load switching, etc.; and conformance to installation instructions.	Refer to "Installation" on page 25.
4	Check the output voltages of power supply board.	Refer to AC wiring procedures in "Installation" on page 25

Pen Trace Troubleshooting

S. No.	What to do?	How to do it or where to find the instructions?
1	Check the ink cartridge for proper installation.	Reposition or replace the ink cartridge as described in the section ""Replacing the Ink cartridge" on page 147".
2	Check that the chart agrees with the actuation type and chart set up.	Replace wrong chart with correct chart. Refer to "Configuration, Start-up, and Operation of Recorder with Display" on page 49 for instructions for viewing the configuration. See "Replacement of Chart" on page 146. Check Pen High and Pen Low is within the chart range.

S. No.	What to do?	How to do it or where to find the instructions?
3	Check the pen alignment.	Follow the procedure in "Alignment of Pen at 0 and 100%" on page 162.

Chart Rotation Troubleshooting

S. No.	What to do?	How to do it or where to find the instructions?
1	Check the chart installation.	Turn the chart until the desired time line on the chart is aligned with the time index on the chart plate and Pen 1 before closing the locking clip on the hub. Push down on the lifter to return the pen(s) to the chart. CAUTION: Do not try to rotate the hub as the motor might get damaged.
2	Check the chart rotation selection. Change settings if incorrect for application.	Ensure that the chart rotation selection in chart setup group is selected as 'Start'.
3	Run the step test.	Refer to "Start-up of Recorder with Display" on page 62.
4	Check the motor cable plug connection at connector P11 on the CPU board.	Power down the recorder, then visually examine the plug and reset it.
5	Replace the chart motor.	Refer to the replacement procedure in the "Chart Motor Replacement Instructions Sheet (DRCDOC-X012- en-100A)".

S. No.	What to do?	How to do it or where to find the instructions?
6	Replace the CPU board.	Refer to the replacement procedure in the "CPU Board Replacement Instructions Sheet (DRCDOC-X007- en-100A)".

Troubleshooting Erratic Pen Movement

S. No.	What to do?	How to do it or where to find the instructions?
1	Check the sensor connections on the J5 connector on the AI card.	Replace the sensor lead wires as needed. Tighten the connections.
2	Check the pen and input configuration data.	Refer to "Configuration of Recorder without Display" on page 45.
3	Run the step test for the Pen with the problem.	Refer to "Start-up of Recorder with Display" on page 62
4	Swap the input connections to the unused channels (Ch.3 and Ch.4).	
5	Replace the AI card.	Refer to the replacement procedure in the section "AI Card Replacement Instructions Sheet (DRCDOC-X010-en-100A)".
6	Replace the chart motor.	Refer to the replacement procedure in the "Chart Motor Replacement Instructions Sheet (DRCDOC-X012-en-100A)".
7	Replace the CPU board.	Refer to the replacement procedure in the "CPU Board Replacement Instructions Sheet (DRCDOC-X007-en-100A)".

Troubleshooting the Display

S. No.	What to do?	How to do it or where to find the instructions?
1	Run a Key Test to check the operation of the displays.	Refer to "Configuration of Recorder with Display" on page 51.
2	Verify correct alignment of display cable with pins on connector at display module and CPU board.	Ensure tracks on cable are aligned with pins on connector.
3	Replace the display assembly or display cables, as required.	Refer to the replacement procedure in Section 9 – Replacing Hardware Assemblies.

Troubleshooting Modbus Communications

S. No.	What to do?	How to do it or where to find the instructions?
1	Verify that communications are enabled.	Refer to "Configuration of Recorder without Display" on page 45.
2	Check that the configured baud rate is correct.	Refer to "Configuration of Recorder without Display" on page 45.
3	Check that the device address is correct. Each address must be unique. A recorder with two pens must have a unique address for each pen channel.	Refer to "Configuration of Recorder without Display" on page 45.
4	Check that the communication wires are properly connected	Refer to "Installation" on page 25

S. No.	What to do?	How to do it or where to find the instructions?
	to the J3 connector on the communication printed circuit assembly (PCA).	
5	Verify that the communication cable connects J2 on the communication PCA to J3 on the PCA for Pen 1. The PCA for Pen 1 is on the right when facing the recorder. If communication is used for Pen 2, another communication cable must connect J1 on the communication PCA with J3 on the PCA for Pen 2.	
6	Replace the communication PCA.	

Alignment of Pen at 0 and 100%

CAUTION: When the unit is powered a potentially kill shock hazard exists at the AC line connections at TB6. Make sure the unit power is disconnected before starting the procedure, required to de-energize the recorder. Failure to observe this precaution can result in exposure to a potentially kill shock hazard.

You can align the pens to the "0th" and "100th" positions on the chart. If humidity causes the chart to change size, repeat the pen alignment procedure as needed. To know about the pen alignment procedure, refer to the *Pen Alignment Instruction sheet (DRCDOC-X006-en-100A)*.

SECURITY

In this section:

<i>Security Features</i>	164
<i>Physical Security</i>	165
<i>System Logs</i>	166

Security Features

The DRC901C recorder provides the user with the following security features.

- **Boot-up:** The recorder is designed to load and execute firmware that is cryptographically signed by Honeywell. Any firmware that does not have a valid signature will not execute on the recorder. The recorder validates the firmware before executing it at the boot-up phase.
- **Secure firmware upgrade through EasySet App:** The EasySet App is a password protected app with firmware upgrade feature. The firmware contains checksum that prevents the unauthorized firmware from being loaded to the recorder as well as protects the existing firmware that has been already loaded to the recorder from being modified.
- **Password protection to avoid unauthorized access via EasySet App and Display (HMI).**
- **Password policy is implemented for securing newly created passwords.** It is recommended to change the passwords frequently to avoid any unauthorized access.

The secure password policy guidelines are as follows:

- Password must be between 8 and 16 alphanumeric characters in length.
- Password must include at least one uppercase letter, one lowercase letter, one number, and one special character.
- Password must not have more than two identical consecutive characters (e.g., AAA222qqq***).
- Password login timeout on HMI (Display) is 30 minutes from the last touch.
- **For forgot password in HMI (Display) and Honeywell EasySet App:** The user needs to contact the [technical support team](#) and share the serial number of the recorder (i.e., share the last six digit of the serial number on the label), along with the date by when the password needs to be created. The technical support team generates a temporary password that is valid for one day. The user must then change their password using this temporary password within that day.
- Includes a microcontroller computer chip that ensures secure storage of the passwords, certificates, or encryption keys that are used to authenticate the recorder.

ATTENTION: Please note that the RS485 Modbus communication is not secure by default, so it is recommended to physically secure the connections.

Physical Security

The physical security related to the DRC901C recorder are as follows:

- Hardware enclosure to ensure physical protection of the device.
- Door locking mechanism to secure the internal components.
- The Config Switch (S1), located on the CPU board, enables the user to either lock or unlock the configurations for modification. When the switch is set to ON, the configurations are in a read-only state, meaning they cannot be modified. In contrast, when the switch is set to OFF, the configurations are in read/write mode, allowing the user to modify the configurations.

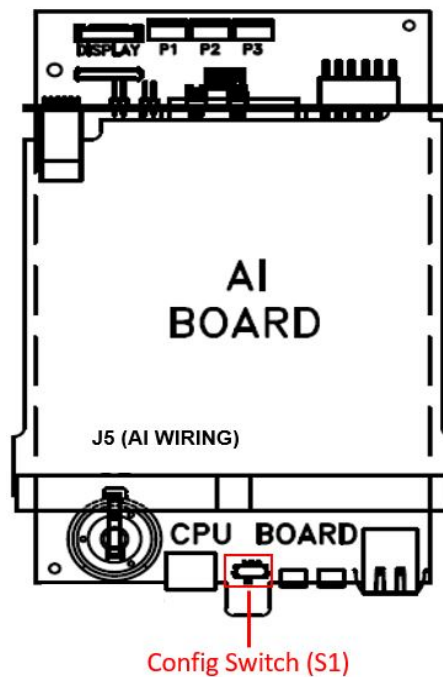


Figure 10-1: Config Switch (S1)

- Development programming port JTAG and Debug USB port is disabled. These ports are disabled in the production firmware.
- Ethernet port is disabled for the R100.0 release.

System Logs

The logs can be downloaded from EasySet app for diagnosing the issues. For more information on the type of logs, see "Logs" on page 129.

PART LIST

In this section:

<i>Exploded Views</i>	168
<i>Available 10-inch charts</i>	173

This section provides the replacement parts lists for the DRC901C Circular Chart Recorder. Most parts are supplied on an optimum replacement unit basis; that is, part numbers are given for complete printed circuit assemblies rather than for individual components.

The figures that follow are exploded views of the DRC901C recorder. Each part is labeled with a key number and the key numbers are listed in tables with associated part numbers.

When ordering parts, be sure to specify your recorder's serial and model numbers (on chartplate) as well as the part number.

Exploded Views

Door Assembly

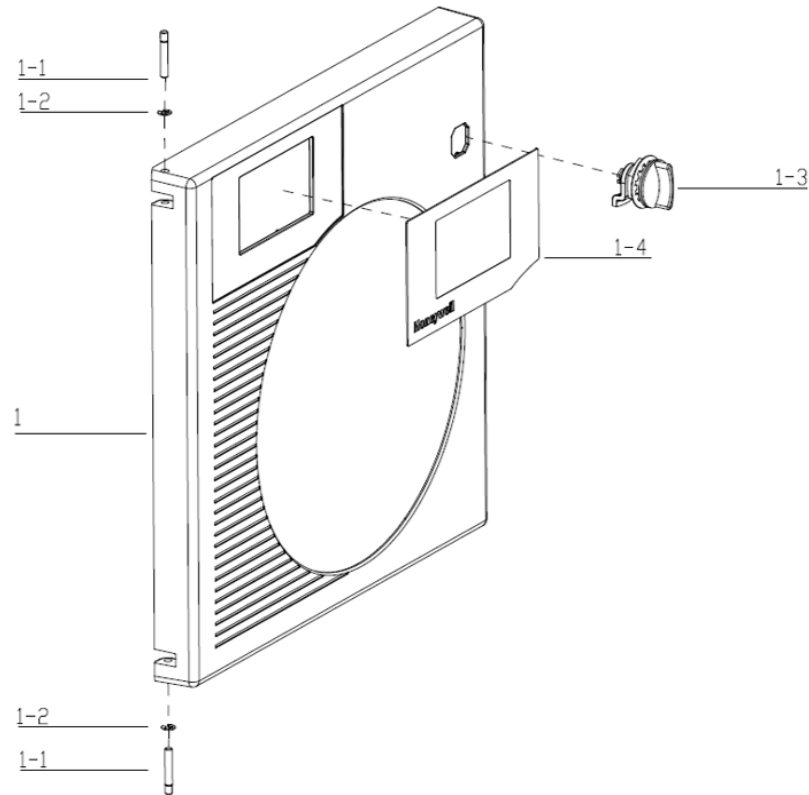


Figure 11-1: Door Assembly

Table 11-1: Door Assembly Parts

Item Number	Part Number	Description	Quantity per Unit
1	50191119-501	Spare Kit, DRC901C DOOR ASSEMBLY	1
1-1	30756409-001	Spare Kit	2
1-2		Door Hardware Kit	2
1-3	51309609-503	Spare Kit, Latch/Lock Assembly Kit*	1
	30757307-503	Spare Kit, Key Only for Lock Assembly*	1
1-4	50191124-501	Spare Kit, Display Window (With Display)	1
	50191124-502	Spare Kit, Display Window (No Display)	1
*Parts included with applicable door assembly.			

Chart Plate

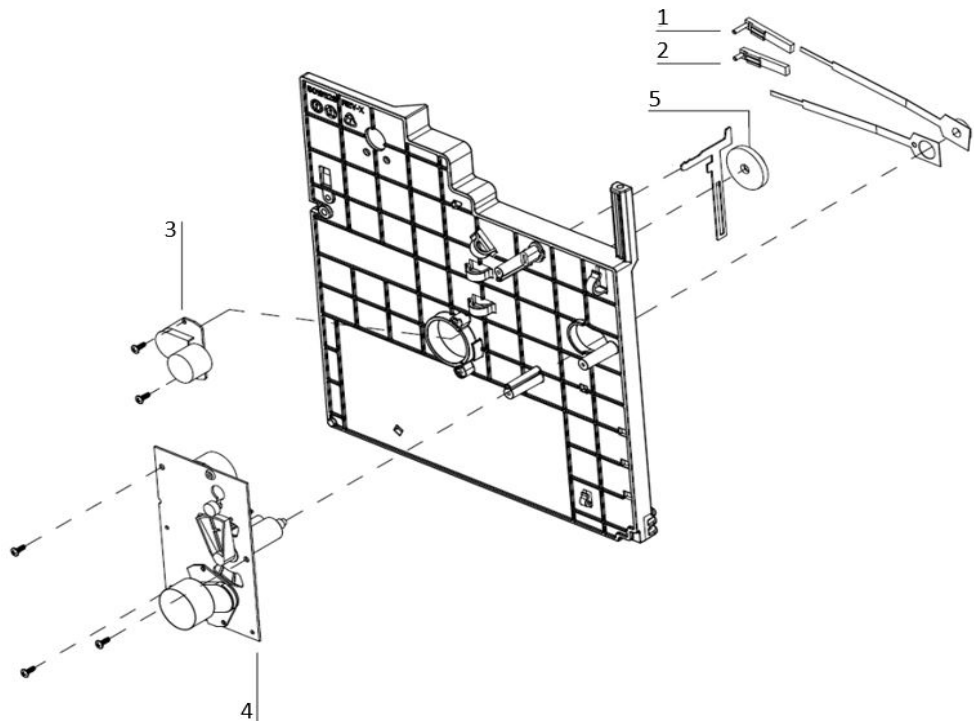


Figure 11-2: Chart Plate Assembly

Table 11-2: Chart Plate Assembly Parts

Item Number	Part Number	Description	Quantity per Unit
1	30735489-007	Spare Kit, No. 1 Purple Pen Cartridge (six pack)	6
2	30735489-002	Spare Kit, No. 2 Red Pen Cartridge (six pack)	6
3	30756113-501	Spare Kit, Chart Motor	1

Item Number	Part Number	Description	Quantity per Unit
4	30755833-501 30755833-502	Spare Kit, Servo Plate Assembly: 1-pen model 2-pen model	1 1
5	(K)30756150-501	Spare Kit, Chart Hub Kit	1
(K) denotes that the part number is for the parts kit in which the described part is included. The described part cannot be ordered separately.			

Recorder Components Without Options

Table 11-3: Basic Recorder Parts

Item Number	Part Number	Description	Quantity per Unit
1	50182519-501	Spare Kit, DRC900C Main CPU Board Assembly ^{1, 2}	1
2	50098156-511	Spare Kit, Backplane Board Assembly, DRC900C	1
3	50145652-511	Spare Kit, 4CH Analog Input Board Assembly	1
4	50189403-501	Spare Kit, DRC900C 4.0" Display Assembly ²	1
5	51453015-512	Spare Kit, DRC900C Power	1

Item Number	Part Number	Description	Quantity per Unit
		Supply Assembly	
¹The user must supply the Model number and Serial number of the existing recorder when placing the order for CPU Board Assembly. ²Currently, the item is not available for ordering.			

Available 10-inch charts

A. Single Range Charts

The following table lists the chart part numbers for the available 10-inch single range charts.

Table 11-4: 10-inch Single Range Chart Part Numbers

Chart Type	Range	Units	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
B Thermocouple	0 to 1800	C	135	
J Thermocouple	-18 to 425	C	028	028
J Thermocouple	-45 to +150	C	027	027
J Thermocouple	-50 to +300	F	019	019
J Thermocouple	0 to 150	C	070	070
J Thermocouple	0 to 200	F	114	
J Thermocouple	0 to 250	C	024	024
J Thermocouple	0 to 300	F	002	002
J Thermocouple	0 to 300	C	062	062
J Thermocouple	0 to 400	F	012	006
J Thermocouple	0 to 400	C	063	063
J Thermocouple	0 to 500	F	013	007

Chapter 11 - Part List

Chart Type	Range	Units	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
J Thermocouple	0 to 600	F	003	008
J Thermocouple	0 to 800	F	014	009
J Thermocouple	0 to 1000	F	015	010
J Thermocouple	0 to 1200	F	004	011
J Thermocouple	0 to 1600	F	018	018
J Thermocouple	10 to 340	C	057	057
J Thermocouple	10 to 76	C	030	030
J Thermocouple	50 to 1400	F	029	029
J Thermocouple	50 to 650	F	056	056
J Thermocouple	100 to 260	C	094	
J Thermocouple	150 to 750	F		150
J Thermocouple	810 to 910	F	230	
K Thermocouple	-18 to 1320	C	031	031
K Thermocouple	0 to 200	C	086	
K Thermocouple	0 to 400	F	053	053
K Thermocouple	0 to 400	C	064	064
K Thermocouple	0 to 500	C	205	

Chapter 11 - Part List

Chart Type	Range	Units	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
K Thermocouple	0 to 600	C	059	059
K Thermocouple	0 to 800	C	060	060
K Thermocouple	0 to 1000	F	007	016
K Thermocouple	0 to 1000	C	049	049
K Thermocouple	0 to 1200	F	006	012
K Thermocouple	0 to 1200	C	065	
K Thermocouple	0 to 1600	F	016	013
K Thermocouple	0 to 2000	F	005	014
K Thermocouple	0 to 2400	F	009	015
K Thermocouple	800 to 1000	F	227	
R Thermocouple	0 to 1600	C	017	017
R Thermocouple	0 to 2500	F	025	025
R Thermocouple	30 to 2900	F	032	032
R Thermocouple	800 to 1600	C	089	
S Thermocouple	0 to 1600	C	066	
S Thermocouple	0 to 3000	F	147	147
T Thermocouple	-250 to +150	F		042

Chapter 11 - Part List

Chart Type	Range	Units	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
T Thermocouple	-130 to +410	F	033	033
T Thermocouple	-100 to +100	C	069	069
T Thermocouple	-90 to +210	C	034	034
T Thermocouple	0 to 100	C		100
T Thermocouple	0 to 150	C	103	
T Thermocouple	0 to 300	C		079
T Thermocouple	+75 to -200	C		058
T Thermocouple	+125 to -105	C	098	
W5W26 Thermocouple	0 to 1800	C	157	
Linear	-200 to +200			199
Linear	-100 to +200		232	178
Linear	-100 to +100	F	201	
Linear	-85 to +190		179	
Linear	-75 to +260		178	179
Linear	-60 to +215		088	
Linear	-50 to +50			218
Linear	-40 to +10			142

Chapter 11 - Part List

Chart Type	Range	Units	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
Linear	-35 to +75	C	023	023
Linear	-30 to +100	C	210	
Linear	-30 to +20	F	204	
Linear	-18 to 94		035	
Linear	-10 to 100			149
Linear	-5 to 50	C	022	197/022
Linear	0 to .6			203
Linear	0 to 1		211	202
Linear	0 to 2	MG/L		217
Linear	0 to 2	MGD	175	129
Linear	0 to 5			074
Linear	0 to 8		212	
Linear	0 to 10		076	076
Linear	0 to 14		036	036
Linear	0 to 15		119	085
Linear	0 to 20		071	071
Linear	0 to 24	FEET		196

Chapter 11 - Part List

Chart Type	Range	Units	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
Linear	0 to 25		095	095
Linear	0 to 30		040	040
Linear	0 to 40		110	041
Linear	0 to 45		078	
Linear	0 to 50			051
Linear	0 to 55		130	
Linear	0 to 70			075
Linear	0 to 80		120	
Linear	0 to 100		001	001
Linear	0 to 150		180	
Linear	0 to 200		010	004
Linear	0 to 300		050	050
Linear	0 to 350		037	037
Linear	0 to 400		011	005
Linear	0 to 500		104	
Linear	0 to 600		052	
Linear	0 to 750		223	

Chapter 11 - Part List

Chart Type	Range	Units	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
Linear	0 to 800		137	
Linear	0 to 1000		173	
Linear	0 to 1200		054	108
Linear	0 to 1600			109
Linear	0 to 2000	F	202	
Linear	0 to 2400	GPM		219
Linear	0 to 2500		113	
Linear	0 to 7000		123	
Linear	0 to 8000		208	
Linear	0 to 25000		111	
Linear	1.3 to 1.8			
Linear	5 to 9	PH		093
Linear	10 to 20	METER	231	
Linear	20 to 120		039	039
Linear	40 to 70			125
Linear	50 to 70			141
Linear	50 to 250		008	003

Chapter 11 - Part List

Chart Type	Range	Units	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
Linear	70 to 140		038	038
Linear	100 to 200		132	
Linear	100 to 300	F	131	
Linear	100 to 600	F	140	
Linear	180 to 30	Reverse range		224
Linear	1500 to 2500			
Linear	2250 to 2500	F	209	
Linear	1300 to 2600	F	203	
RTD-PT100 a=0.00391	-200 to +100	F	044	044
RTD-PT100 a=0.00391	-125 to +375	F	020	020
RTD-PT100 a=0.00391	-100 to +50	C	091	
RTD-PT100 a=0.00391	-100 to +100	C	080	080
RTD-PT100 a=0.00391	-100 to +200	C	021	021
RTD-PT100 a=0.00391	-100 to +500	F	099	
RTD-PT100 a=0.00391	-85 to +190	C	047	
RTD-PT100 a=0.00391	-75 to +260	C	055	055
RTD-PT100 a=0.00391	-50 to +25	C	048	048

Chapter 11 - Part List

Chart Type	Range	Units	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
RTD-PT100 a=0.00391	-50 to +50	C	092	
RTD-PT100 a=0.00391	-30 to +170	F	087	087
RTD-PT100 a=0.00391	-25 to +125	C	045	045
RTD-PT100 a=0.00391	-20 to +30	F		117
RTD-PT100 a=0.00391	0 to -100	C		084
RTD-PT100 a=0.00391	0 to 120	C	144	
RTD-PT100 a=0.00391	0 to 150	C	122	
RTD-PT100 a=0.00391	0 to 250	C	068	
RTD-PT100 a=0.00391	0 to 400	C	081	081
RTD-PT100 a=0.00391	49 to -95	C		083
RTD-PT100 a=0.00391	50 to 100	C	061	
RTD-PT100 a=0.00391	50 to 150	C	116	116
	100 to 200	F	132	
	120 to -140	F	082	
	180 to 30	F	121	
	250 to 300	F	106	
RTD-PT100 a=0.00385	-100 to +100	C	080	080

Chapter 11 - Part List

Chart Type	Range	Units	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
RTD-PT100 a=0.00385	-40 to +60	C	067	067
RTD-PT100 a=0.00385	50 to 100		061	061
RTD-PT100 a=0.00385	50 to 120		134	
RTD-PT100 a=0.00385	0 to 60	C	161	
RTD-PT100 a=0.00385	0 to 250	C	068	
RTD-PT100 a=0.00385	0 to 400		081	081

Dual Range Charts

The following table lists the chart part numbers for the available 10-inch dual range charts.

Table 11-5: 10-inch Dual Range Chart Part Numbers

Calibration	Range 1	Range 2	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
Linear	0 to 15	0 to 3,000,000	200	
Linear	-100 to +200	35 to 0	600	600*
Linear	0 to 200	63 to 0		602*
Linear	0 to 2000	0 to 90		633*
Linear	-18 to +94	35 to 0	603	
Linear	-18 to +94	35 to 0		603
Linear	-22 to +158	0 to 10	174*	
Linear	0 to 50	0 to 100	606*	606
Linear	0 to 60	0 to 100	138*	
Linear	0 to 100	-30 to +70	601	601
Linear	0 to 100	0 to 14	621*	
Linear	0 to 100	-80 to +20		653*
Linear	40 to 140	30" Hg to 40 PSI		148*

Chapter 11 - Part List

Calibration	Range 1	Range 2	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
Linear	50 to 150	0 to 100	097	
Linear	50 to 150	20 to 0	609	
Linear	50 to 150	0 to 100		097
Linear %/Linear PH	0 to 100	0 to 14		213
Linear/K T/C Deg. F	0 to 10	0 °F to 2000 °F	640*	
Linear/RTD Deg. C	0 to 100	-87°C to +191 °C	145*	
Linear Deg. C/Linear	-40 °C to +150 °C	0 to 100 RH	660*	660*
Linear Deg. F/Linear % RH	0 °F to 120 °F	0 to 100	207	
Linear Deg. F/Linear	-40 °F to +300 °F	0 to 100 RH	661*	661*
Linear Deg. F/K T/C Deg. F	0 °F to 3000 °F	0 °F to 2000 °F	645*	
Linear Deg. F/Linear	32 °F to 122 °F	0 to 100		151*
Linear Deg. F/PSI Linear	0 °F to 1400 °F	0 to 5000		
Linear Deg. C/Linear	-18 °C to +37 °C	0 to 100		637*

Chapter 11 - Part List

Calibration	Range 1	Range 2	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
Linear GPM/Linear PH	0 to 100	0 to 14		214
Linear GPM/Linear PH	0 to 250	0 to 14		200
Linear PSI/Linear GPM	0 to 150	0 to 7800		204
J T/C Deg. F/Linear	0 °F to 600 °F	0 to 2000 PSI	647*	
J T/C Deg. F/Linear	0 °F to 300 °F	0 to 100	617*	617*
J T/C Deg. F/Linear	0 °F to 300 °F	0 to 400	656*	
J T/C Deg. F/Linear	0 °F to 400 °F	0 to 100	124*	
J T/C Deg. F/Linear	0 °F to 400 °F	0 to 800	629*	
J T/C Deg. F/Linear	0 °F to 600 °F	0 to 100	611*	
J T/C Deg. F/Linear	0 °F to 300 °F	0 to 500	636*	
J T/C Deg. C/K T/C Deg. C	-18 °C to +315 °C	-18 °C to +1315 °C	112*	
J T/C Deg. F/J T/C Deg. C	95 °F to 455 °F	35 °C to 235 °C	026*	026*
J T/C Deg. F/K T/C Deg. F	0 °F to 300 °F	0 °F to 1500 °F	186	
J T/C Deg. F	0 °F to 600 °F	0 °F to 2400 °F	604*	
K T/C Deg. F/J T/C	1300 °F to 2000	400 °F to 800 °F	649*	

Chapter 11 - Part List

Calibration	Range 1	Range 2	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
Deg. F	°F			
J T/C Deg. F	0 °F to 300 °F	0 °F to 1600 °F	651*	
K T/C Deg. F/Linear	-100 °F to +900 °F	0 to 10	635*	
K T/C Deg. F/Linear	0 °F to 2000 °F	0 to 2	163*	
K T/C Deg. F/Linear	500 °F to 2000 °F	0 to 1.5	127*	
T T/C Deg. F/Linear	50 °F to 250 °F	0 to 100	643*	
T T/C Deg. F/Linear	-50 °F to +300 °F	0 to 100		631*
T T/C Deg. C/Linear	-100 °C to +100 °C	0 to 100		162*
T T/C Deg. C/Linear	-80 °C to +180 °C	0 to 100	657*	
RTD Deg. F/Linear	100 °F to 300 °F	0 to 160	152*	
RTD Deg. C/Linear	-5 °C to +50 °C	0 to 100		102*
RTD Deg. C/Linear	-10 °C to +60 °C	0 to 100		616*
RTD Deg. C/Linear	-35 °C to +75 °C	0 to 100		101*
RTD Deg. C/Linear	-76 °C to +100	35 to 0	607*	

Chapter 11 - Part List

Calibration	Range 1	Range 2	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
	°C			
RTD Deg. C/Linear	-50 °C to +100 °C	0 to 100	638*	638*
RTD Deg. C/Linear	-76 °C to +100 °C	35 to 0		607*
RTD Deg. C/Linear	-75 °C to +180 °C	35 to 0	608*	
RTD Deg. C/Linear	-85 °C to +190 °C	0 to 100	154*	
RTD Deg. C/Linear	-85 °C to +190 °C	0 to 100	659*	
RTD Deg. C/Linear	12 °C to 93 °C	0 to 100	644*	
RTD Deg. C/Linear	50 °C to 150 °C	0 to 50	646*	
RTD Deg. F/Linear	-50 °F to +250 °F	0 to 1000		642*
RTD Deg. F/Linear	0 °F to 300 °F	0 to 100	632*	
RTD Deg. F/Linear	100 °F to 300 °F	0 to 160	652*	
RTD Deg. F/Linear	-10 °F to +60 °F	0 to 100	616*	
RTD Deg. C/Linear	-100 °C to +200 °C	0 to 100	628*	628*

Chapter 11 - Part List

Calibration	Range 1	Range 2	24 HR P/N 24001660-XXX	7 DAY P/N 24001661-XXX
RTD Deg. C/Linear	-18 °C to +94 °C	0 to 100	155*	
RTD Deg. C/Linear PSIA	0 °C to 150 °C	0 to 25	222	
RTD Deg. C/RTD Deg. C	0 °C to 100 °C	50 °C to 120 °C		641*
RTD Deg. C/RTD Deg. C	-23.3 °C to +93.3 °C	-87.2 °C to +177 °C	206	
RTD Deg. F/RTD Deg. F	14 °F to 122 °F	104 °F to 212 °F	619*	
RTD Deg. C/RTD Deg. C	-10 °C to +50 °C	40 °C to 100 °C	618*	
*A minimum purchase is required.				

LOGISTICS

In this section:

<i>Transport and Storage</i>	190
<i>Disposal</i>	190

Transport and Storage

ATTENTION:

1. Make sure that the recorders must be transported and stored carefully in an upright position.
2. Check each part of the product after delivery for any damage which might occur during the transportation, and report if any damage is seen.
3. During transportation and storage, all the open holes must be closed.
4. The transport and storage temperature is printed on the label. For more information on the transport and storage temperature, refer *Technical Specification, DRCDOC-X002-en-100A*.

Disposal

Components, especially batteries, must be discarded separately.

On request, old units can be returned carried paid to the manufacturer in accordance with the relevant waste legislation requirements.

For support, contact your local [Honeywell Process Solutions Customer Contact Center](#)

NOTICES

Trademarks

Experion[®], PlantScape[®], SafeBrowse[®], TotalPlant[®], and TDC 3000[®] are registered trademarks of Honeywell International, Inc.

Experion[®], PlantScape[®], SafeBrowse[®], TotalPlant[®], and TDC 3000[®] are registered trademarks of Honeywell International, Inc.

Experion[®], PlantScape[®], SafeBrowse[®], and TotalPlant[®] are registered trademarks of Honeywell International Inc.

Experion[®], PlantScape[®], and SafeBrowse[®] are registered trademarks of Honeywell International, Inc.

Experion[®] and SafeBrowse[®] are registered trademarks of Honeywell International, Inc.

Experion[®] is a registered trademark of Honeywell International, Inc.

PlantCruise[™] is a trademark of Honeywell International, Inc.

ControlEdge[™] is a trademark of Honeywell International, Inc.

ControlEdge[™] is a trademark of Honeywell International, Inc.

OneWireless[™] is a trademark of Honeywell International, Inc.

OneWireless[™] is a trademark of Honeywell International, Inc.

Matrikon[®] and MatrikonOPC[™] are trademarks of Matrikon International. Matrikon International is a business unit of Honeywell International, Inc.

Movilizer[®] is a registered trademark of Movilizer GmbH. Movilizer GmbH is a business unit of Honeywell International, Inc.

Other trademarks

Microsoft and SQL Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Other brands or trademarks are trademarks of their respective owners.

Trademarks that appear in this document are used only to the benefit of the trademark owner, with no intention of trademark infringement.

Third-party licenses

This product may contain or be derived from materials, including software, of third parties. The third party materials may be subject to licenses, notices, restrictions and obligations imposed by the licensor. The licenses, notices, restrictions and obligations, if any, may be found in the materials accompanying the product, in the documents or files accompanying such third party materials, in a file named `third_party_licenses` on the media containing the product.

Documentation feedback

You can find the most up-to-date documents in the Support section of the Honeywell Process Solutions website at:

<https://process.honeywell.com/us/en/support/technical-publication>.

If you have comments about Honeywell Process Solutions documentation, send your feedback to: hpsdocs@honeywell.com

Use this email address to provide feedback, or to report errors and omissions in the documentation. For immediate help with a technical problem, contact HPS Technical Support through your local Customer Contact Center, or by raising a support request on the Honeywell Process Solutions Support website.

How to report a security vulnerability

For the purpose of submission, a security vulnerability is defined as a software defect or weakness that can be exploited to reduce the operational or security capabilities of the software.

Honeywell investigates all reports of security vulnerabilities affecting Honeywell products and services.

To report a potential security vulnerability against any Honeywell product, please follow the instructions at:

<https://www.honeywell.com/us/en/product-security>.

Support

For support, contact your local Honeywell Process Solutions Customer Contact Center (CCC). To find your local CCC visit the website, <https://process.honeywell.com/us/en/contact-us>.

Training classes

Honeywell holds technical training classes that are taught by process control systems experts. For more information about these classes, contact your Honeywell representative, or see <http://www.automationcollege.com>.

Factory information

Company name: HONEYWELL System Sensor de Mexico, S. de R.L. de C.V.

Company address: Avenida Miguel De La Madrid, #8102 Colonia Lote Bravo Ciudad Juarez, Chihuahua, C.P. 32695, México