



**EXPERION PKS**

**RELEASE 100.1**

## **Universal Marshalling solutions**

**Installation and User's Guide for Signal Conditioning Assembly (SCA)**

**HPN: 50149738-001**

**Version: AT1**

**Nov 2020**

---

---

## 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 2020 by Honeywell Measurex (Ireland) Ltd, All Rights Reserved

---

# Table of contents

<b>1</b>	<b>INTRODUCTION.....</b>	<b>9</b>
1.1	About this user guide.....	9
1.2	Intended audience .....	9
1.3	Prerequisite .....	9
1.4	References .....	9
1.5	Acronyms .....	10
<b>2</b>	<b>SAFETY INFORMATION.....</b>	<b>11</b>
2.1	Safety Measures.....	11
2.2	Condition of Acceptability.....	11
2.3	Safety Considerations.....	11
2.3.1	Explosion Hazard / Advertisement - Risque d'explosion.....	11
2.4	Security Guidelines.....	12
<b>3</b>	<b>PURPOSE.....</b>	<b>13</b>
3.1	Customer Problems .....	13
3.2	Universal Marshalling Solution.....	13
3.3	Benefits.....	14
3.4	Features.....	14
<b>4</b>	<b>SYSTEM SPECIFICATIONS.....</b>	<b>18</b>
4.1	Integrated FTA.....	18
4.2	USCA /UGIA Electrical specifications .....	20
4.3	Model numbers .....	21
4.4	General specifications .....	22
4.4.1	Environmental specifications.....	22
4.4.2	Module physical dimensions .....	23
4.5	Certifications and Compliances .....	23
4.5.1	Compliances.....	23
4.5.2	Hazardous environment and conformity for PTA, DIR & DOR .....	23
4.5.3	Hazardous environment and conformity for – UGAI, UGAO & UGDA.....	26
4.5.4	Hazardous environment and conformity for – UAIA, UAOA & UDXA .....	27
4.5.5	FTA label .....	27
4.6	Dimensions.....	28
4.6.1	FTA housing-Physical specifications.....	28
<b>5</b>	<b>SUPPORTED IO HARDWARE.....</b>	<b>29</b>
<b>6</b>	<b>INSTALLATION.....</b>	<b>31</b>

6.1	Installation declarations .....	31
6.1.1	Electrostatic discharge .....	31
6.2	Installation of SCA in a cabinet .....	31
6.3	Prerequisites .....	32
6.4	1,2 or 3 column assembly .....	32
6.5	Mounting .....	33
6.5.1	Mounting FTA Base to DIN Rail .....	33
6.5.2	Mounting FTA housing to the Base .....	34
6.6	Connecting the field wires .....	35
6.7	Connecting power .....	36
6.8	FTA Grounding .....	37
6.9	Adaptor module .....	39
6.10	Accessing key .....	40
6.11	Module installation .....	40
6.12	Accessing fuse .....	41
6.13	Knife Disconnect .....	42
6.14	Probe .....	43
6.15	Mounting without the I-brackets .....	43
6.16	Mounting without the I-brackets: connections .....	44
6.17	Cabinet assembly .....	44
<b>7</b>	<b>CABLE AND CONNECTOR PINOUTS .....</b>	<b>48</b>
7.1	Field side terminations .....	48
7.2	MTC connector terminations .....	48
7.3	Power supply connector terminations .....	49
<b>8</b>	<b>HARDWARE COMPONENTS .....</b>	<b>50</b>
8.1	Universal Pass Through Adapter (model CC-UPTA01) .....	50
8.1.1	Function .....	50
8.1.2	Features .....	50
8.1.3	Module physical specification .....	50
8.1.4	Functional .....	50
8.1.5	Passthrough Connection diagrams .....	51
8.1.6	Electrical .....	51
8.1.7	Associated part numbers .....	51
8.1.8	Label .....	52
8.1.9	Fuse rating .....	52
8.1.10	Loop Typical .....	52
8.2	Universal Digital Input Relay (model CC-UDIRO1) .....	53

---

8.2.1	Module descriptions.....	53
8.2.2	Module physical specification.....	53
8.2.3	Functional.....	53
8.2.4	Connection diagram.....	54
8.2.5	Features.....	54
8.2.6	Electrical.....	54
8.2.7	Associated part numbers.....	55
8.2.8	Label.....	55
8.2.9	Fuse rating.....	56
8.2.10	Protection scheme.....	56
8.2.11	Loop Typical.....	56
8.3	Universal Digital Output Relay (model CC-UDOR01).....	56
8.3.1	Provide module descriptions, features.....	56
8.3.2	Module physical specification.....	56
8.3.3	Functional.....	57
8.3.4	Connections diagram.....	57
8.3.5	Features.....	58
8.3.6	Electrical.....	58
8.3.7	Associated part numbers.....	59
8.3.8	Label.....	59
8.3.9	Fuse rating.....	59
8.3.10	Wiring options.....	60
8.3.11	Loop Typical.....	60
8.3.12	LED Indications.....	61
8.4	Universal Analog Input barrier (model CC-UGAI01).....	61
8.4.1	Module physical specification.....	61
8.4.2	Features.....	61
8.4.3	Connections diagram.....	62
8.4.4	Specification.....	62
8.4.5	Associated part numbers.....	64
8.4.6	Label.....	65
8.4.7	List of IO modules supported.....	65
8.4.8	Fuse rating.....	66
8.4.9	Protection scheme.....	66
8.4.10	Conditions of use.....	66
8.5	Universal Analog Input isolator (model CC- UAIA01).....	66
8.5.1	Module physical specification.....	66
8.5.2	Features.....	67

8.5.3	Connections diagram .....	67
8.5.4	Specification.....	68
8.5.5	Associated part numbers.....	69
8.5.6	Label.....	70
8.5.7	List of IO modules supported .....	70
8.5.8	Fuse rating.....	71
8.5.9	Protection scheme .....	71
8.5.10	Conditions of use .....	71
8.6	Universal Analog Output barrier (model CC- UGAO01).....	71
8.6.1	Module physical specification.....	71
8.6.2	Features .....	72
8.6.3	Connections diagram .....	72
8.6.4	Specification.....	72
8.6.5	Associated part numbers.....	74
8.6.6	Label.....	75
8.6.7	List of IO modules supported .....	75
8.6.8	Fuse rating.....	75
8.6.9	Protection scheme .....	76
8.6.10	Conditions of use.....	76
8.7	Universal Analog Output barrier (model CC- UAOA01).....	76
8.7.1	Module physical specification.....	76
8.7.2	Features .....	76
8.7.3	Connections diagram .....	77
8.7.4	Specification.....	77
8.7.5	Associated part numbers.....	79
8.7.6	Label.....	79
8.7.7	List of IO modules supported .....	80
8.7.8	Fuse rating.....	80
8.7.9	Protection scheme .....	80
8.7.10	Conditions of use .....	80
8.8	Universal Digital Input Output barrier (model CC- UGDA01).....	80
8.8.1	Module physical specification.....	81
8.8.2	Features .....	81
8.8.3	Connections diagram .....	82
8.8.4	Specification.....	82
8.8.5	Label.....	84
8.8.6	List of IO modules supported .....	85
8.8.7	Fuse rating.....	85

8.8.8	Protection scheme .....	85
8.9	Universal Digital Input Output isolator (model CC- UDXA01) .....	86
8.9.1	Module physical specification.....	86
8.9.2	Features .....	86
8.9.3	Connections diagram .....	87
8.9.4	Specification.....	87
8.9.5	Label .....	89
8.9.6	List of IO modules supported .....	89
8.9.7	Fuse rating.....	89
8.9.8	Protection scheme .....	89
8.10	Low Level Input Adapter (CC-ULLI01) .....	90
8.10.1	Function.....	90
8.10.2	Module Physical Specification.....	91
8.10.3	Features .....	91
8.10.4	Connections diagram .....	92
8.10.5	Specifications .....	92
8.10.6	Label.....	96
8.10.7	List of IO modules supported .....	96
8.10.8	Fuse rating.....	96
8.10.9	Protection scheme .....	96
8.10.10	Conditions of use .....	97
<b>9</b>	<b> TROUBLESHOOTING.....</b>	<b>98</b>
9.1	CC-USCA0s1 .....	98
9.2	CC-UDOR01.....	99
9.3	CC-UDIRO1 .....	100
9.4	CC-UPTA01 .....	101
9.5	CC- UGAI01 & CC-UAIA01 .....	101
9.6	CC- UGAA001 & CC-UAOA01 .....	103
9.7	CC- UGDA01 and CC-UDXA01 .....	104
9.8	CC- ULLI01.....	106
9.9	Field side cable faults.....	106
<b>10</b>	<b> MAINTENANCE .....</b>	<b>108</b>
10.1	Removal and installation under power .....	108
10.2	Spare parts list and description. ....	108
10.3	Disassembly .....	109
<b>11</b>	<b> REPAIR.....</b>	<b>113</b>
<b>12</b>	<b> NOTICES.....</b>	<b>114</b>



# 1 Introduction

The Universal Marshalling Solution delivers the next phase of Honeywell LEAP™, lean project implementation philosophy through standardization of marshalling design. Standardized (or universal) marshalling is achieved through central and distributed installations using standard cabinet configurations with signal conditioning assemblies.

Independence between I/O assignment and field wiring enables a flexible engineering schedule and eliminates unintentional access of I/O modules during maintenance. SCA enables the flexibility to combine a variety of field signals, while remaining separated from I/O modules and control system electronics. This unique feature means that SCA eliminates re-engineering and rewiring due to design changes.

Predesigned standard build cabinets reduce the complexities and reliance on non-standard third party solutions. The number of spares stocked and the amount of documentation required is reduced by eliminating multiple equipment configurations.

Honeywell serves as a single source vendor from instrumentation to control system.

This release of SCA includes pass through, disconnect, fusing, and relay functions.

## 1.1 About this user guide

The procedures in this guide are intended to give you the ability to perform installation, commissioning and maintenance activities of Signal Conditioning Assembly (SCA) with the Honeywell's Universal Marshalling solution.

## 1.2 Intended audience

This guide is intended for the following users:

- Persons responsible for system planning and marshalling hardware installation.
- Service persons responsible for routine maintenance of control and marshalling hardware, and who diagnose and repair faults.

## 1.3 Prerequisite

Basic knowledge of Industrial process automation and Honeywell's Experion control systems makes it easy to understand context and terminologies used in this document.

## 1.4 References

- Control Hardware Planning Guide – provides information related to planning and installation of Experion control hardware.
- Control Hardware Installation Guide - Provides an overview for the installation of Experion control hardware.

- Series C IO User's Guide - Describes Series C I/O hardware devices and configuration details.
- Signal Conditioning Assembly (SCA) HAZLOC Manual

## 1.5 Acronyms

Acronym	Expansion
SCA	Signal Conditioning Assembly
MTC	Mass Termination Cable
FTA	Field Termination Assembly
UPTA	Universal Pass Through Adapter
UDIR	Universal Digital Input Relay
UDOR	Universal Digital Output Relay
USCA	Universal Signal Conditioning Assembly
UAIA	Universal Analog Input Isolator Module
UGAI	Universal Analog Input Barrier Module
UAOA	Universal Analog Output Isolator Module
UGAO	Universal Analog Output Barrier Module
UDXA	Universal Digital IO isolator Module
UGDA	Universal Digital IO Barrier Module
UGIA	Universal Integrated FTA - IS
IOTA	Input Output Termination Assembly
I/O	Input and Output
IOM	Input Output Module
LLIA	Low Level Input Adapter
TC	Thermocouple
RTD	Resistance Temperature Detector
CJC	Cold Junction Compensation

## 2 Safety information

### 2.1 Safety Measures

SCA modules complies with the general safety standards and regulations. However, failure to operate this product as per the safety instructions available in this document may lead to hazards.

SCA modules are approved for the use in Hazardous areas such as Class1 Div2 Gr ABCD T4 & Zone 2, and IIC T4 Gc Locations with connections to Class I, Div2 and Zone 2, Group IIC locations. Permitted operating conditions are marked on labels for each SCA module. Check the operating condition limits of SCA before installing. One must be familiar with the currently applicable electrical installation standards and regulations before installing and operating SCA in hazardous areas. Installation, operation, and maintenance may only be performed by qualified personnel. Access to the circuits within the device is not permitted. Do not repair the device yourself or replace it with an equivalent device. Repairs may only be carried out by the manufacturer. Installation must be in accordance with any applicable local electrical requirements. For more details, refer to various electrical ratings in this document.

Signal Conditioning Assembly HAZLOC Manual provides the list of mandatory safety measures to be followed for HAZLOC applications.

### 2.2 Condition of Acceptability

SCA must be mounted inside a suitable housing with a minimum IP54 degree of protection for installation when used in accordance with IEC/ANSI/ISA 60079-15.

The housing must be a tool-secured enclosure that meets requirements as per IEC/ANSI/ISA 60079-0 and IEC/ANSI/ISA 60079-15 standards.

Do not connect/disconnect the device unless the power has been switched off or the area is deemed to be non-hazardous.

Installation must follow the enclosure, mounting, and segregation requirements of the application.

### 2.3 Safety Considerations

#### 2.3.1 Explosion Hazard / Advertisement - Risque d'explosion

 <b>WARNING</b>	<b>EXPLOSION HAZARD – DO NOT CONNECT OR DISCONNECT UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS OR UNDER PRESCRIBED SERVICE CONDITIONS.</b>
---	---

 <b>AVERTISSEMENT</b>	<b>RISQUE D'EXPLOSION – NE PAS BRANCHER OU DÉBRANCHER À MOINS D'ÊTRE DANS UN ENVIRONNEMENT CONSIDÉRÉ COMME NON DANGEREUX, OU DANS DES CONDITIONS DE SERVICE PRESCRITES.</b>
---	---

 <b>WARNING</b>	<b>DO NOT REMOVE OR REPLACE FUSE AND DISCONNECT WHEN ENERGIZED UNLESS THE AREA IS KNOWN TO BE NON-HAZARDOUS.</b>
 <b>AVERTISSEMENT</b>	<b>NE PAS RETIRER OU REMPLACER LE FUSIBLE ET LE DÉBRANCHER LORSQU'IL EST SOUS TENSION, À MOINS QUE LA ZONE SOIT SÛR QU'IL N'EST PAS DANGEREUSE.</b>

## 2.4 Security Guidelines

Ensure that the device is locked by DCS using the HART feature (refer command 71 to Lock device in spec 151) to prevent any unauthorized configuration changes.

Physical access to device: DCS host and the SCA devices on the control network shall have physical access control. Otherwise a malicious operation on the LLIA-SCA will result in process Shutdown or impact process control. For maximum security, the LLIA-SCA device must be protected against unauthorized physical access.

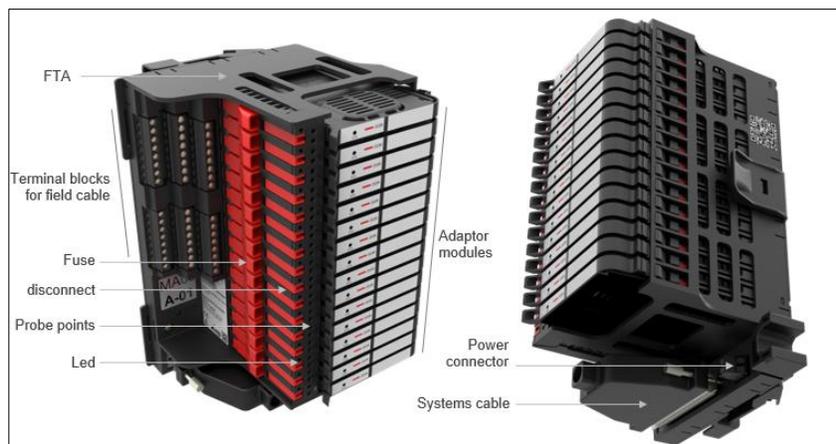
## 3 Purpose

### 3.1 Customer Problems

The following are some of the key opportunities in the context of marshalling solutions.

- Variability in the field wiring of different instrument signal types
- Nonstandard marshalling design using 3rd party hardware at low cabinet I/O density 100-240 I/O
- Making late changes in field device types and related wiring, with minimal impact on project schedule
- Expanding systems in brownfield projects or adding I/Os late in greenfield projects in a cost-effective manner
- Extensive effort for the design of each marshaling cabinet, which leads to considerable schedule impact in each project
- Enabling access to field wiring areas for service & maintenance , including termination and signal conditioning, while preventing access to DCS system components

### 3.2 Universal Marshalling Solution



SCA is Honeywell's one stop Universal Marshalling Solution. SCA offers highly integrated, low foot print and standardized marshalling hardware which is intended to be used along with Honeywell's IO modules.

SCA contains DIN rail mountable FTA which has a capacity to host 16 channels of signal conditioning modules and provided with integrated fuse and disconnect options making it an ideal building block for standardized marshalling solution.

SCA is designed for quick and easy installation and provided with a list of modules which are meant to be used for safe area or HAZLOC applications. Installation of SCA can be in regular 2m marshalling cabinets as well as in Universal Process Cabinets (UPC). In both cases, the cabinet assembly can follow one of the pre-defined assembly drawings which is suitable for customer installations.

### 3.3 Benefits

Following are the benefits of SCA:

- Supports uniform marshalling design for interfacing to general purpose and to hazardous areas
- Lifecycle support per Honeywell's long-term support model
- Temperature range -40°C to 70°C (-40° F to 158° F)
- Complements Universal I/O, extending LEAP to marshalling
- Eliminates 3rd party vendor designs, lifecycle costs and lead-time variations
- Enables custom cabinet usage with system I/O modules in front and USCA in rear 256 to 384 I/O
- Eliminates IOTAs used for GI-IS, externally powered I/O and temperature I/Os
- Segregates I/O modules from complicated field wiring
- Increases I/O density per marshalling cabinet from 448 to 720 I/O
- First party marshalling or signal conditioning
- Simple, compact, cost effective and repeatable
- Standard marshalling cabinet builds
- Compatibility with Honeywell IO families: Honeywell Series C and Universal IO modules
- Extends LEAP benefits to include field signal conditioning and wiring - a powerful combination with Universal I/O

### 3.4 Features

SCA offers a range of signal conditioning hardware pluggable to FTA and intended to use in a cabinet environment. Key features of FTA and supported modules are as follows..

Sl No	Hardware	Features
1	FTA (CC- USCA01) & FTA IS type (CC- UGIA01)	<ul style="list-style-type: none"><li>• Capacity of 16 channels</li><li>• DIN rail mountable FTA with a capacity of 16 channels</li><li>• integrated fuse and disconnect for field side terminals</li><li>• Mass termination cable-based interface to Honeywell IO hardware</li><li>• Dedicated 3 screw terminals per channel for field side connections</li></ul>

		<ul style="list-style-type: none"> <li>• Installation in marshalling cabinets as well as Universal Process cabinets.</li> <li>• 2 or 3 wire interfaces towards field for each channel</li> <li>• 24V DC power with LED indication</li> <li>• Mass termination cable (MTC) for 16 channel system side interfaces</li> <li>• Screw less assembly to the base plate</li> <li>• Fuse blown indication for field side fuses</li> <li>• Disconnect function with current measurement terminals</li> <li>• IS type FTA has Intrinsic safety certification</li> </ul>
--	--	---

List of modules supported

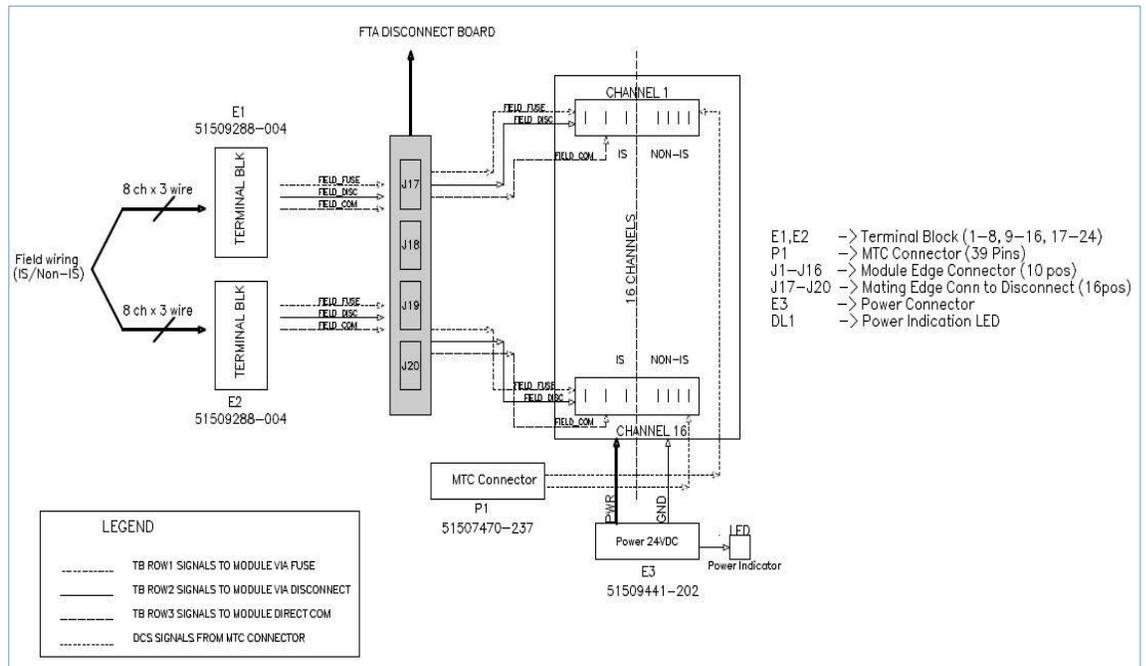
Sl No	Module	Features
1	Pass through (CC-UPTA01)	<ul style="list-style-type: none"> <li>• Single channel pass through adaptor</li> <li>• 2 wires in / out</li> </ul>
2	DI relay (CC-UDIR01)	<ul style="list-style-type: none"> <li>• Single channel DI relay module (low voltage)</li> <li>• COM &amp; NO connectivity to IO hardware</li> <li>• Coil activity LED indication</li> <li>• Input to output and channel to channel isolation</li> <li>• Provided with mistake proofing key</li> </ul>
3	DO relay (CC-UDOR01)	<ul style="list-style-type: none"> <li>• Single channel DO relay module (low voltage)</li> <li>• COM, NO &amp; NC connectivity to field</li> <li>• Coil activity LED indication</li> <li>• Input to output and channel to channel isolation</li> <li>• Provided with mistake proofing key</li> </ul>
4	Analog Input Barrier Module (CC-UGAI01)	<ul style="list-style-type: none"> <li>• Single channel Analog Input IS barrier module with galvanic isolation</li> <li>• Transparent Open Wire Detection</li> <li>• 3-way Isolation</li> <li>• Supports 4-20mA with HART communication</li> <li>• Reverse Polarity Protection</li> </ul>

5	Analog Input Isolator Module(CC-UAIA01)	<ul style="list-style-type: none"> <li>• Single channel Analog Input isolator module</li> <li>• Transparent Open Wire Detection</li> <li>• 3-way Isolation</li> <li>• Supports 4-20mA with HART communication</li> <li>• Reverse Polarity Protection</li> </ul>
6	Analog Output Barrier Module(CC-UGAO01)	<ul style="list-style-type: none"> <li>• Single channel Analog Output IS barrier module with galvanic isolation</li> <li>• Transparent Open Wire Detection</li> <li>• 3-way Isolation</li> <li>• Supports 4-20mA with HART communication</li> <li>• Reverse Polarity Protection</li> </ul>
7	Analog Output Isolator Module (CC-UAOA01)	<ul style="list-style-type: none"> <li>• Single channel Analog Output isolator module</li> <li>• Transparent Open Wire Detection</li> <li>• 3-way Isolation</li> <li>• Supports 4-20mA with HART communication</li> <li>• Reverse Polarity Protection</li> </ul>
8	Digital IO Barrier Module (CC-UGDA01)	<ul style="list-style-type: none"> <li>• Single channel Digital Input Output IS barrier module with galvanic isolation.</li> <li>• Interfaces with Digital Inputs or Digital Outputs</li> <li>• Self-Configuring Digital Input Output mode</li> <li>• Digital Input support for NAMUR sensors or Dry Contacts</li> <li>• Digital Output Drive up to 40mA</li> <li>• Transparent Open Wire Detection</li> <li>• 3-way Isolation</li> <li>• Field Device Status Indication</li> <li>• Reverse Polarity Protection</li> </ul>
9	Digital IO isolator Module (CC-UDXA01)	<ul style="list-style-type: none"> <li>• Single channel Digital Input Output module with galvanic isolation.</li> <li>• Interfaces with Digital Inputs or Digital Outputs</li> <li>• Self-Configuring Digital Input Output mode</li> </ul>

		<ul style="list-style-type: none"> <li>• Digital Input support for NAMUR sensors or Dry Contacts</li> <li>• Digital Output Drive up to 40mA</li> <li>• Transparent Open Wire Detection</li> <li>• 3-way Isolation</li> <li>• Field Device Status Indication</li> <li>• Reverse Polarity Protection</li> </ul>
10	Low Level AI ( CC-ULLI01)	<ul style="list-style-type: none"> <li>• Single channel RTD/TC module</li> <li>• AI channel interface to DCS</li> <li>• Loop powered module</li> </ul>

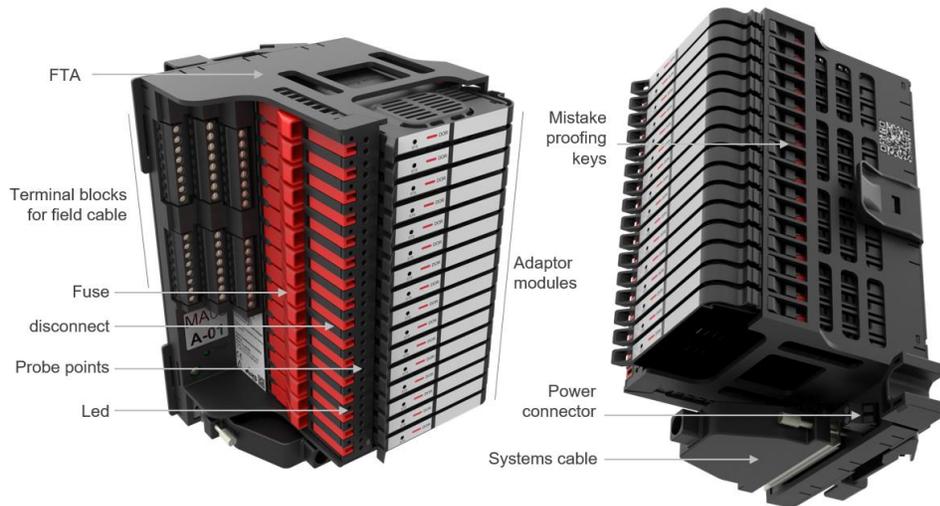
## 4 System specifications

### 4.1 Integrated FTA

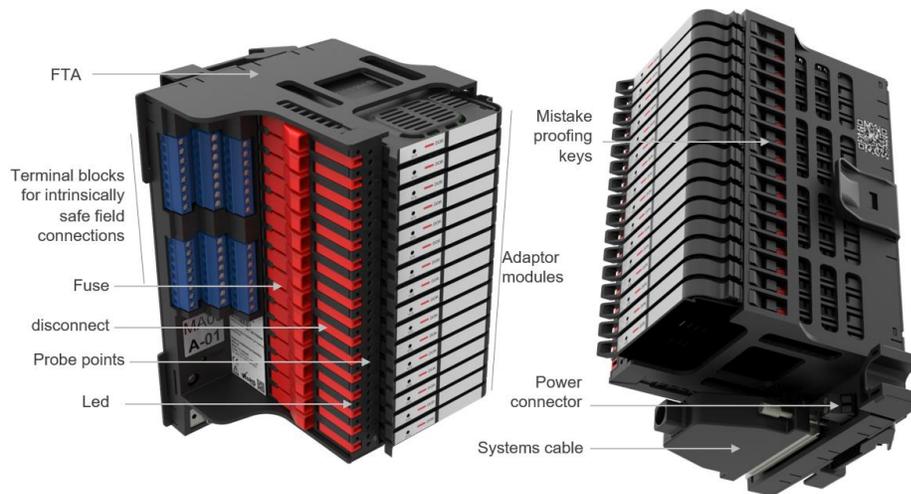


FTA back plane assembly got a base unit and housing. The base consists of a plastic fixture and there is no electrical hardware in the base unit. This base unit functions as interface between the housing and the DIN rail.

FTA (non-IS version) assembly details are provided as follows.



FTA (IS version) assembly details are provided as follows.

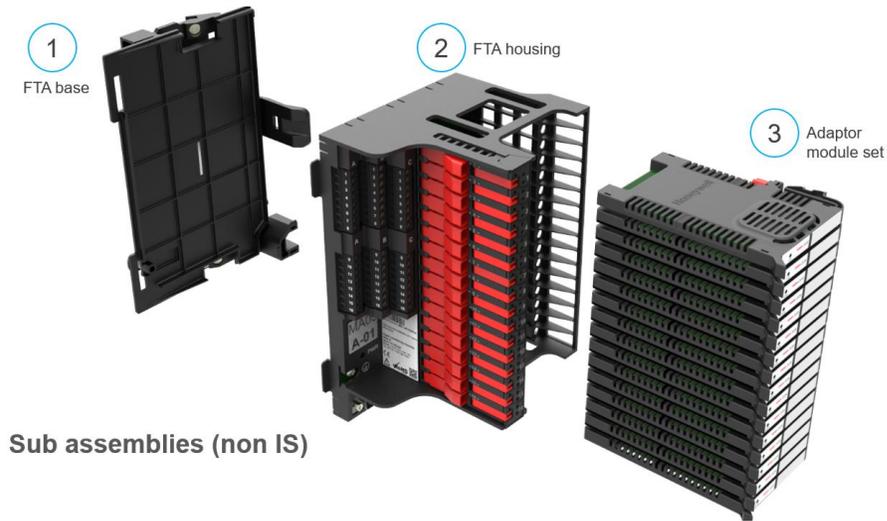


Once FTA base is secured to a DIN rail, the FTA housing can be snapped and secured on to the base. Once the base and housing are Assembled, signal conditioning module hardware can be plugged in to respective slots.

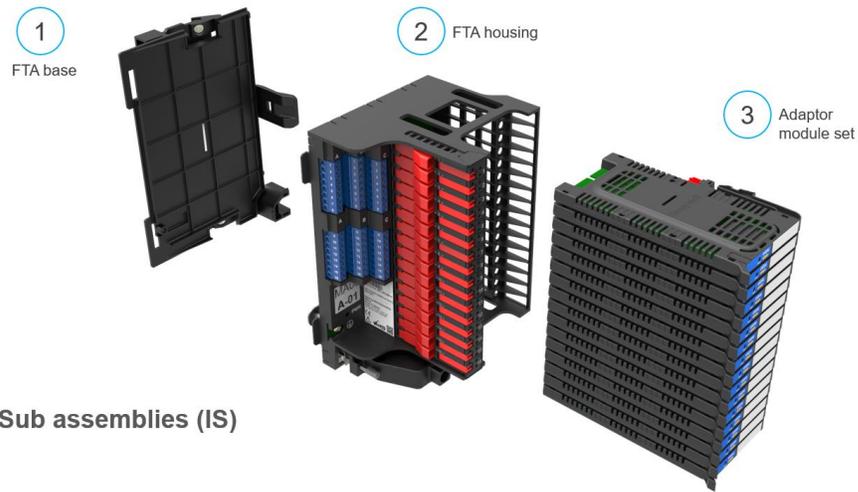
FTA is provided 3 screw terminals dedicated for each field channels. These terminal blocks are arranged in Groups of 8 channels to make it more user friendly.

FTA assembly is provided with a dedicated fuse arm and a disconnect arm for the field connections of each channel. These leavers can be opened using suitable screwdriver. Fuse lever can be opened to replace the fuse (5mm x 20mm fuse). A blown-fuse indication is provided towards the front part of FTA housing which indicates the fuse status.

Disconnect levers are provided in FTA for the purpose of disconnecting the field side connections. This lever needs to be operated with a suitable screw driver. Probing terminals are provided at the front part of FTA housing to help the service technician to probe the current through the field side connections. This probing can be done by inserting ammeter probes to the probing terminals and then operating the disconnect level to allow the current to flow through ammeter. Closing the disconnect level before removing ammeter probe will help to ensure uninterrupted current flow to the field.



**Sub assemblies (non IS)**



**Sub assemblies (IS)**

FTA assembly is provided with a 2-terminal power connector (24V DC) along with an LED indication for power (green) .

Mass Termination Cable (MTC) for interfacing 16 channels of signals from IO module is positioned next to power connector. Necessary options for routing and fastening MTC cable is provided on FTA plastic enclosure.

## 4.2 USCA /UGIA Electrical specifications

Parameter	Specification
Power	24V DC
Max current	1.3A
Power indication	Green LED
Interface to DCS	37 pin DSUB (for MTC cable)
Field side interface	Dedicated 3 terminals per channel

Field side wire connection to terminal blocks	12-24 AWG. Thread M2.5. Torque 0.4N.m (3.54Lb.in)
Channel to channel isolation (wherever applicable):	1000V (by factory test)

### 4.3 Model numbers

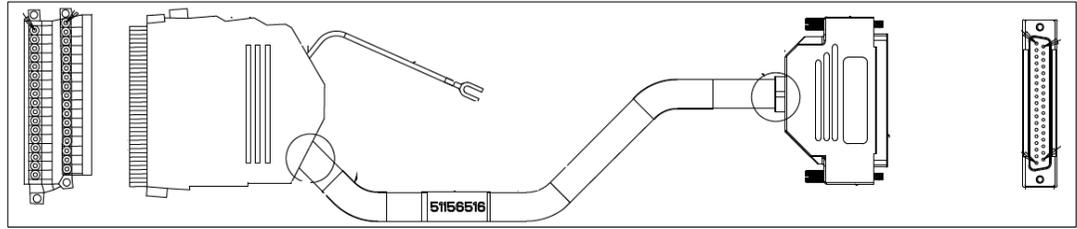
The following list provides the model numbers of SCA hardware modules and accessories.

Sl #	Description	Model #
1	Integrated FTA - non-IS	CC-USCA01
2	Low Voltage Relay-D0	CC-UDOR01
3	Low Voltage Relay-DI	CC-UDIR01
4	Analog Input Barrier Module	CC-UGAI01
5	Analog Input Isolator Module	CC-UAIA01
6	Analog Output Barrier Module	CC-UGAO01
7	Analog Output Isolator Module	CC-UAOA01
8	Digital IO Barrier Module	CC-UGDA01
9	Digital IO isolator Module	CC-UDXA01
10	Low Level AI	CC-ULLI01
11	Feedthrough Module	CC-UPTA01
12	Integrated FTA - IS	CC-UGIA01
13	FPA - Fuse Protection Arm	CC-UFPA01

Mass Termination Cable (MTC) connects all signals corresponding to 16 channels between IO hardware and marshalling hardware. On one side, MTC directly engages the field terminals of the IO hardware IOTA and on the other side a single DB37 connector connects these signals to the FTA of SCA.

Sl No	Parameter	Specification
1	Cable type	Multi core shielded cable
2	Number of cores	16 pair
3	Conductor type	Multi strand 22AWG
4	Outer diameter	12.1mm nominal
5	Bending radius	min 73mm for fixed installations

## Drawing / Diagram



MTC is available in the following part numbers and cable lengths.

Sl No	Model number	Cable length
1	CC-SICC-1011/L06	6m
2	CC-SICC-1011/L10	10m
3	CC-SICC-1011/L15	15m
4	CC-SICC-1011/L20	20m
5	CC-SICC-1011/L25	25m
6	CC-SICC-1011/L30	30m

## 4.4 General specifications

### 4.4.1 Environmental specifications

The following table lists the environmental characteristics and requirements for the SCA components.

Sl No	Environmental specification	Operating limits	Transportation & Storage limits
1	Ambient Temperature Range	-40 to +70 °C	-40 to +85°C
2	Temp. Rate of Change	<= 1 °C/min	<= 5 °C/min
3	Relative Humidity	5 to 95% (non-condensing)	5 to 95% (non-condensing)
4	Altitude	-300 to +2000 m	Any
5	Vibration	0-60Hz, 0.2g	0-60Hz, 0.2g
6	Mechanical shock	5g, 30mS	5g, 30mS
7	Pollution degree	2	2

#### 4.4.2 Module physical dimensions

- Dimensions short modules : 118 mm x 85.75 mm x10.0mm
- Dimensions long modules: 141.5mmx 85.75mm x10.0mm.
- Assembly option: back plane mount, screw less
- Mistake proofing: provided mistake proofing keys

### 4.5 Certifications and Compliances

#### 4.5.1 Compliances

- Ingress protection : IP20 as per IEC 60529
- Conformance : IEC Ex, ATEX, cCSA us
- EMC standard : IEC 61326-1
- Compliance : RoHS

#### 4.5.2 Hazardous environment and conformity for PTA, DIR & DOR

Detail	IECEX	ATEX
Certificate number	IECEX SIR 19.0067X	SIRA 19ATEX4224X
Certification code	<b>Digital Input relay (DI) module – (Model CC-UDIR01)</b>	
	Ex ec nC IIC T4 Gc	
	<b>Digital Output relay (DO) module – (Model CC-UDOR01)</b>	
	Ex ec nC IIC T4 Gc	
	<b>Pass through adapter module – (Model CC-UPTA01)</b>	
	Ex ic IIC T4 Gc	when connected to circuits with the following output parameters U <sub>o</sub> = 24V; I <sub>o</sub> = 260mA
	Ex ec IIC T4 Gc	when operated at 24V DC, 500mA max
	<b>Universal signal conditioning assembly - (Model CC-USCA01)</b>	

	Where any combination of only the following modules is used:  Model CC-UDOR01 Model CC-UDIR01	Ex ec nC IIC T4 Gc	
	Where only the following modules are used:  Model CC-UPTA-01	Ex ic IIC T4 Gc	
	Where a combination of the below listed modules is used:  Model CC-UDOR-01 Model CC-UDIR-01 Model CC-UPTA-01	Ex ec nC IIC T4 Gc When CC-UPTA-01 modules are operated at 24V DC, 500mA max	
Other marking		 	
Manufacturer's address	Honeywell, Fort Washington, PA, USA 19034		
Ambient range	-40°C to +70°C		
Serial number	As per the label(s)		
Year of manufacture	As per the label(s)		
Warnings	As per the label(s)		

Marking applicable to North America

Scenario	Marking
Where any combination of only the following modules are used:  Model CC-UDOR01 Model CC-UDIR01	 CI.I, Div. 2 Grp. ABCD T4; CI.I, Zn2, AEx\Ex nA nC IIC T4 Gc CI.I, Zn2, AEx\Ex ec nC IIC T4 Gc CSA 19CA70215903X    II 3G Ex ec nC IIC T4 Gc SIRA 19ATEX4224X 

<p>Where only the following modules are used:</p> <p>Model CC-UPTA-01</p>	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">         :SA19CA70215903X     </div> <div> <p>Class I Division 2, Gr A-D, T4        Ex ic IIC T4 Gc        Class I, Zone 2 AEx ic IIC T4 Gc        When connected to circuits with the following output parameters;  <math>U_o = 24V</math>  <math>I_o = 260mA</math></p> <p>Class I Division 2, Gr A-D, T4        Ex ec IIC T4 Gc        Ex nA IIC T4 Gc        Class I Zn 2, AEx nA IIC T4 Gc        When operated as rated</p> </div> </div> <div style="margin-top: 20px;">  <table border="1" style="margin-left: 20px;"> <tr> <td colspan="2" style="text-align: center;">II 3G</td> </tr> <tr> <td style="text-align: center;">Ex ic IIC T4 Gc</td> <td style="text-align: center;">when connected to circuits with the following output parameters <math>U_o = 24V</math> <math>I_o = 260mA</math></td> </tr> <tr> <td style="text-align: center;">Ex ec IIC T4 Gc</td> <td style="text-align: center;">when operated as rated</td> </tr> </table> </div> <div style="text-align: center; margin-top: 20px;">       IECEx SIR 19.0067X        SIRA 19ATEX4224X     </div>	II 3G		Ex ic IIC T4 Gc	when connected to circuits with the following output parameters $U_o = 24V$ $I_o = 260mA$	Ex ec IIC T4 Gc	when operated as rated
II 3G							
Ex ic IIC T4 Gc	when connected to circuits with the following output parameters $U_o = 24V$ $I_o = 260mA$						
Ex ec IIC T4 Gc	when operated as rated						
<p>Where a combination of the below listed modules is used:</p> <p>Model CC-UDOR-01</p> <p>Model CC-UDIR-01</p> <p>Model CC-UPTA-01</p>	<div style="text-align: center;">         II 3G     </div> <p>Ex ec nC IIC T4 Gc - When CC-UPTA-01 modules are operated as rated.</p> <p>IECEx SIR 19.0067X        SIRA 19ATEX4224X</p> <div style="text-align: center; margin-top: 20px;">         CSA19CA70215903X     </div> <p>Class I Div 2 Gr A-D, T4</p> <p><i>When CC-UPTA-01 connect to circuits with output parameters not exceeding <math>U_o = 24V</math>, <math>I_o = 260mA</math></i></p> <div style="text-align: center; margin-top: 20px;">         CSA19CA70215903X     </div> <p>Class I Div 2 Gr A-D, T4        Ex ec nC IIC T4 Gc</p>						

	<p>Ex nA nC IIC T4 Gc</p> <p>Class I Zn 2, AEx ec nC IIC T4 Gc</p> <p>Class I Zn 2, AEx nA nC IIC T4 Gc</p> <p><i>When CC-UPTA-01 modules are operated as rated.</i></p>
--	--

#### 4.5.3 Hazardous environment and conformity for – UGAI, UGAO & UGDA

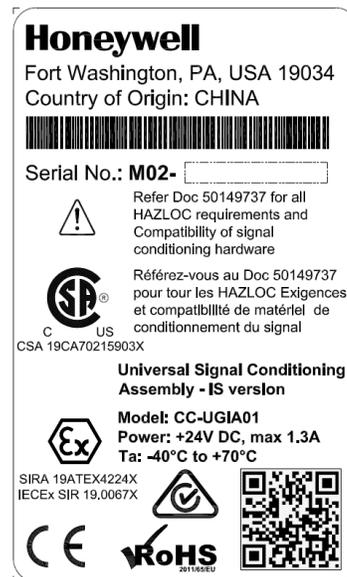
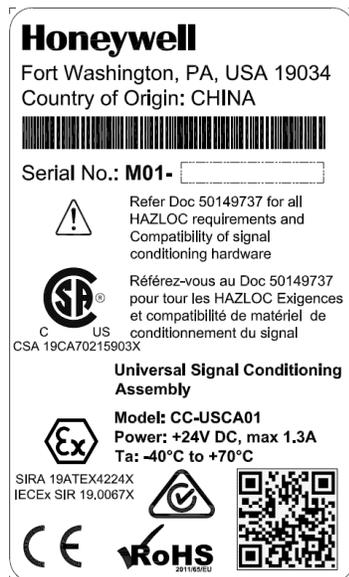
Detail	IECEX	ATEX
Certificate number	IECEX SIR 19.0067X	SIRA 19ATEX4224X
Certification code	<p><b>Analog input isolator module – (Model CC-UAIA01)</b></p> <p><b>Analog output isolator module – (Model CC-UAOA01)</b></p> <p><b>Digital Input Output isolator module – (Model CC-UDXA01)</b></p> <p>Ex ec [ia] IIC T4 Gc</p>	
Other marking		 
Manufacturer's address	<p>Honeywell,</p> <p>Fort Washington, PA, USA 19034</p>	
Ambient range	-40°C to +70°C	
Serial number	As per the label(s)	
Year of manufacture	As per the label(s)	
Warnings	As per the label(s)	

#### 4.5.4 Hazardous environment and conformity for – UAIA, UAOA & UDXA

Detail	IECEX	ATEX
Certificate number	IECEX SIR 19.0067X	SIRA 19ATEX4224X
Certification code	<b>Analog input isolator module – (Model CC-UAIA01)</b> <b>Analog output isolator module – (Model CC-UAOA01)</b> <b>Digital Input Output isolator module – (Model CC-UDXA01)</b>  Ex ec nA IIC T4 Gc	
Other marking		 
Manufacturer's address	Honeywell, Fort Washington, PA, USA 19034	
Ambient range	-40°C to +70°C	
Serial number	As per the label(s)	
Year of manufacture	As per the label(s)	
Warnings	As per the label(s)	

#### 4.5.5 FTA label

The following is a snapshot of FTA label and markings.




**NOTE** When the QR code is scanned, below listed link will be opened.  
<https://www.honeywellprocess.com/library/marketing/tech-specs/50149737-001.pdf>

---

The SCA Module are Certified by Canadian Standards Association for use in non-incendive Class I, Division 2, Groups A, B, C and D, T4 with field wiring connections to Class I, II, and III, Division 2, Group A, B, C, D, E, F and G hazardous locations.

## 4.6 Dimensions

### 4.6.1 FTA housing-Physical specifications

- Dimensions: 199mm (H) X 140mm (W) X 135mm (D).
- Assembly option: DIN rail mount using base plate

## 5 Supported IO hardware

SCA supports the following IO hardware from Honeywell.

List of IOTAs and IO modules supported										
Sr. No	Module	IOTA Supported	IOM Block name	Description	DI relay (DIR)	DO relay (DOR)	Pass through (PTA)	DIO (UGDA & UDXA)	AI (UAIA & UGAI)	AO (UGAO01 & UAOA)
1	CC-PAIH01	CC-TAIX01, CC-TAIX11	AI-HART	High Level Analog Input with HART			✓		✓	
2	CC-PAIH02	CC-TAIX01, CC-TAIX11	AI-HART	High Level Analog Input with HART			✓		✓	
3	CC-PAIX02	CC-TAIX01, CC-TAIX11	AI-HL	High Level Analog Input with Differential/Single-ended non-HART			✓		✓	
4	CC-PAIX01	CC-TAIX01, CC-TAIX11	AI-hl	High Level Analog Input with Differential non-HART			✓		✓	
5	CC-PAIN01	CC-TAIN01, CC-TAIN11	AI-hl	High Level Analog Input with non-HART 1 Modem, High Level Analog Input with HART			✓		✓	
6	CC-PAON01	CC-TAON01, CC-TAON11	AO	Analog Output with non-HART			✓			✓
7	CC-PAOX01	CC-TAOX01, CC-TAOX11	AO	Analog Output with non-HART			✓			✓

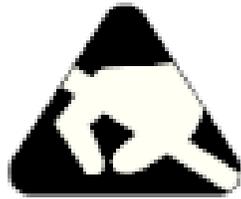
8	CC-PAOH01	CC-TAOX01, CC-TAOX11	AO-HART	Analog Output with HART			✓			
9	CC-PDIL01	CC-TDIL01, CC-TDIL11	DI-24	Low Voltage Digital Input (24 volts DC)	✓		✓	✓		
10	CC-PDIS01	CC-TDIL01, CC-TDIL11	DI-SOE	Low Voltage Digital Input (24 volts DC)			✓	✓		
11	CC-PDOB01	CC-TDOB01, CC-TDOB11	DO-24B	Bussed Low Voltage Digital Output (24 volts DC)		✓	✓	✓		
12	CC-PUIO31	CC-TUIO31, CC-TUIO41	UIO-2	UIO-2	✓	✓	✓	✓	✓	✓
13	CC-PAIH51	CC-TAIX51, CC-TAIX61	AIH	High Level Analog Input with HART			✓		✓	
14	CC-PDIL51	CC-TDIL51, CC-TDIL61	DI 24	Low Voltage Digital Input (24 volts DC)			✓	✓		

## 6 Installation

### 6.1 Installation declarations

 WARNING	This equipment shall be installed in accordance with the requirements of the National Electrical Code (NEC), ANSI/NFPA 70, or the Canadian Electrical Code (CEC), C22.1. It is intended to be mounted on a sub-panel within an enclosure. The suitability of the enclosure and installed system shall be acceptable to the local 'authority having jurisdiction,' as defined in the NEC, or 'authorized person' as defined in the CEC.
--	--

#### 6.1.1 Electrostatic discharge



Electrostatic discharge can damage integrated circuits or semiconductors if you touch connector pins or tracks on a printed wiring board.

- Touch a grounded object to discharge static potential
- Wear an approved wrist-strap grounding device
- Do not touch the wire connector or connector pins
- Do not touch circuit components
- When not in use, keep the component in its static shield box or bag

 WARNING	Unless the location is known to be non-hazardous, <u>do not</u> : <ol style="list-style-type: none"><li>1. Connect or disconnect field side cables</li><li>2. Operate Fuse or disconnect levers</li><li>3. Install or remove components</li></ol> While the control system is powered.
--	--

### 6.2 Installation of SCA in a cabinet

Be sure the enclosure is connected to a protective earth ground using #8 AWG solid copper wire. There should be metal to metal contact between the grounding bus bar and the DIN rail mounted to the enclosure.

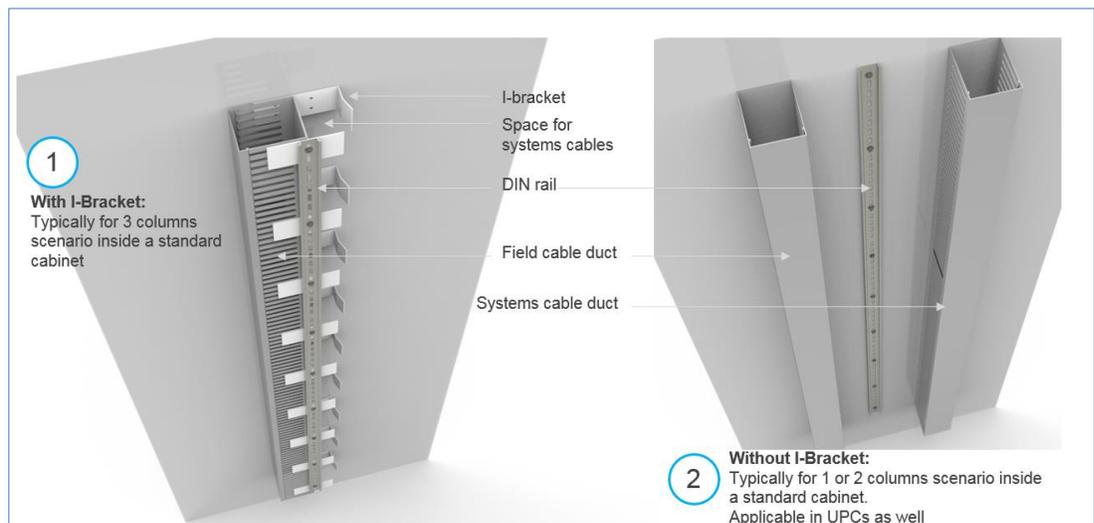
## 6.3 Prerequisites

The following is list of prerequisites may be considered.

- DIN rail for mounting SCA assembly is installed in a cabinet or desired mounting location.
- Power supply is installed.
- All wiring and pre-fabricated cables are available and labeled as applicable.
- Be sure all power is turned off at the installation location.
- Ensure assembly area is free from electrostatic potential
- The following is the list of tools that are recommended for cabinet level assembly of SCA

Sl No	Tool type	Description
1	Screwdriver - #2 PHILIPS head drive	For fixing FTA base mounting to DIN rail.
2	Nose plier with ~ 45mm to 55mm long needle nose	Removal of configuration key
3	Wire stripper	Preparing field side wires
3	Crimping tool	Crimping field side wires
4	Screwdriver	DIN rail & I bracket mounting
5	Cutter	Cutter for cable tie

## 6.4 1,2 or 3 column assembly



A typical assembly arrangement for 1 , 2 and 3 column assembly of SCA in to a standard 2m cabinet is pictured here.

In the case of 3 column assembly, a metallic I-bracket (Honeywell part no.: 51156744) along with a standard cable duct assembly need to be fixed to the back plate of the cabinet as shown. The DIN rail can be secured on to the front side of the I-bracket. A vertical column of FTAs (max 8 numbers) can be assembled on to this DIN rail in the case of a 2m cabinet.

Typical 1 column or 2 column assembly needs only standard cable ducts assembled vertically to the back plate of a cabinet.

Spacing between the Cable ducts need to be sufficiently large to accommodate the FTA assembly in between. DIN rail can be fixed directly to the back Plate of the cabinet and FTAs can be assembled on to it.

## 6.5 Mounting

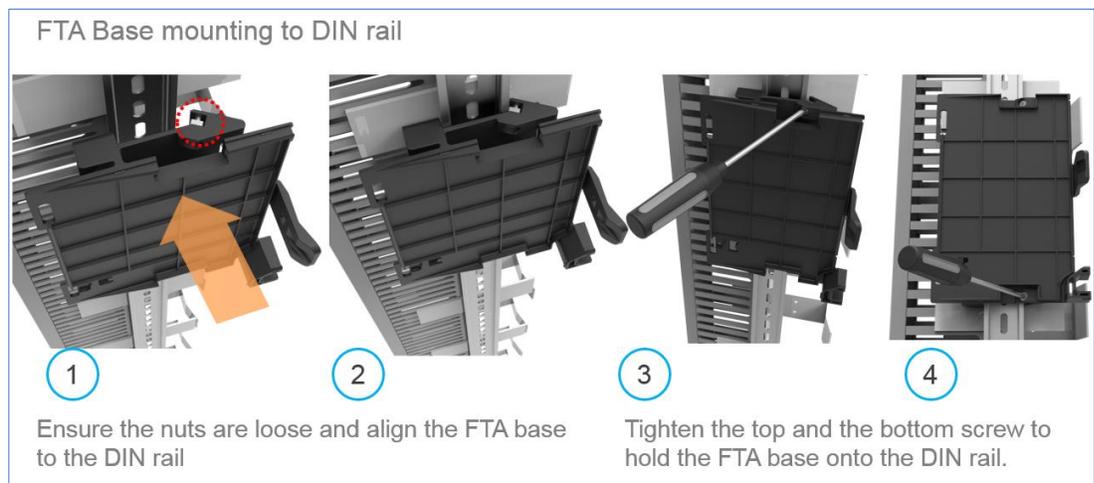
### 6.5.1 Mounting FTA Base to DIN Rail

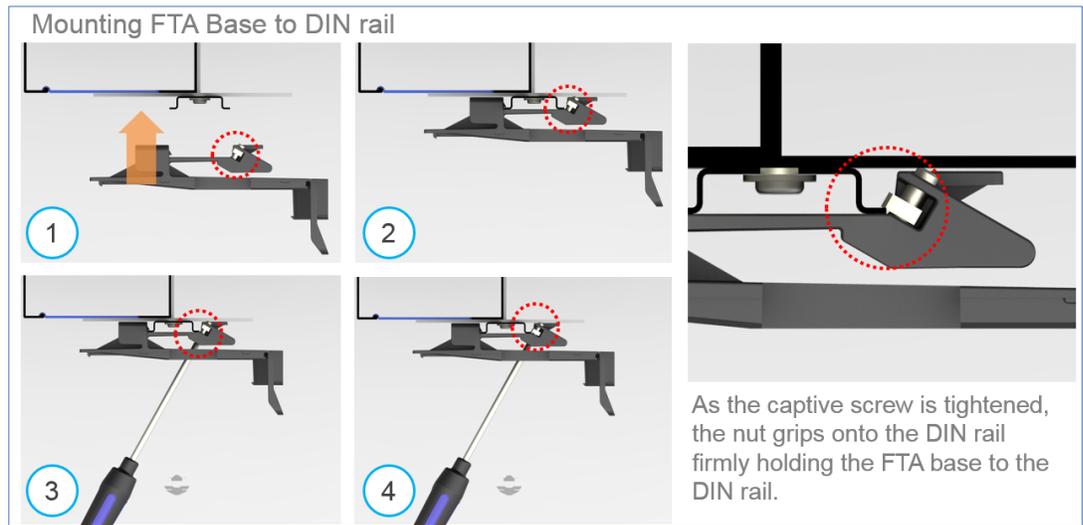
FTA base is provided with captive screws at the top and bottom which engages the vertical edge of DIN rail preventing the base from sliding.

Make sure the nuts are loose before snapping the FTA base on to DIN rail. Once the base is properly positioned on the DIN rail

The captive screws can be tightened to secure the base firmly to the DIN rail.

Below graphics explains the mounting sequence for FTA base.

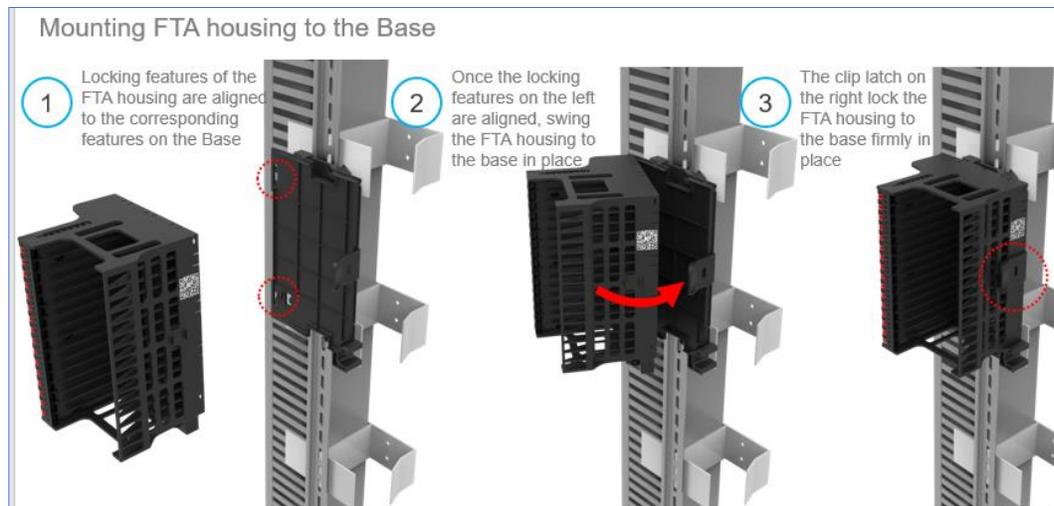




### 6.5.2 Mounting FTA housing to the Base

Securing FTA housing to the base is screw less operation.

Sequence is detailed in the following diagram. The features provided on the housing need to be aligned with the base before snapping the right side of the housing.



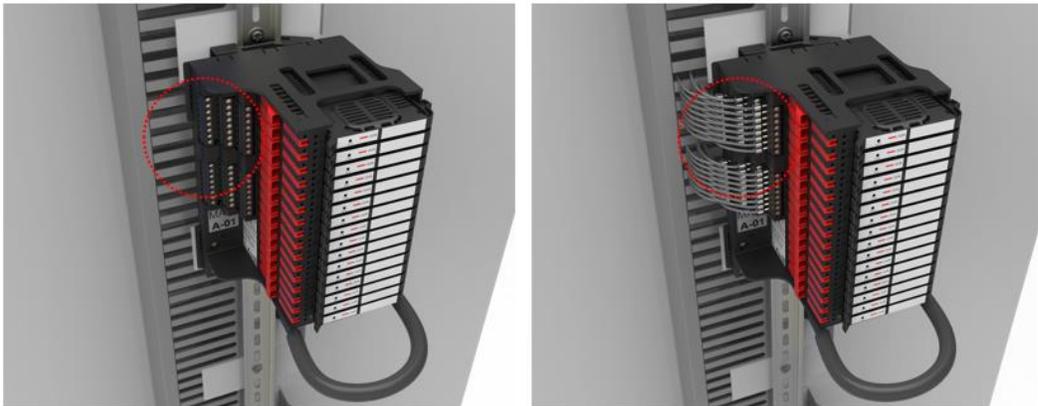
Snap generates a robust click sound indicating that the latching operation.

Removal of this FTA housing must be performed in reverse sequence where the snaps need to be unlatched as the first step and disengage the housing from the base as next step.

Recommended to use a screw driver to disengage the snaps in the case of a 3-column assembly where the spacing between FTA columns are less. In the case of 1 or 2 column assembly in a cabinet opening the snap by hands is also an option.

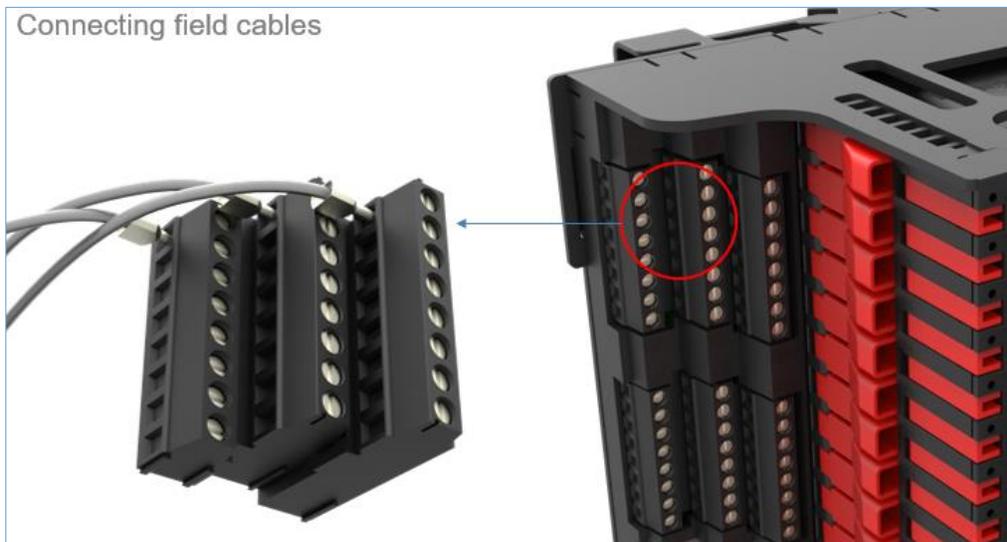
## 6.6 Connecting the field wires

Connecting field cables

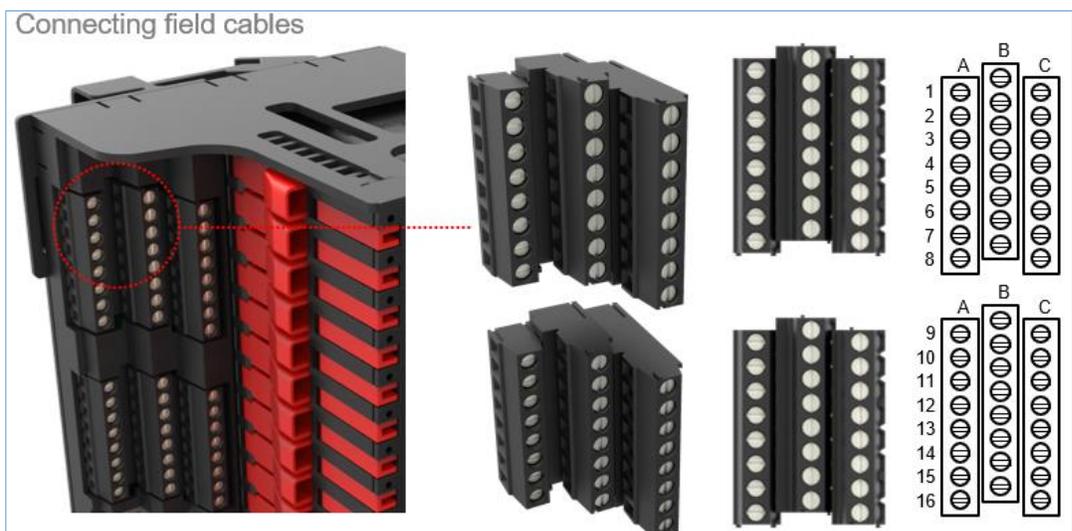


Field cables housed in the duct behind are to be connected to the terminals

Connecting field cables



Connecting field cables

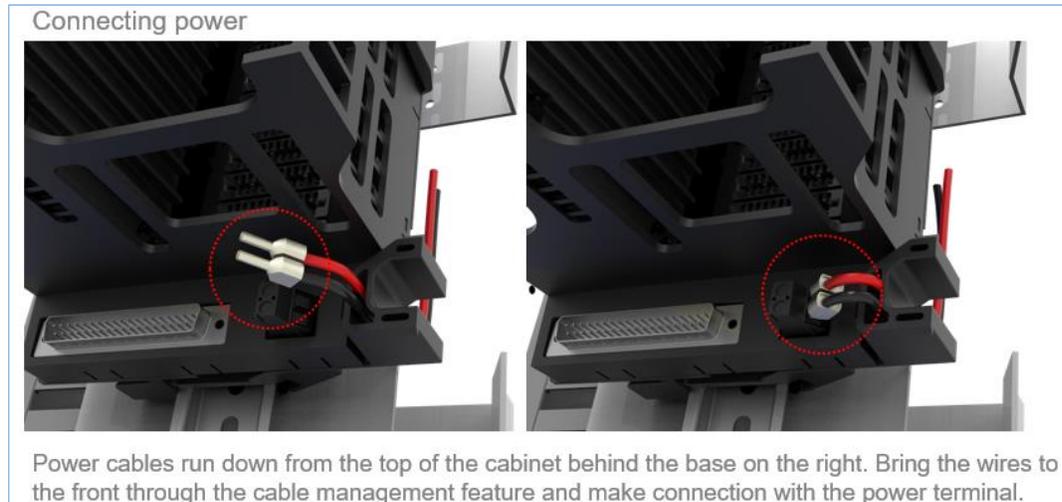


Recommended cable routing option for field cables are shown.

The graphics provided here is specifically for a 3-column assembly where the field side cable ducts are behind the FTA assembly.

In the case of 1 and 2 column assembly the cable ducts will be on the sides of FTA where traditional cable routing practices can be followed.

## 6.7 Connecting power



### Connecting MTC cable



Recommended cable mounting and routing for Power cables and the MTC cable is provided above.

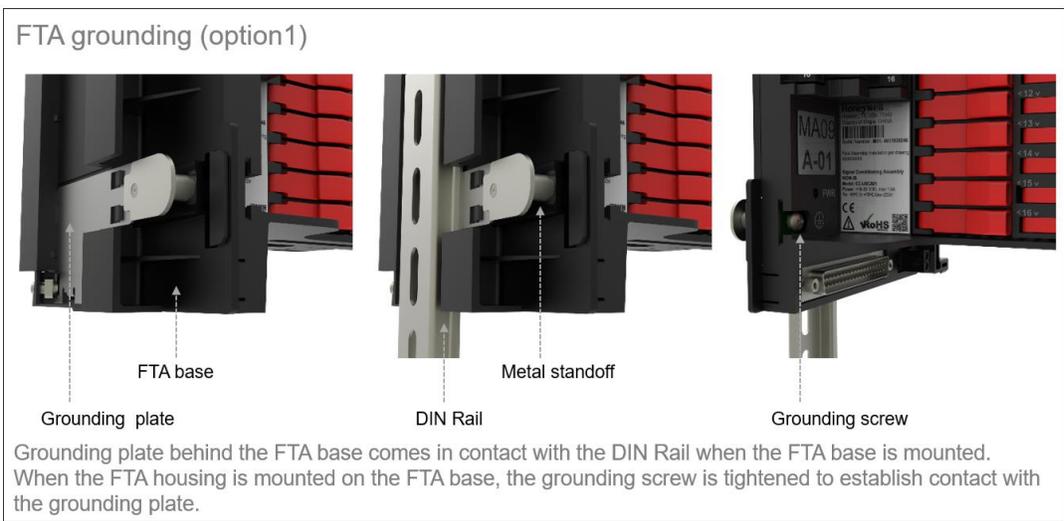
FTA housing is provided with features to route and fasten both power cable as well as MTC cable.

DB37 connector on MTC cable need to be secured to FTA base with 2 screws provided on either side of the connector bending and routing of MTC cable shall be done as indicated in the figures.

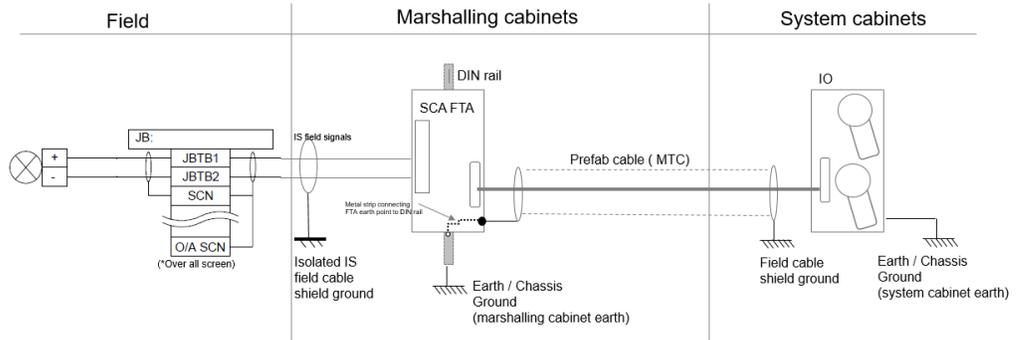
## 6.8 FTA Grounding

FTA is provided with a screw terminal for earth connection which may be used for connecting MTC side shield connection to earth.

There are 2 options provided.



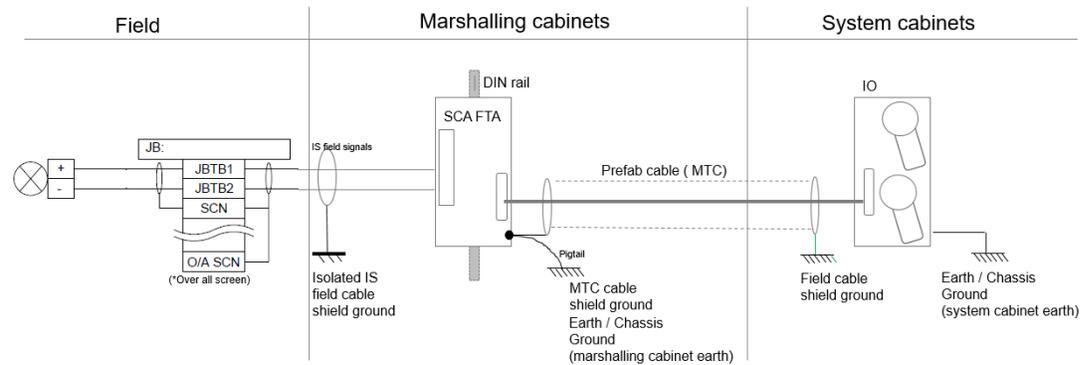
1. Route the earth connection of FTA to cabinet earth through DIN rail. Connection details given below.



2. Route earth connection of FTA cabinet earth using pigtail cable. Details below

FTA grounding (option 2)

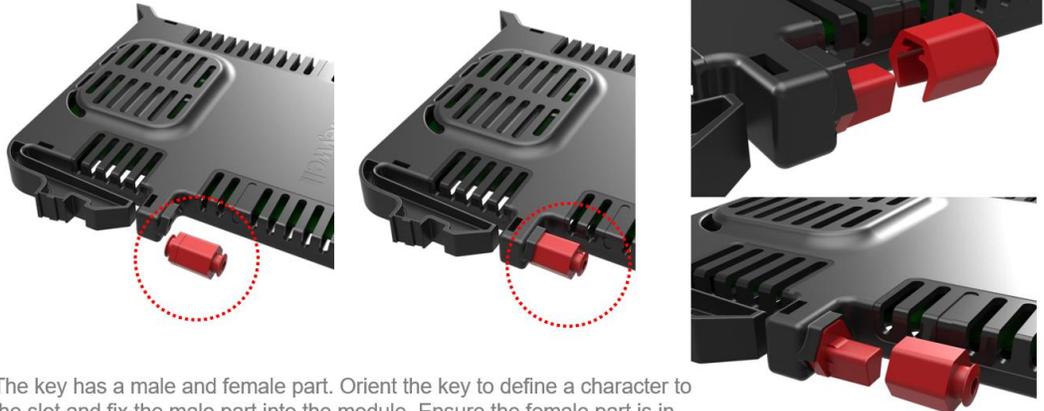
Before the FTA base is mounted on the DIN Rail, part of the grounding plate can be rotated to de-establish contact with the grounding screw in the front. Once the FTA housing is mounted, lug on the ground wire is pushed into the side slot on the FTA housing. Once it is aligned, the screw is tightened to establish contact with the FTA board.



Shield of field side cables may be connected to the earthing bar option in the cabinet assembly, this shield connection is not expected to terminate in FTA.

## 6.9 Adaptor module

Adaptor Module



The key has a male and female part. Orient the key to define a character to the slot and fix the male part into the module. Ensure the female part is in place when fixing the adaptor module into the designated slot in the FTA.

A set of keys with matching pattern can provide 6 combinations. Key pairs with different patterns will be used to provide more combinations.

Mistake-proofing keys are not provided in PTA.

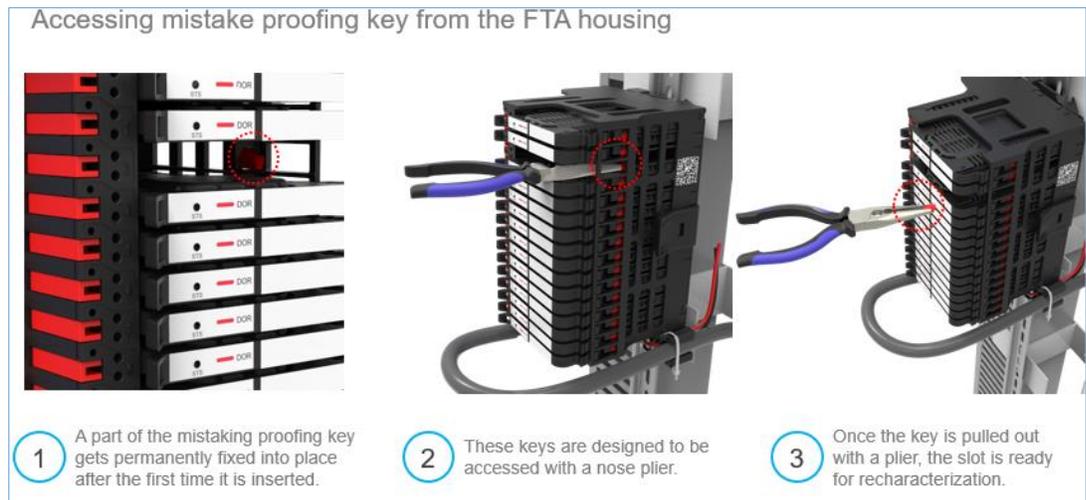
SEE DETAIL A

KEY TYPE No.	1	2	3	4	5	6
50144592 KEY VIEW IN ASSEMBLY						
DESCRIPTION	0° ALIGNMENT	60° ALIGNMENT	120° ALIGNMENT	180° ALIGNMENT	240° ALIGNMENT	300° ALIGNMENT

DETAIL A

6	51156753-100	TC/RTD MODULE
5	51156597-100	ANALOG OUTPUT MODULE
4	51156595-100	DIGITAL I/O MODULE
3	51156593-100	ANALOG INPUT MODULE
2	51156596-276	LOW VOLTAGE RELAY-DI
1	51156596-176	LOW VOLTAGE RELAY-DO
KEY TYPE No.	MODULE PART NUMBER	MODULE DESCRIPTION

## 6.10 Accessing key



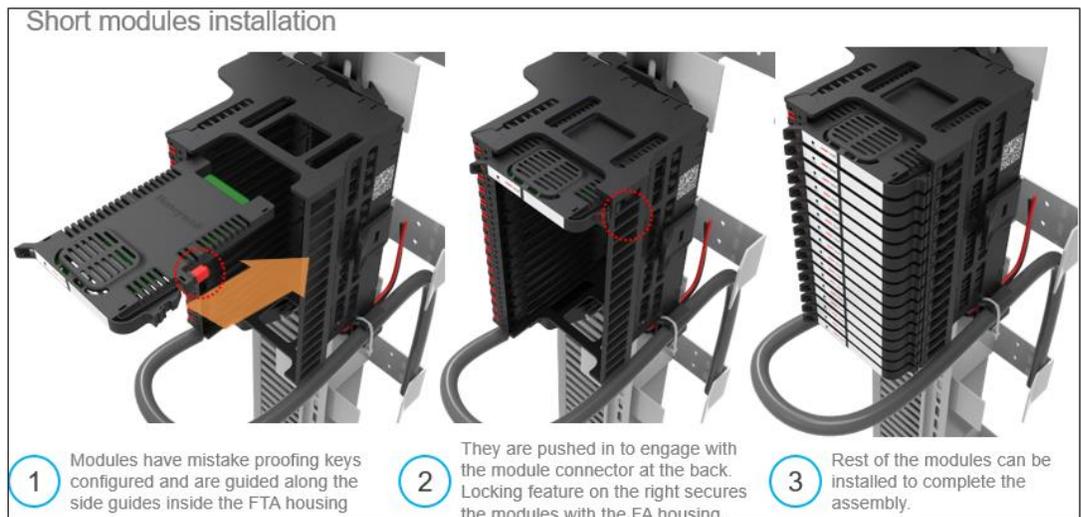
All channels of a factory fresh FTA will be neutral and there will not be any key assembled to any slots of FTA. The keys got 2 parts – male & female. Both the male part and female part will be assembled together on to the module when shipped out from factory.

Modules can be plugged in to any slots of a factory fresh FTA. While plugging a module first time in to a given slot, the male part of the key will get locked on to the FTA base and female part of the key will stay with the module assembly.

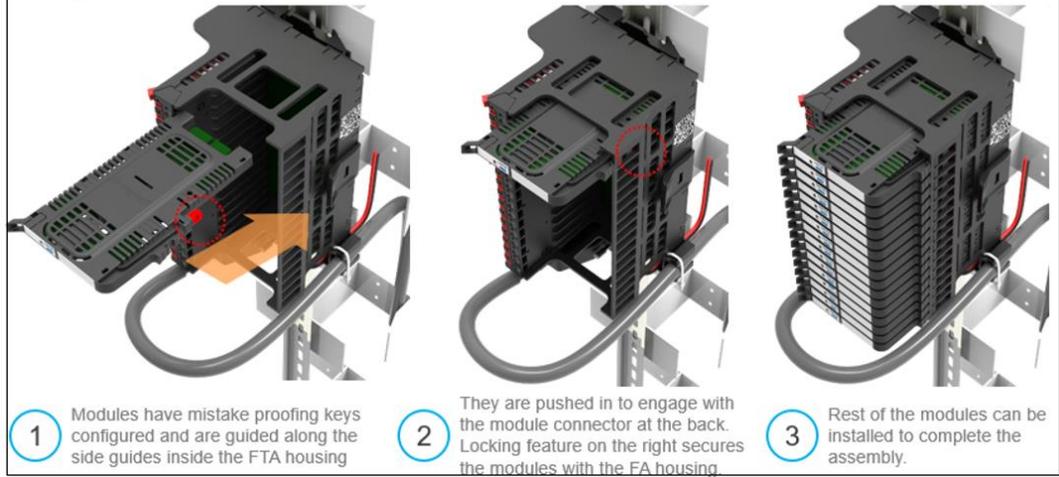
Keying of a slot in FTA happens when a module is plugged into each slot first time. When a module is inserted and removed for the first time, male part of the key assembly will get snapped in to FTA housing and this slot will be reserved for only respective module personality.

An already keyed slot for an IO type can be brought back to a neutral slot by removing the male part of the key from the FTA housing.

## 6.11 Module installation

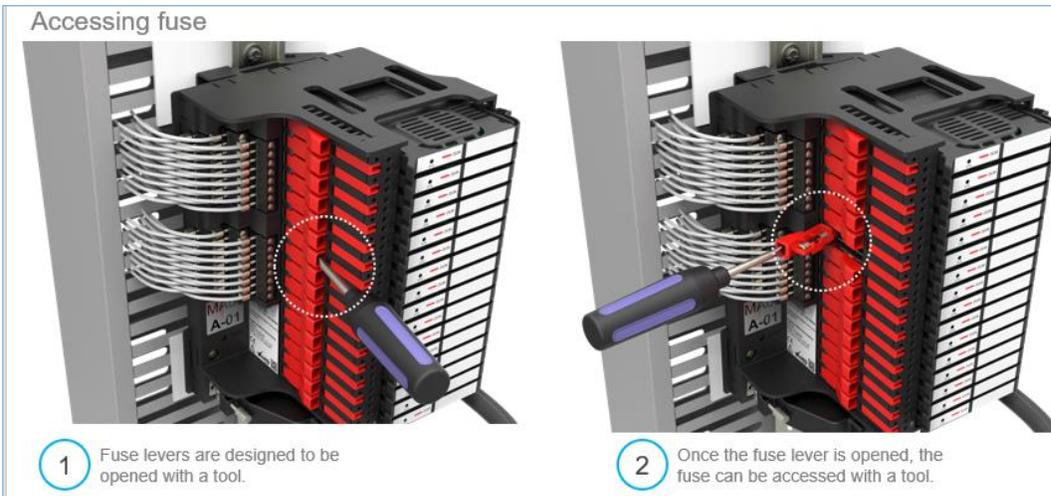


### Long modules installation



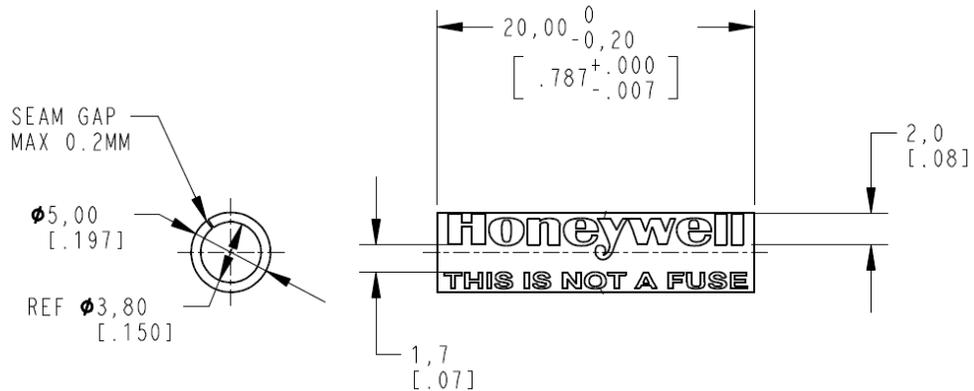
Modules can be plugged in to FTA slots and tactile feedback indicates proper insertion of the modules.

## 6.12 Accessing fuse

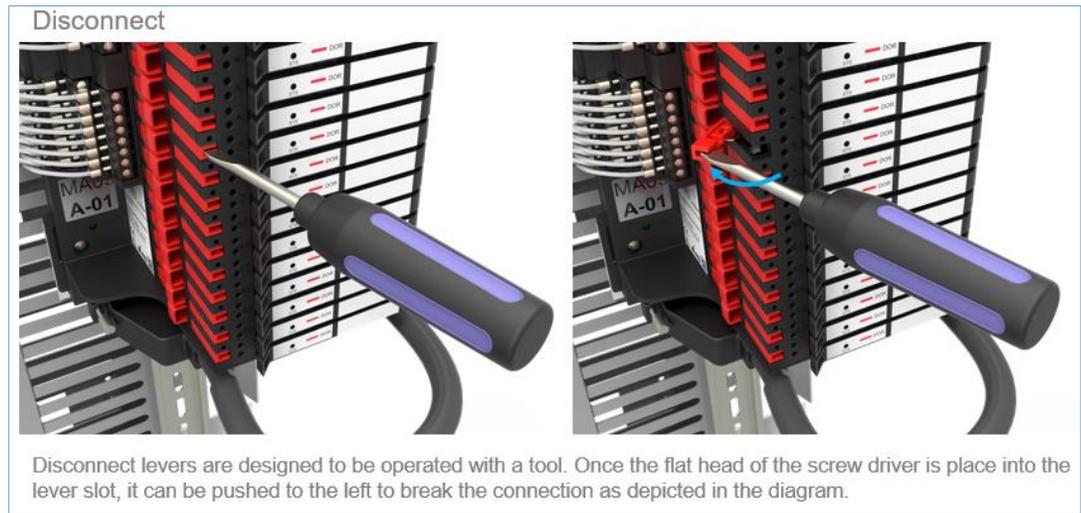


Fuse levers can be opened with a screwdriver as shown in graphics. Once opened, the glass fuse can be removed or inserted in to the fuse holder area in the fuse lever and can be closed by using a tool. Alternatively, the fuse lever itself can be removed and can be put back after replacing the fuse if that is more convenient for the maintenance engineer.

Fuse rating and fuse type specifications are listed under modules specification. In case the requirement is not to use a 5mm x 20mm fuse a dummy fuse (HPN 50150243) which is can be used instead of glass fuse of specific rating. Details given below.



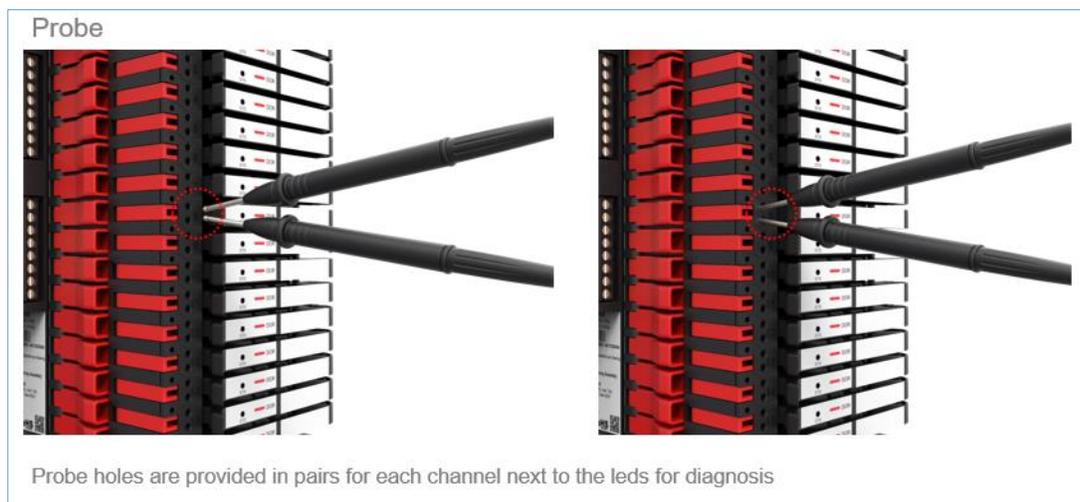
### 6.13 Knife Disconnect



Knife disconnect levers are recommended to open with a suitable screwdriver as shown in the graphics. Closing of the disconnect lever can be done by pressing the lever towards the assembly.

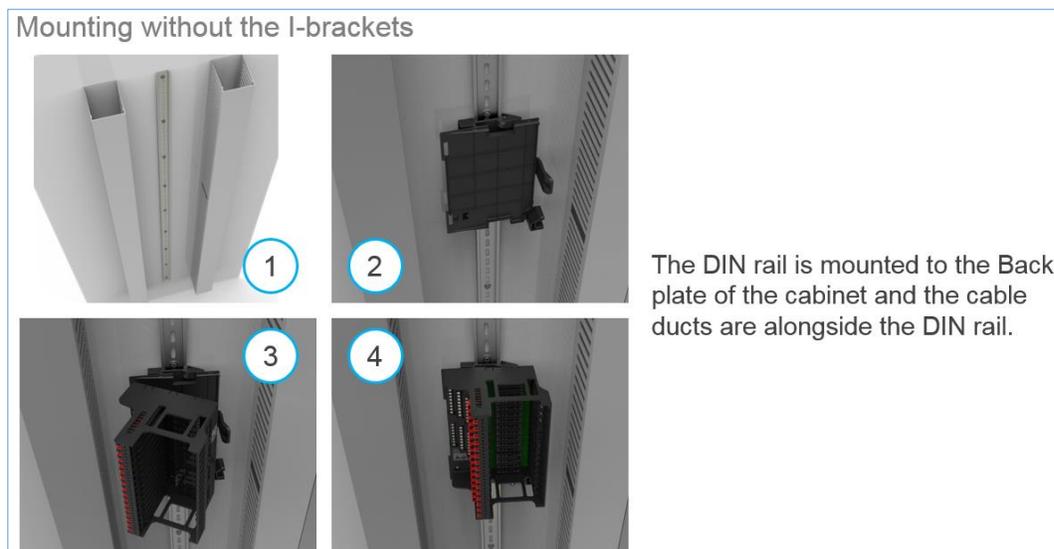
Disconnect lever shall be opened using 3/16" (4.5mm ) wide slotted screw driver.

## 6.14 Probe

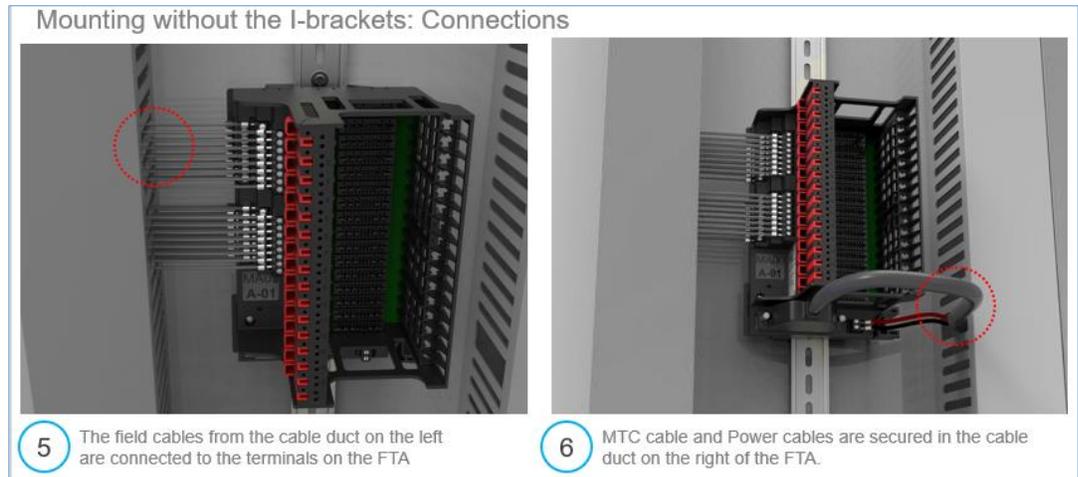


There are options provided for inserting multimeter probes to the knife disconnect point for the measurement of current through field cables. Each probe can engage each side of the knife disconnect terminals. Once the multimeter probes are inserted properly and then the knife disconnect can be opened so that the field side current will flow through the multimeter. This allows a field side current reading without interrupting the ongoing process.

## 6.15 Mounting without the I-brackets



## 6.16 Mounting without the I-brackets: connections

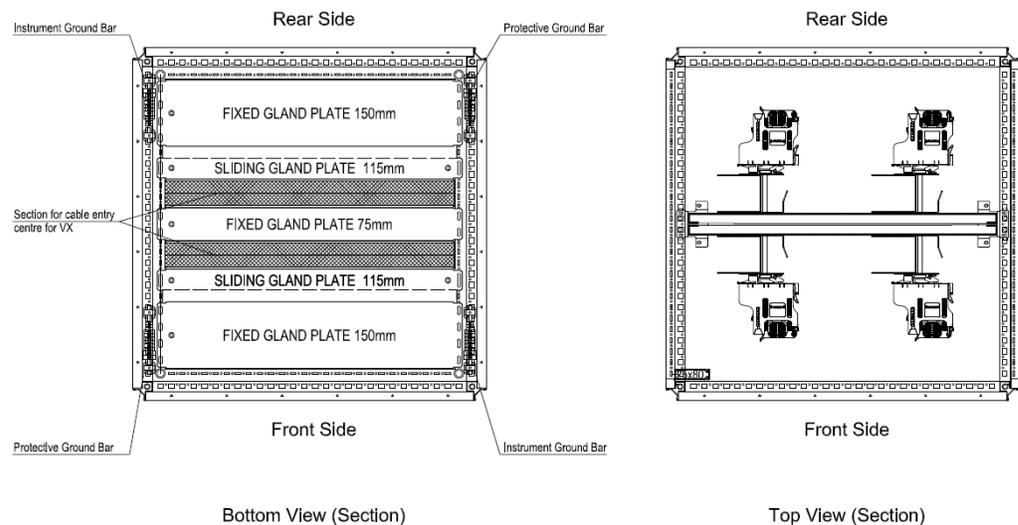


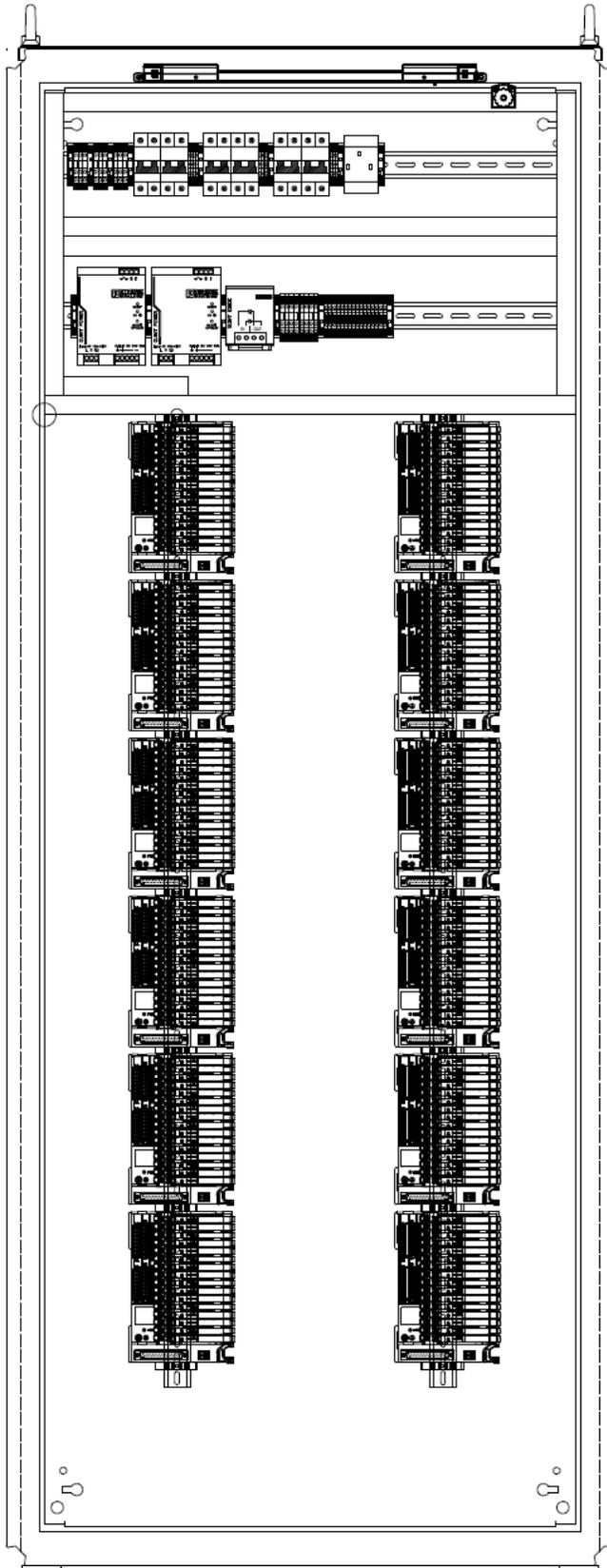
Mounting on to back plate of the cabinet is explained above and the mounting procedure similar to the one explained for 3 column assembly with I bracket.

When mounted on back plate (without I bracket) the field cables can be routed straight in to the cable duct.

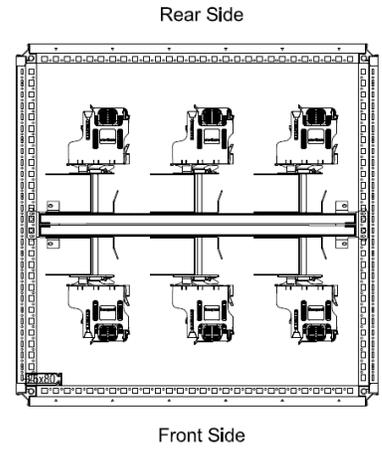
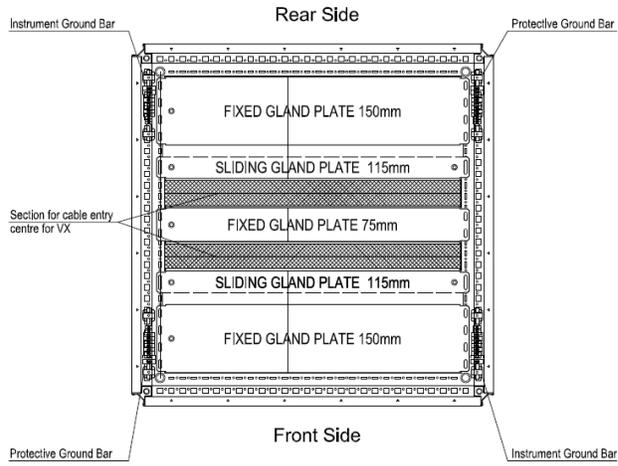
## 6.17 Cabinet assembly

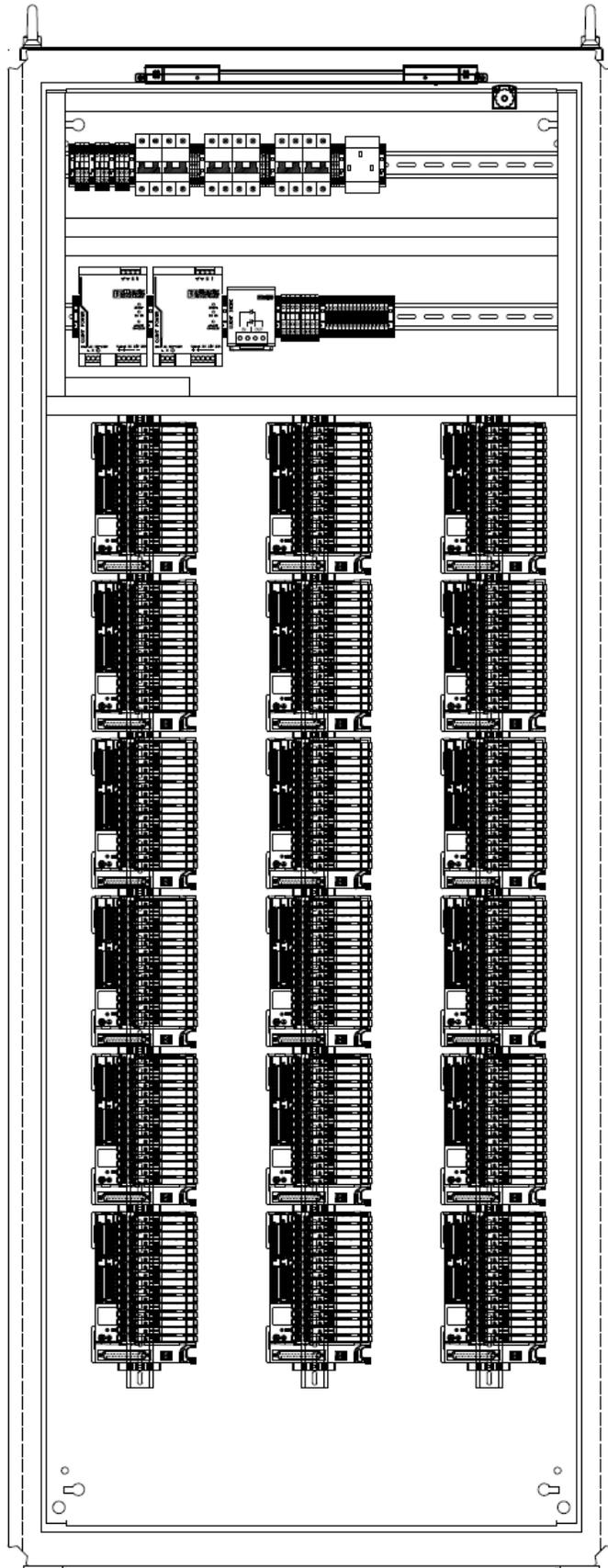
Following is the general arrangements for a two-column cabinet assembly.





General arrangements for a three-column cabinet assembly is provided below.





## 7 Cable and Connector Pinouts

### 7.1 Field side terminations

Field TB Pinouts (E1 and E2)			Channel Number	Terminal Block picture
1A	1B	1C	1	
2A	2B	2C	2	
3A	3B	3C	3	
4A	4B	4C	4	
5A	5B	5C	5	
6A	6B	6C	6	
7A	7B	7C	7	
8A	8B	8C	8	
9A	9B	9C	9	
10A	10B	10C	10	
11A	11B	11C	11	
12A	12B	12C	12	
13A	13B	13C	13	
14A	14B	14C	14	
15A	15B	15C	15	
16A	16B	16C	16	

### 7.2 MTC connector terminations

P1(Dsub connector on SCA)	DCS Termination (Channel number)	P1(Dsub connector on SCA)	DCS Termination (Channel number)	
Pin 1	CH1+	Pin 9	CH9+	
Pin 20	CH1-	Pin 28	CH9-	
Pin 2	CH2+	Pin 10	CH10+	
Pin 21	CH2-	Pin 29	CH10-	
Pin 3	CH3+	Pin 11	CH11+	

Pin 22	CH3-	Pin 30	CH11-
Pin 4	CH4+	Pin 12	CH12+
Pin 23	CH4-	Pin 31	CH12-
Pin 5	CH5+	Pin 13	CH13+
Pin 24	CH5-	Pin 32	CH13-
Pin 6	CH6+	Pin 14	CH14+
Pin 25	CH6-	Pin 33	CH14-
Pin 7	CH7+	Pin 15	CH15+
Pin 26	CH7-	Pin 34	CH15-
Pin 8	CH8+	Pin 16	CH16+
Pin 27	CH8-	Pin 35	CH16-
Pin 17,18,19	NC	Pin 36	NC
		Pin 37	NC

### 7.3 Power supply connector terminations

Power TB(E3)		Description
Pin 1	GND (-)	
Pin 2	PWR (+)	

## 8 Hardware Components

### 8.1 Universal Pass Through Adapter (model CC-UPTA01)

#### 8.1.1 Function

CC-UPTA01 is a single channel pass through module which allows direct connectivity between DCS field terminals (both live & return) and the field device. This module does not require external power to operate.

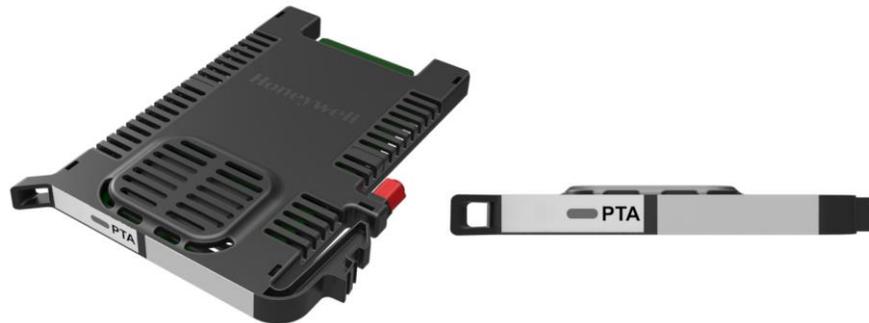
#### 8.1.2 Features

Number of channels: 1

Compatible with Honeywell Series C & Universal IO

CC-UPTA01 is a single channel pass through adapter which allows direct connectivity between DCS field terminals (both live & return) and the field device. This module does not require external power to operate.

PTA modules are neutral personality, can be plugged in to any of the module slots which connects the 2 connections of IO hardware of a given channel to the respective field side screw terminals of FTA.



#### 8.1.3 Module physical specification

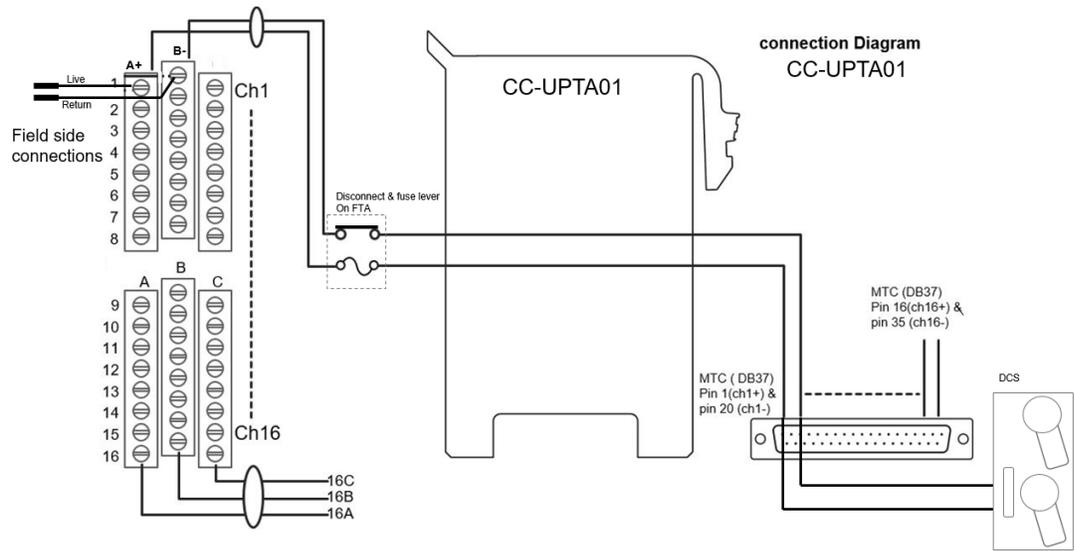
Dimensions	118 mm x 85.5 mm x10.0mm
Assembly option	Backplane mount, screw less

#### 8.1.4 Functional

Connections	Connects 2 signal lines from DCS side to field side
-------------	---

Indicators	No status indicators
------------	----------------------

### 8.1.5 Passthrough Connection diagrams



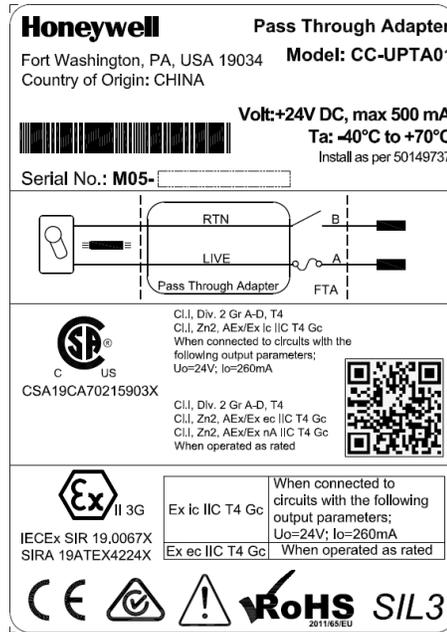
### 8.1.6 Electrical

Operating voltage:	max 30VDC
Maximum rated current (continuous):	500mA

### 8.1.7 Associated part numbers

Sl #	Part details	Model number	Part number
1	FTA assembly	CC-USCA01	51156590-100
3	MTC cable		51156516

## 8.1.8 Label

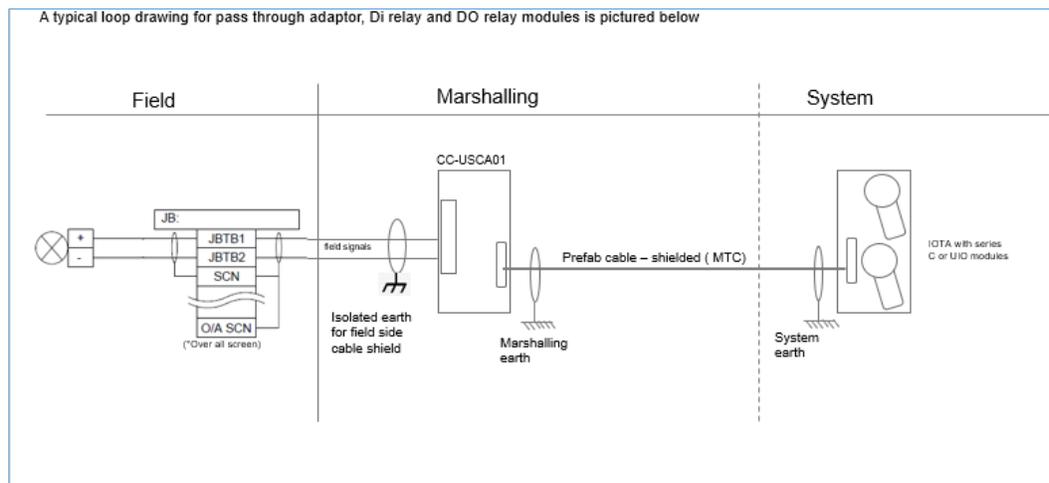


 NOTE	When the QR code is scanned, the following link will be opened. <a href="https://www.honeywellprocess.com/library/marketing/tech-specs/Pass-Through-Adapter-CC-UPTA01.pdf">https://www.honeywellprocess.com/library/marketing/tech-specs/Pass-Through-Adapter-CC-UPTA01.pdf</a>
---	--

## 8.1.9 Fuse rating

When CC-UPTA01 is in use the fuse rating shall be according to the specific IO type and IO current. Max functional current which CC-UPTA01 can be used is 500mA.

## 8.1.10 Loop Typical



CC-UPTA01 connects 2 connections of a given channel from IO hardware to the field side screw terminals of SCA. These modules are not intended to perform from the below scenarios

CC-UPTA01 cannot be used for wiring modes where 2 to 3 wire convertors and 2-4 wire convertors are implemented. PTA performs only for 2-wire to 2-wire connections.

This module cannot connect when NC & COM connector of a DOR are in use, it connects IO hardware connections to COM & NO at the field terminals.

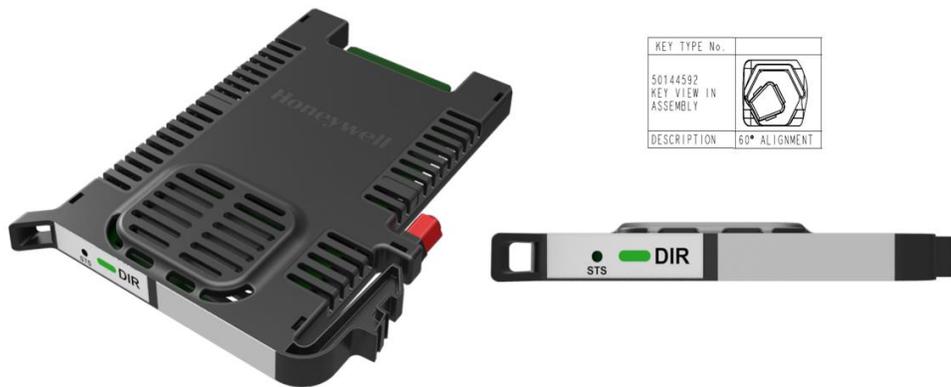
## 8.2 Universal Digital Input Relay (model CC-UDIR01)

### 8.2.1 Module descriptions

CC-UDIR01 is a single channel relay input module for low voltage applications. Coil side of the relay interfaces with the field device and the contact side gets connected (COM & NO) to digital input channels of IO hardware. This module does not require external power to operate. Relay used in DIR modules are electromechanical type.

### 8.2.2 Module physical specification

Dimensions	118 mm x 85.5 mm x10.0mm
Assembly option	Backplane mount, screw less
Mistake proofing	mistake proofing keys provided



### 8.2.3 Functional

CC-UDIR01 is a single channel relay input module for low voltage applications. Coil side of the relay interfaces with the field device and the contact side gets connected to DCS. This module does not require external power to operate.



Module power	No external power
--------------	-------------------

### Contact Side

Contact type	SPDT – COM & NO is wired to MTC
Contact material	AgSnO <sub>2</sub> , gold plated
Contact side switching voltage	24V
Minimum switching current	10mA
Maximum continuous current	500mA
Mechanical endurance of relay	5 million operations
Coil to contact Isolation	1500V AC

### 8.2.7 Associated part numbers

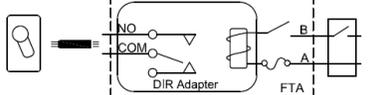
Sl #	Part details	Model number	Part number
1	FTA assembly	CC-USCA01	51156590-100
3	MTC cable		51156516

### 8.2.8 Label

**Honeywell** **Digital Input Relay**  
Fort Washington, PA, USA 19034 **Model: CC-UDIR01**  
Country of Origin: CHINA

**Coil: +24V DC, max 10 mA**  
**Cont: 24V DC, max 500 mA**  
**Ta: -40°C to +70°C**

Serial No.: M04-



DIR Adapter      FTA

 Cl, Div. 2 Gr A-D, T4  
Cl, Zn2, AExIEx nA nC IIC T4 Gc  
Cl, Zn2, AExIEx ec nC IIC T4 Gc  
CSA19CA70215903X

 II 3G Ex ec nC IIC T4 Gc  
SIRA 19ATEX4224X

Ex ec nC IIC T4 Gc  
IECEX SIR 19.0067X










NOTE

When the QR code is scanned, the following link will be opened.

<https://www.honeywellprocess.com/library/marketing/tech-specs/Digital-Input-Relay-CC-UDIR01.pdf>

### 8.2.9 Fuse rating

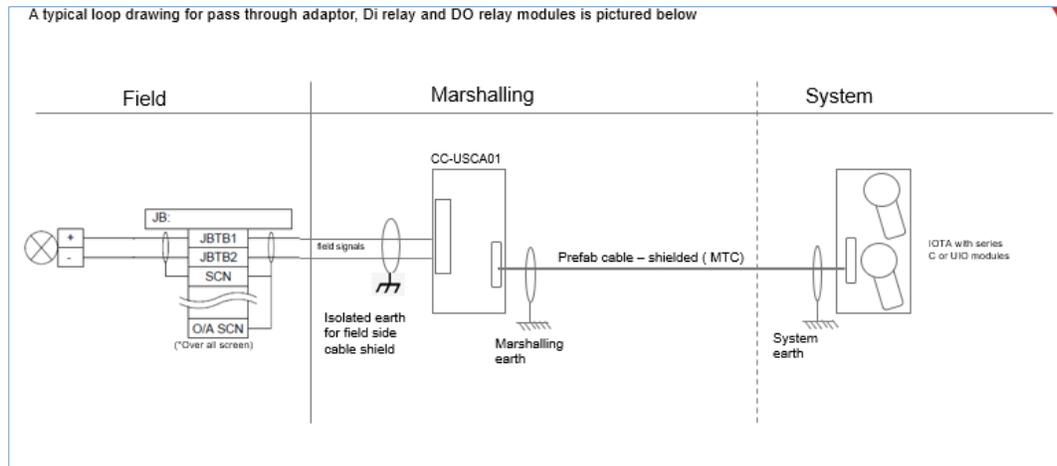
Field side connections of CC-UDIR01 module passes through the fuse arm which is integrated with the FTA assembly which is designed to use standard M 5 x 20mm glass fuse. In the case of Div2/zone2 installations instructions provided in HAZLOC manual to be followed.

Recommended fuse rating for the field side connections of DIR would be 30mA.

### 8.2.10 Protection scheme

Field side connections (coil side) of CC-UDIR01 modules are provided with reverse polarity protection diodes and freewheeling diodes for the coil.

### 8.2.11 Loop Typical



## 8.3 Universal Digital Output Relay (model CC-UDOR01)

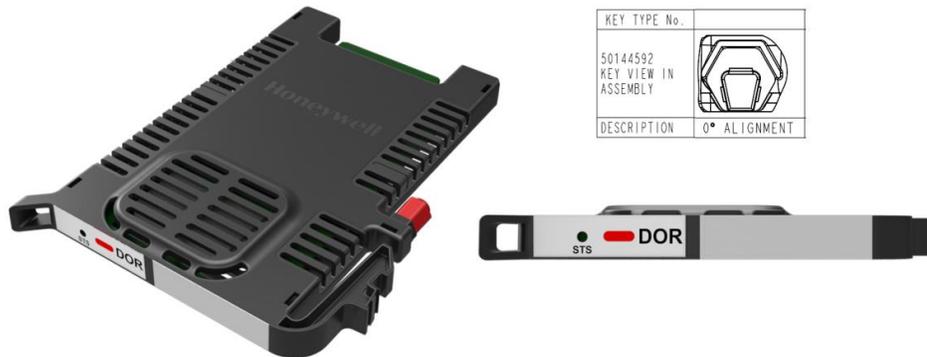
### 8.3.1 Provide module descriptions, features.

CC-UDOR01 is a single channel relay output module for low voltage applications. Contact side of the relay interfaces with the field device and the coil side gets connected to DCS. This module does not require external power to operate. Relay used in CC-UDOR01 modules are electromechanical type.

### 8.3.2 Module physical specification

Dimensions	118 mm x 85.5 mm x10.0mm
------------	--------------------------

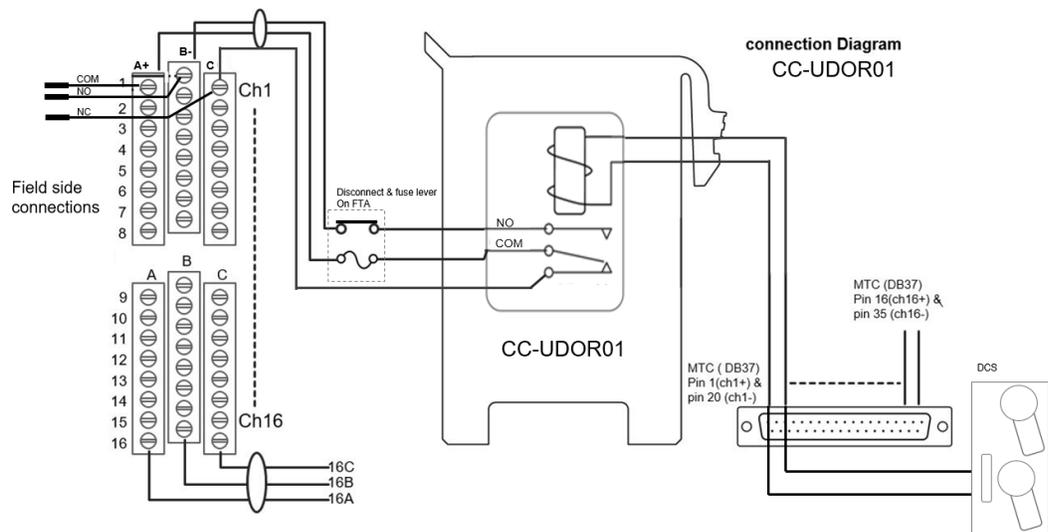
Assembly option	Backplane mount, screw less
Mistake proofing	mistake proofing keys provided



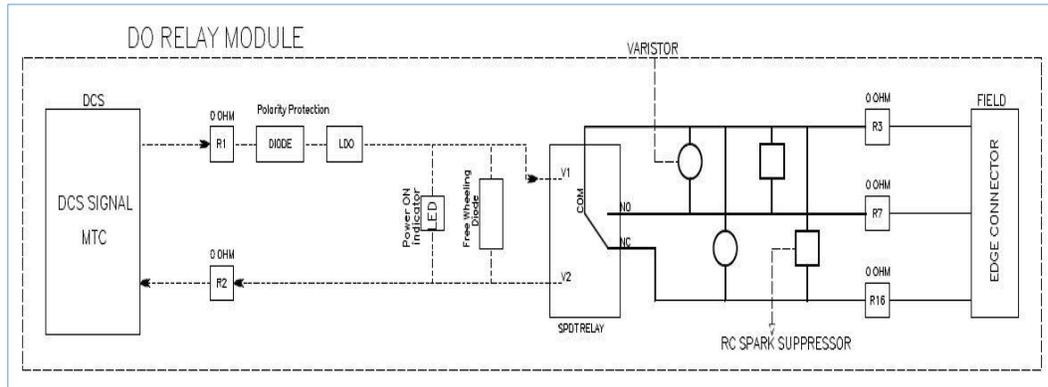
### 8.3.3 Functional

CC-UDOR01 is a single channel relay output module for low voltage applications. Contact side of the relay interfaces with the field device and the coil side gets connected to DCS. This module does not require external power to operate.

### 8.3.4 Connections diagram



DO relay for 1 channel



### 8.3.5 Features

- Number of channels: 1
- Relay type - Electro mechanical
- Compatible with Honeywell Series C DO module & Universal IO

### 8.3.6 Electrical

Coil side

Coil voltage	24V DC
Typical input current	8.00mA
Coil side protection	Reverse polarity protection
Coil side indicator	Coil side activity indicator - Green LED
Typical response time	7mS
Typical release time	8mS
Power dissipation	200mW
Module power	No external power required

Contact Side

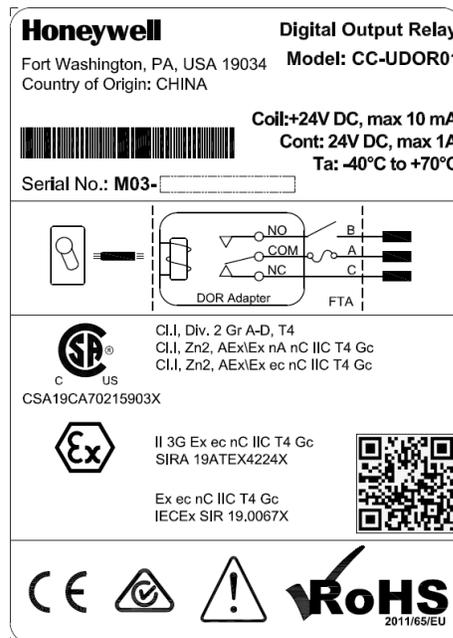
Contact type	SPDT with dedicated screw terminals on FTA for COM, NO & NC
Contact material	AgSnO <sub>2</sub> , gold plated
Max contact side switching voltage	24V
Minimum current	10mA

Maximum continuous current	1A
Maximum inrush current	2A
Load types	Inductive, resistive
Mechanical endurance of relay	5 million operations
Isolation	Coil to contact Isolation: 1500V AC rms

### 8.3.7 Associated part numbers

Sl #	Part details	Model number	Part number
1	FTA assembly	CC-USCA01	51156590-100
3	MTC cable		51156516

### 8.3.8 Label



 <b>NOTE</b>	<p>When the QR code is scanned, the following link will be opened.</p> <p><a href="https://www.honeywellprocess.com/library/marketing/tech-specs/Digital-Output-Relay-CC-UDOR01.pdf">https://www.honeywellprocess.com/library/marketing/tech-specs/Digital-Output-Relay-CC-UDOR01.pdf</a></p>
--	---

### 8.3.9 Fuse rating

Contact side connections from CC-UDOR01 gets connected to the field through the fuse arm integrated to the FTA assembly where M5 x 20mm glass fuse can be installed. In the

case of Div2/zone2 installations instructions provided in HAZLOC manual to be followed. Exact current rating of the fuse may be decided based on the functional load current for a given IO. Max continuous current is 1A and respective fuse rating could be 2A.

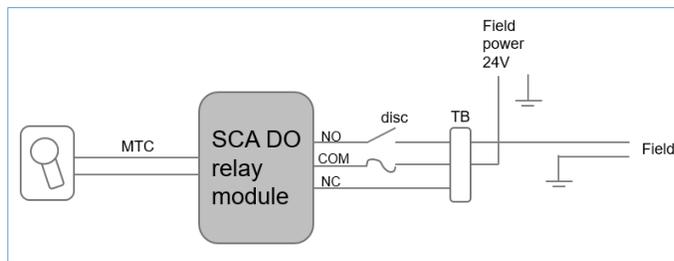
### Protection scheme

IO side connections (coil side) of CC-UDOR01 modules are provided with reverse polarity protection diodes and freewheeling diodes for the coil. Field side (contact) terminals are provided with spark suppression circuits to ensure long term reliability of relay switching operations.

### 8.3.10 Wiring options

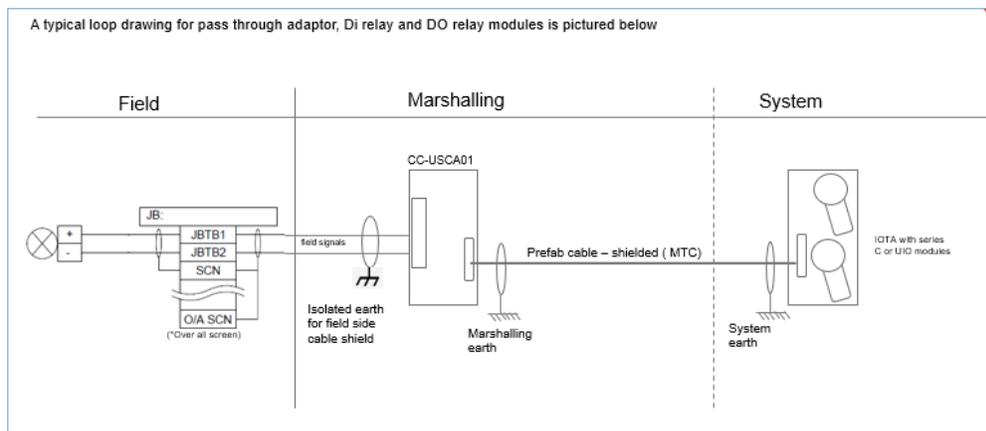
CC-UDOR01 modules can be operated in 2 different wiring modes

- COM & NO/NC combinations can be used as dry contacts where the power from the field will get switched based on DO channel activities at the IO side.
- Another option could be to wire the COM & NO/NC terminals to drive power to the field based on DO activities. In this case, the field side power source must be in the cabinet. Wiring at field side terminal block of FTA shall be done as shown in the following image, where COM to be connected to the source and NO can be driven to field.



In this case, the return connection need to be connected back to power supply.

### 8.3.11 Loop Typical



### 8.3.12 LED Indications

These modules are provided with green color LED to indicate coil side activities.

## 8.4 Universal Analog Input barrier (model CC-UGAI01)

CC-UGAI01 is a single channel galvanically isolated analog input barrier module which supports 4-20mA with HART. This module takes input from a field device and reflect the field side signals to DCS.

### 8.4.1 Module physical specification

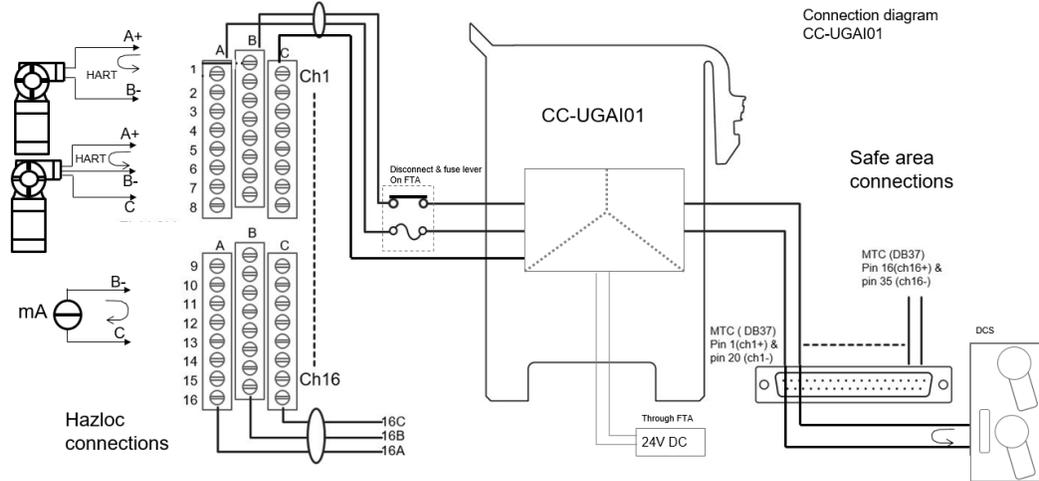
Parameter	Specification
Dimensions	141.5mm (L) x 85.75mm (W) x10mm (H)
Assembly option	Backplane mount, screw less
Mistake proofing	mistake proofing keys provided



### 8.4.2 Features

- Single channel galvanically Isolated Analog Input Barrier.
- Transparent Open Wire Detection
- 3-way Isolation
- Supports HART communication
- Reverse Polarity Protection
- 2 wires, 3 wire & 4 wires (2 wire sink) supported
- Power LED indication

### 8.4.3 Connections diagram



			Field side of CC-UGAI 01module		DCS side of CC-UGAI01 module
<b>Wiring mode</b>	<b>4-20mA</b>	<b>HART</b>	<b>Source mode</b>	<b>Sink mode</b>	<b>2 wire Sink mode</b>
2 wires	✓	✓	✓		✓
3 wires	✓		✓		✓
4 wires (2 wire sink)	✓			✓	✓

### 8.4.4 Specification

Parameter	Specifications
<b>Physical Specification</b>	
Dimensions	141.5mm (L) x 85.75mm (W) x10mm (H).
Assembly option	Backplane mount, screw less
Indicators	Power ON (green LED)
<b>Ambient Conditions</b>	

Ambient temperature (operation)	-40 °C to + 70 °C
Ambient temperature (storage/transport)	-40°C to + 85°C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Vibration	Non-Operational 1g 10Hz to 150Hz, Operational 0.5g 10Hz to 150Hz
Shock	5g operational, 15g Non-Operational
<b>Enclosure and Mounting</b>	
Assembly	Base plate and housing
Mounting	Base plate with DIN rail mount & snap housing to the base plate
<b>Electrical Specifications</b>	
Power supply	24V DC
Rated Current	55mA at 24V
Power Consumption	1.32W
Power dissipation	1W. at 24V DC with 20mA loop current
Field side wire gauge	12-24 AWG
<b>Compliance</b>	
Ingress protection	IP20 as per IEC 60529
Flammability rating	V0 as per UL 94
Conformance	ANSI/ISA 60079-0; 60079-15
EMC directive	2014/30/EU (IEC 61326-1 2012)
Certification	IEC Ex, ATEX, cCSAus
Compliance	RoHS

<b><u>Galvanic Isolation</u></b>	
Input to output	1500 VAC
<b><u>HAZLOC side interface</u></b>	

Input Channels	1 per module
Transfer accuracy at 20°C	+/- 20uA
Influence of ambient temperature	influence of ambient temperature reference to +20°C a. -30 °C to +70°C : 2uA /°C b. -40 °C to -30°C : 6uA /°C
Short circuit current	23.5mA
Available voltage at max load	>16V at 20mA field side current
Type of devices connected	Transmitters (4 to 20mA), 2 wires, 3 wires and 4 wire types

<b><u>Safe side interface</u></b>	
Voltage Input	24V DC
Current Input	4 to 20mA
Current in open wire condition	<150uA
Wiring scheme	2 wires

#### 8.4.5 Associated part numbers

Sl #	Part details	Model number	Part number
1	FTA assembly	CC- UGIA01	51156590-100
3	MTC cable		51156516

## 8.4.6 Label

**Honeywell** Analog Input Barrier  
 Fort Washington, PA, USA 19034 Model: CC-UGAI01  
 Country of Origin: CHINA

Power: +24V DC, 60 mA  
 Ta: -40°C to +70°C  
 Uo=25.2V Io=114.13mA  
 Um=250V

Serial No.: M07- [ ]

C US  
 CSA 19CA70215903X  
 II 3(1)G Ex ec [Ia Ga] IIC T4 Gc  
 SIRA 19ATEX4224X  
 Ex ec [Ia Ga] IIC T4 Gc  
 IECEx SIR 19.0067X  
 Installations as per 50149737

NOTE

When the QR code is scanned, the following link will be opened.  
<https://www.honeywellprocess.com/library/marketing/tech-specs/Analog-Input-Barrier-CC-UGAI01.pdf>

## 8.4.7 List of IO modules supported

1	CC-PAIH01	CC-TAIX01, CC-TAIX11	AI- HART	High Level Analog Input with HART
2	CC-PAIH02	CC-TAIX01, CC-TAIX11	AI- HART	High Level Analog Input with HART
3	CC-PAIX02	CC-TAIX01, CC-TAIX11	AI-HL	High Level Analog Input with Differential/Single-ended non-HART
4	CC-PAIX01	CC-TAIX01, CC-TAIX11	AI-hl	High Level Analog Input with Differential non-HART
5	CC-PAIN01	CC-TAIN01, CC-TAIN11	AI-hl	High Level Analog Input with non-HART 1 Modem, High Level Analog Input with HART
6	CC-PUIO31	CC-TUIO31, CC-TUIO41	UIO-2	UIO-2
7	CC-PAIH51	CC-TAIX51,	AIH	High Level Analog Input with HART

		CC-TAIX61		
--	--	-----------	--	--

#### 8.4.8 Fuse rating

Field side terminals of FTA assembly is provided with options for install M5 x 20mm glass fuse. In the case of Div2/zone2 installations instructions provided in HAZLOC manual to be followed. Exact current rating of the fuse may be decided based on the functional load current for a given IO.

#### 8.4.9 Protection scheme

- Power supply terminals of the modules are provided with reverse polarity protection
- Power rail is provided with inrush current control
- Field side terminals are provided with short circuit protection and reverse polarity protection
- Modules are provided with mistake proofing keys

#### 8.4.10 Conditions of use

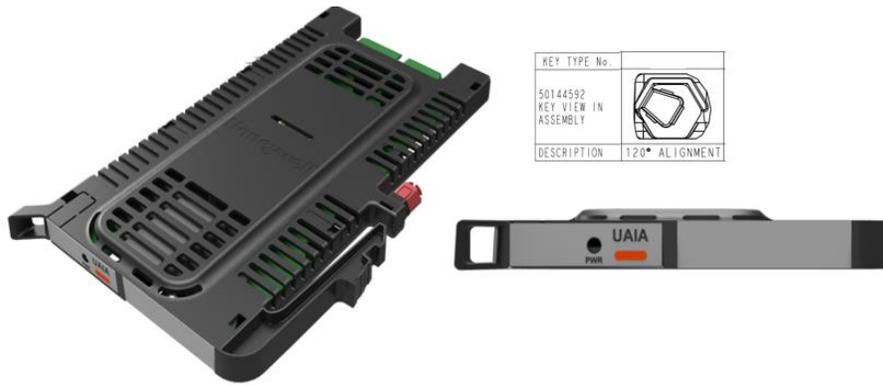
Refer to HAZLOC manual (document number 50149737 ) for conditions of use.

### 8.5 Universal Analog Input isolator (model CC- UAIA01)

CC-UAIA01 is a single channel galvanically isolated analog input module which supports 4-20mA with HART. This module takes input from a field device and reflect the field side signals to DCS.

#### 8.5.1 Module physical specification

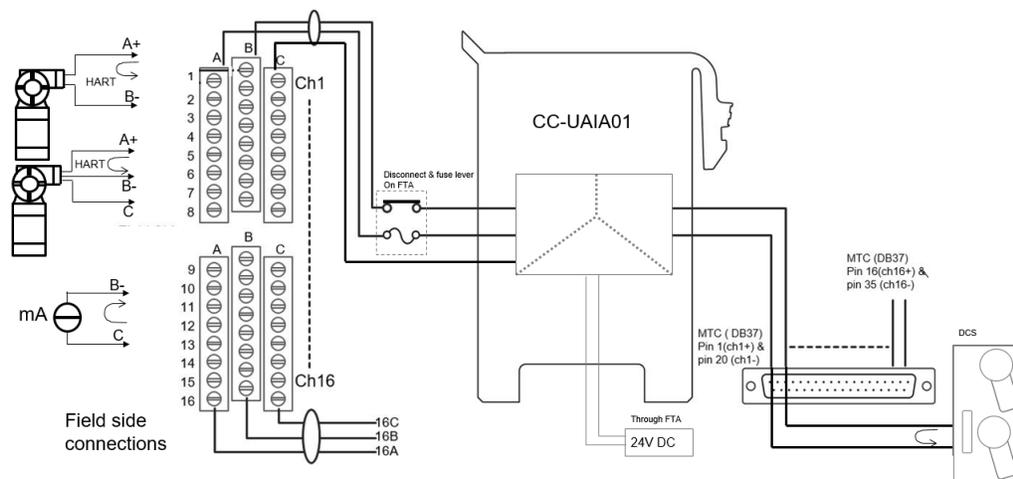
Module physical specification	
Dimensions	141.5mm (L) x 85.75mm (W) x10mm (H)
Assembly option	Backplane mount, screw less
Mistake proofing	mistake proofing keys provided



## 8.5.2 Features

- Single channel Isolated Analog Input isolator
- Transparent Open Wire Detection
- 3-way Isolation
- Supports HART communication
- Reverse Polarity Protection
- 2 wires, 3 wire & 4 wires (2 wire sink) supported
- Power LED indication

## 8.5.3 Connections diagram



			Field side of CC-UGAI01 module		DCS side of CC-UGAI01 module	
<b>Wiring mode</b>	<b>4-20mA</b>	<b>HART</b>	<b>Source mode</b>	<b>Sink mode</b>	<b>2 wire Sink mode</b>	
2 wires	✓	✓	✓		✓	
3 wires	✓		✓		✓	
4 wires (2 wire sink)	✓			✓	✓	

## 8.5.4 Specification

<b>Physical Specification</b>	
Dimensions	141.5mm (L) x 85.75mm (W) x10mm (H).
Assembly option	Back-plane mount, screw less
Indicators	Power ON (green LED)
<b>Ambient Conditions</b>	
Ambient temperature (operation)	-40°C to + 70°C
Ambient temperature (storage/transport)	-40°C to + 85°C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Vibration	Non-Operational 1g 10Hz to 150Hz, Operational 0.5g 10Hz to 150Hz
Shock	5g operational, 15g Non-Operational
<b>Enclosure and Mounting</b>	
Assembly	Base plate and housing
Mounting	Base plate with DIN rail mount & snap housing to the base plate
<b>Electrical Specifications</b>	
Power	24V DC
Rated Current	55mA at 24V
Power Consumption	1.32W
Power dissipation	1W at 24V DC with 20mA loop current
Field side wire gauge	12-24 AWG
<b>Compliance</b>	
<b>Ingress protection</b>	IP20 as per IEC 60529
Flammability rating	V0 as per UL 94
Conformance	ANSI/ISA 60079-0; 60079-15
EMC directive	2014/30/EU (IEC 61326-1 2012)

Certification	IEC Ex, ATEX, cCSAus
Compliance	RoHS

<b><u>Galvanic Isolation</u></b>	
Input to output	1500 VAC
<b><u>HAZLOC side interface</u></b>	
Input Channels	1 per module
Transfer accuracy at 20°C	+/- 20uA
Influence of ambient temperature	Influence of ambient temperature reference to +20°C a. -30 °C to +70°C : 2uA /°C b. -40 °C to -30°C : 6uA /°C
Short circuit current	23.5mA
Available voltage at max load	>16V at 20mA field side current
Type of devices connected	Transmitters (4 to 20mA), 2 wire, 3 wire and 4 wire types

<b><u>Safe side interface</u></b>	
Voltage Input	24V DC
Current Input	4 to 20mA
Current during open wire condition	<150uA
Wiring scheme	2 wire

### 8.5.5 Associated part numbers

Sl #	Part details	Model number	Part number
1	FTA assembly	CC- UGIA01	51156590-100
3	MTC cable		51156516

## 8.5.6 Label

**Honeywell** **Analog Input Isolator**

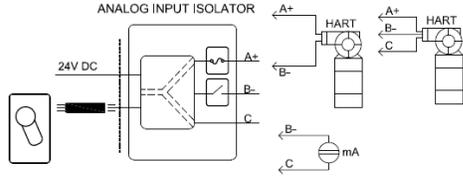
Fort Washington, PA, USA 19034 **Model: CC-UAIA01**

Country of Origin: CHINA

**Power: +24V DC, 62 mA**  
**Ta: -40°C to +70°C**



Serial No.: **M06-**



ANALOG INPUT ISOLATOR



CSA 19CA70215903X



Cl.I, Div. 2 Gr A-D, T4  
Cl.I, Zn2, AExIEx nA IIC T4 Gc  
Cl.I, Zn2, AExIEx ec IIC T4 Gc

II 3G Ex ec IIC T4 Gc  
SIRA 19ATEX4224X  
Ex ec IIC T4 Gc  
IECEX SIR 19.0067X  
Installations as per 50149737








 NOTE	<p>When the QR code is scanned, the following link will be opened.</p> <p><a href="https://www.honeywellprocess.com/library/marketing/tech-specs/Analog-Input-Isolator-CC-UAIA01.pdf">https://www.honeywellprocess.com/library/marketing/tech-specs/Analog-Input-Isolator-CC-UAIA01.pdf</a></p>
---	---

## 8.5.7 List of IO modules supported

1	CC-PAIH01	CC-TAIX01, CC-TAIX11	AI- HART	High Level Analog Input with HART
2	CC-PAIH02	CC-TAIX01, CC-TAIX11	AI- HART	High Level Analog Input with HART
3	CC-PAIX02	CC-TAIX01, CC-TAIX11	AI-HL	High Level Analog Input with Differential/Single-ended non-HART
4	CC-PAIX01	CC-TAIX01, CC-TAIX11	AI-hl	High Level Analog Input with Differential non-HART
5	CC-PAIN01	CC-TAIN01, CC-TAIN11	AI-hl	High Level Analog Input with non-HART 1 Modem, High Level Analog Input with HART
6	CC-PUIO31	CC-TUIO31, CC-TUIO41	UIO-2	UIO-2
7	CC-PAIH51	CC-TAIX51,	AIH	High Level Analog Input with HART

		CC-TAIX61		
--	--	-----------	--	--

### 8.5.8 Fuse rating

Field side terminals of FTA assembly is provided with options for install M5 x 20mm glass fuse. In the case of Div2/zone2 installations instructions provided in HAZLOC manual to be followed. Exact current rating of the fuse may be decided based on the functional load current for a given IO.

### 8.5.9 Protection scheme

- Power supply terminals of the modules are provided with reverse polarity protection
- Power rail is provided with inrush current control
- Field side terminals are provided with short circuit protection and reverse polarity protection
- Modules are provided with mistake proofing keys

### 8.5.10 Conditions of use

Refer to HAZLOC manual (document number 50149737 ) for conditions of use.

## 8.6 Universal Analog Output barrier (model CC- UGA001)

CC-UGA001 is a single channel galvanically isolated analog output barrier module which supports 4-20mA with HART. This module takes input from DCS and reflect this signal to the field.

### 8.6.1 Module physical specification

Dimensions	141.5mm (L) x 85.75mm (W) x10mm (H)
Assembly option	Backplane mount, screw less
Mistake proofing	mistake proofing keys provided



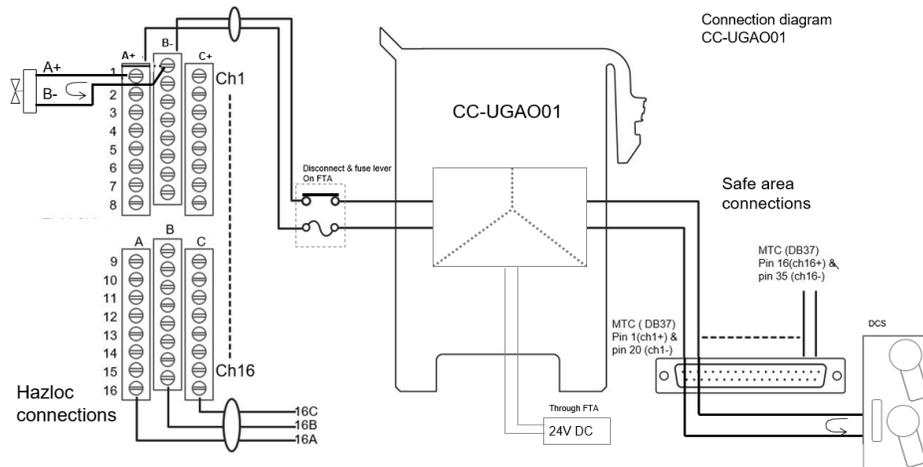
KEY TYPE No.	
50144592 KEY VIEW IN ASSEMBLY	
DESCRIPTION	240° ALIGNMENT



### 8.6.2 Features

- Single channel Isolated Analog Output Barrier.
- Transparent Open Wire Detection
- 3-way Isolation
- Supports HART communication
- Reverse Polarity Protection
- Power LED indication

### 8.6.3 Connections diagram



	Field side of CC-UGAO01 module		DCS side of CC-UGAO01 module		
<b>Wiring mode</b>	<b>4-20mA</b>	<b>HART</b>	<b>Source mode</b>	<b>Sink mode</b>	<b>Source mode</b>
2 wire	✓	✓	✓		✓

### 8.6.4 Specification

Parameter	Specifications
-----------	----------------

<b>Physical Specification</b>	
Dimensions	141.5mm (L) x 85.75mm (W) x10mm (H).
Assembly option	Back-plane mount, screw less
Indicators	Power ON (green LED)
<b>Ambient Conditions</b>	
Ambient temperature (operation)	-40°C to + 70°C
Ambient temperature (storage/transport)	-40°C to + 85°C
Permissible humidity (operation)	5 % - 95 % (non-condensing)
Vibration	Non-Operational 1g 10Hz to 150Hz, Operational 0.5g 10Hz to 150Hz
Shock	5g operational, 15g Non-Operational
<b>Enclosure and Mounting</b>	
Assembly	Base plate and housing
Mounting	Base plate with DIN rail mount & snap housing to the base plate
<b>Electrical Specifications</b>	
Power	24V DC
Rated Current	55mA at 24V
Power Consumption	1.32W
Power dissipation	1.22W at 24V DC with 20mA loop current & 250 ohm load
Field side wire gauge	12-24 AWG
<b>Compliance</b>	
<b>Ingress protection</b>	IP20 as per IEC 60529
Flammability rating	V0 as per UL 94
Conformance	ANSI/ISA 60079-0; 60079-15
EMC directive	2014/30/EU (IEC 61326-1 2012)
Certification	IEC Ex, ATEX, cCSAus

Compliance	RoHS
------------	------

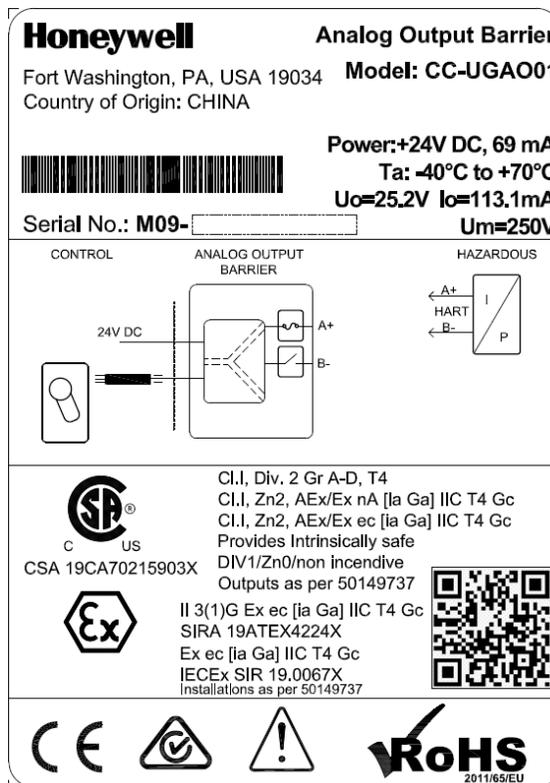
<b><u>Galvanic Isolation</u></b>	
Input to output	1500 VAC
<b><u>HAZLOC side interface</u></b>	
Input Channels	1 per module
Transfer accuracy at 20°C	+/- 20uA
Influence of ambient temperature	Influence of ambient temperature reference to +20°C -30 °C to +70°C : 2uA /°C -40 °C to -30°C : 6uA /°C
Max load	650 ohms
Type of devices connected	2 wire type

<b><u>Safe side interface</u></b>	
Voltage Input	24V DC
Current Input	4 to 20mA
Open wire current	<3.7mA
Wiring scheme	2 wire

### 8.6.5 Associated part numbers

Sl #	Part details	Model number	Part number
1	FTA assembly	CC- UGIA01	51156590-100
3	MTC cable		51156516

## 8.6.6 Label



 NOTE	<p>When the QR code is scanned, the following link will be opened.</p> <p><a href="https://www.honeywellprocess.com/library/marketing/tech-specs/Analog-Output-Barrier-CC-UGAO01.pdf">https://www.honeywellprocess.com/library/marketing/tech-specs/Analog-Output-Barrier-CC-UGAO01.pdf</a></p>
---	---

## 8.6.7 List of IO modules supported

1	CC-PAON01	CC-TAON01, CC-TAON11	AO	Analog Output with non-HART
2	CC-PAOX01	CC-TAOX01, CC-TAOX11	AO	Analog Output with non-HART
3	CC-PAOH01	CC-TAOX01, CC-TAOX11	AO- HART	Analog Output with HART
4	CC-PUIO31	CC-TUIO31, CC-TUIO41	UIO-2	UIO-2

## 8.6.8 Fuse rating

Field side terminals of FTA assembly is provided with options for install M5 x 20mm glass fuse. In the case of Div2/zone2 installations instructions provided in HAZLOC manual to

be followed. Exact current rating of the fuse may be decided based on the functional load current for a given IO.

### 8.6.9 Protection scheme

- Power supply terminals of the modules are provided with reverse polarity protection
- Power rail is provided with inrush current control
- Field side terminals are provided with short circuit protection and reverse polarity protection
- Modules are provided with mistake proofing keys

### 8.6.10 Conditions of use

Refer to HAZLOC manual (document number 50149737 ) for conditions of use.

## 8.7 Universal Analog Output barrier (model CC- UAOA01)

CC-UAOA01 is a single channel galvanically isolated analog output module which supports 4-20mA with HART. This module takes input from DCS and reflect this signal to the field.

### 8.7.1 Module physical specification

Dimensions	141.5mm (L) x 85.75mm (W) x10mm (H)
Assembly option	Backplane mount, screw less
Mistake proofing	mistake proofing keys provided

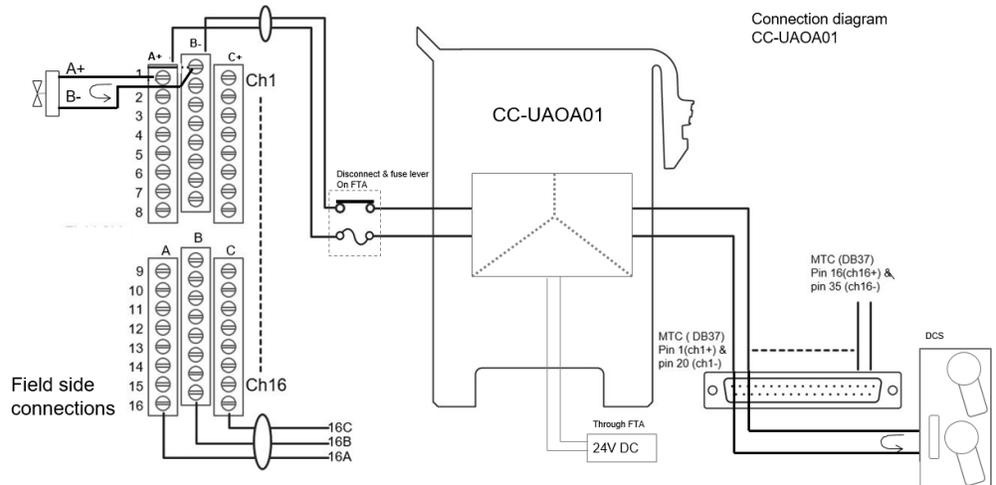


### 8.7.2 Features

- Single channel Isolated Analog Output module.

- Transparent Open Wire Detection
- 3-way Isolation
- Supports HART communication
- Reverse Polarity Protection
- Power LED indication

### 8.7.3 Connections diagram



			Field side of CC-UAOA01 module		DCS side of CC-UAOA01 module
<b>Wiring mode</b>	<b>4-20mA</b>	<b>HART</b>	<b>Source mode</b>	<b>Sink mode</b>	<b>Source mode</b>
2 wire	✓	✓	✓		✓

### 8.7.4 Specification

Parameter	Specifications
<b>Physical Specification</b>	
Dimensions	141.5mm (L) x 85.75mm (W) x10mm (H).
Assembly option	Back-plane mount, screw less
Indicators	Power ON (green LED)
<b>Ambient Conditions</b>	
Ambient temperature (operation)	-40°C to + 70°C
Ambient temperature (storage/transport)	-40°C to + 85°C
Permissible humidity (operation)	5 % - 95 % (non-condensing)

Vibration	Non-Operational 1g 10Hz to 150Hz, Operational 0.5g 10Hz to 150Hz
Shock	5g operational, 15g Non-Operational
<b>Enclosure and Mounting</b>	
Assembly	Base plate and housing
Mounting	Base plate with DIN rail mount & snap housing to the base plate
<b>Electrical Specifications</b>	
Power	24V DC
Rated Current	55mA at 24V
Power Consumption	1.32W at 20mA
Power dissipation	1.22W at 24V DC with 20mA loop current & 250 ohm load
Field side wire gauge	12-24 AWG
<b>Compliance</b>	
<b>Ingress protection</b>	IP20 as per IEC 60529
Flammability rating	V0 as per UL 94
Conformance	ANSI/ISA 60079-0; 60079-15
EMC directive	2014/30/EU (IEC 61326-1 2012)
Certification	IEC Ex, ATEX, cCSAus
Compliance	RoHS

<b><u>Galvanic Isolation</u></b>	
Input to output	1500 VAC
<b><u>HAZLOC side interface</u></b>	
Input Channels	1 per module
Transfer accuracy at 20°C	+/- 20uA
Max load	650 ohms
Type of devices connected	2 wire type

Influence of ambient temperature	Influence of ambient temperature reference to +20°C a. -30 °C to +70°C : 2uA /°C b. -40 °C to -30°C : 6uA /°C
----------------------------------	---

<b>Safe side interface</b>	
Voltage Input	24V DC
Current Input	4 to 20mA
Open wire current	<3.7mA
Wiring scheme	2 wire

### 8.7.5 Associated part numbers

Sl #	Part details	Model number	Part number
1	FTA assembly	CC- UGIA01	51156590-100
3	MTC cable		51156516

### 8.7.6 Label

**Honeywell** Analog Output Isolator  
Fort Washington, PA, USA 19034 Model: CC-UAOA01  
Country of Origin: CHINA

**Power: +24V DC, 66 mA**  
**Ta: -40°C to +70°C**

Serial No.: M08-

CONTROL

ANALOG OUTPUT ISOLATOR

HAZARDOUS

Cl.I, Div. 2 Gr A-D, T4  
Cl.I, Zn2, AExIEx nA IIC T4 Gc  
Cl.I, Zn2, AExIEx ec IIC T4 Gc  
CSA 19CA70215903X

II 3G Ex ec IIC T4 Gc  
SIRA 19ATEX4224X  
Ex ec IIC T4 Gc  
IECEX SIR 19.0067X  
Installations as per 50149737



NOTE

When the QR code is scanned, the following link will be opened.

<https://www.honeywellprocess.com/library/marketing/tech-specs/Analog-Output-Isolator-CC-UAOA01.pdf>

### 8.7.7 List of IO modules supported

1	CC-PAON01	CC-TAON01, CC-TAON11	AO	Analog Output with non-HART
2	CC-PAOX01	CC-TAOX01, CC-TAOX11	AO	Analog Output with non-HART
3	CC-PAOH01	CC-TAOX01, CC-TAOX11	AO- HART	Analog Output with HART
4	CC-PUIO31	CC-TUIO31, CC-TUIO41	UIO-2	UIO-2

### 8.7.8 Fuse rating

Field side terminals of FTA assembly is provided with options for install M5 x 20mm glass fuse. In the case of Div2/zone2 installations instructions provided in HAZLOC manual to be followed. Exact current rating of the fuse may be decided based on the functional load current for a given IO.

### 8.7.9 Protection scheme

- Power supply terminals of the modules are provided with reverse polarity protection
- Power rail is provided with inrush current control
- Field side terminals are provided with short circuit protection and reverse polarity protection
- Modules are provided with mistake proofing keys

### 8.7.10 Conditions of use

Refer to HAZLOC manual (document number 50149737) for conditions of use.

## 8.8 Universal Digital Input Output barrier (model CC- UGDA01)

CC-UGDA01 is a single channel galvanically isolated digital input/output barrier module. This module configure itself to DI/DO mode based on IO module type interfaced at DCS side. DIO module also supports DI NAMUR mode.

## 8.8.1 Module physical specification

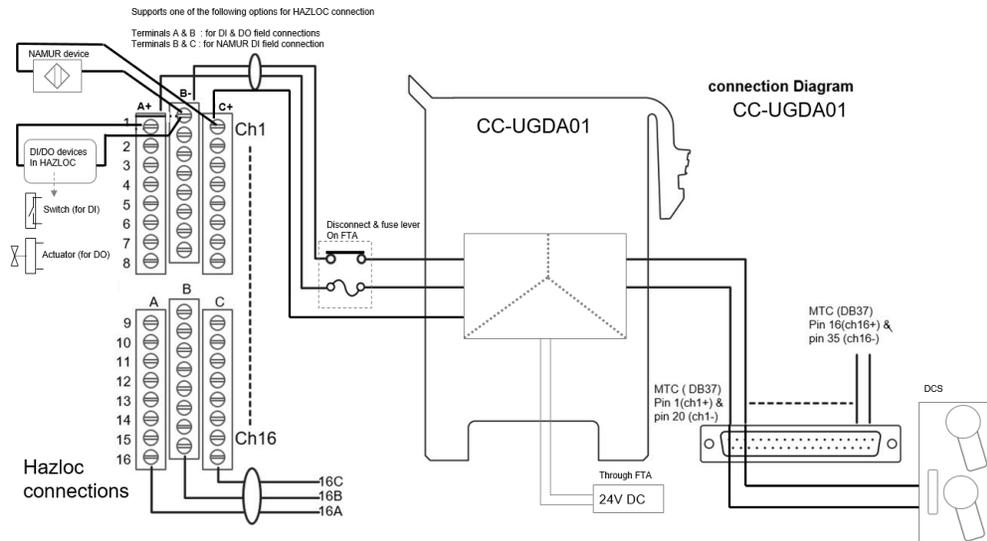
Dimensions	141.5mm (L) x 85.75mm (W) x10mm (H)
Assembly option	Backplane mount, screw less
Mistake proofing	mistake proofing keys provided



## 8.8.2 Features

- Single channel Isolated Digital Input Output Barrier.
- Interfaces with Digital Inputs or Digital Outputs
- Self-Configuring Digital Input Output Module
- Digital Input support for NAMUR sensors or Dry Contacts
- Digital Output Drive up to 40mA
- Transparent Open Wire Detection
- 3 way Isolation
- Field Device Status Indication
- Reverse Polarity Protection

## 8.8.3 Connections diagram



## 8.8.4 Specification

Parameter	Specification
Input / Output Model	CC-UGDA01 - IS Digital Barrier Module
<b>Power Supply</b>	
Supply	24V DC
Rated Current	<= 22mA @ 7.5mA Load (DI) <= 67mA @ 40mA Load (DO)
Power Consumption	525mW @ 7.5mA Load (DI) 1.608W @ 40mA Load (DO)
Power Dissipation	1.1W at 24V supply, 300Ω output load
<b>Electrical Isolation</b>	
Power/Control to Field	1500 VAC
<b>Digital Inputs</b>	
Input Channels	1
HAZLOC Terminals	Through 3 tier terminal blocks on CC-UGIA01 A(+), B(-) for DI dry contacts C(+), B(-) for DI NAMUR Sensor
Input Type	DI NAMUR Sensor (IEC/EN 60947-5-6), Dry Contacts
DI NAMUR Open Source Voltage	10V, 1KΩ Series Resistance
Current Output (Low Current Mode)	<= 8mA, Source Mode
Current for Guaranteed ON Condition	> 2.1mA
Current for Guaranteed OFF Condition	> 1.2mA
Status Indication LED	GREEN: DI ON

	RED : DI OFF OFF : Open Wire
<b>Control Terminals</b>	
Voltage Input	24V DC
Current Input	Sink Mode ON >2.1mA ... <7mA OFF < 1.2mA Open Wire < 100uA
Settling Time	< 1ms
<b>Digital Outputs</b>	
<b>HAZLOC interface</b>	
HAZLOC Terminals	Through 3 tier terminal blocks on CC-UGIA01 A+(+), B(-) for DO
Output Type	Solenoid Valves, Relays Coils, Alarms
DO Open Source Voltage	~21.5V
Current Output (High Current Mode)	12V/40mA at 300Ω load
Current Output Limit (High Current Mode)	48mA max
Current Output Limit (Low Current Mode)	8mA max
<b>Safe side interface</b>	
DO On/OFF Voltage Thresholds	ON → 18 ... 30V OFF → 0 ... 5V
DO On/OFF Current	Sink Mode ON >2.1mA ... <7mA OFF : 1mA Open Wire < 100uA
Response Time	< 1ms
<b>Compliance</b>	
Ingress protection	IP20 as per IEC 60529
Flammability rating	V0 as per UL 94
Conformance	ANSI/ISA 60079-0; 60079-15
EMC directive	2014/30/EU (IEC 61326-1 2012)
Certification	IEC Ex, ATEX, cCSAus
Compliance	RoHS

## Entity parameters

Parameter	Specification
-----------	---------------

Maximum Safe Voltage (Um)	250V
<b>Field Terminal</b>	A+(+), B(-) DI Dry Contact/DO
Uo	25.2 V
Io	129.4 mA
Po	816 mW
<b>Field Terminal</b>	C(+), B(-) DI NAMUR Sensor
Uo	12.6 V
Io	13.3 mA
Po	41.8 mW

### Additional Configuration

The IS Digital Barrier Module additionally supports configurations with a use of a DIP switch located in the front panel of the module.

Switch	Position	Configuration	Specification
1	Up	Field Current Output	Low Current Mode
	Down		High Current Mode

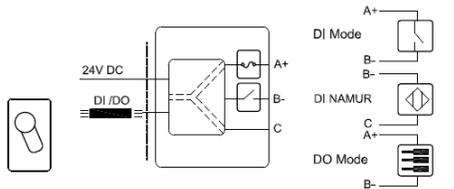
\* this is a dual pole switch, second pole is reserved for future

### 8.8.5 Label

**Honeywell** Digital Input Output Barrier  
Fort Washington, PA, USA 19034 Model: CC-UGDA01  
Country of Origin: CHINA

Power: +24V DC, 68 mA  
Ta: -40°C to +70°C  
Uo=25.2V Io=129.4mA  
Um=250V

Serial No.: M11-



 C US  
CSA 19CA70215903X  
 II 3(1)G Ex ec [Ia Ga] IIC T4 Gc  
SIRA 19ATEX4224X  
Ex ec [Ia Ga] IIC T4 Gc  
IECEX SIR 19.0067X  
installations as per 50149737










NOTE

When the QR code is scanned, the following link will be opened.

<https://www.honeywellprocess.com/library/marketing/tech-specs/Digital-Input-Output-Barrier-CC-UGDA01.pdf>

### 8.8.6 List of IO modules supported

	IO module	IOTA	IO type	Description
1	CC-PDIL01	CC-TDIL01, CC-TDIL11	DI-24	Low Voltage Digital Input (24 volts DC)
2	CC-PDIS01	CC-TDIL01, CC-TDIL11	DI-SOE	Low Voltage Digital Input (24 volts DC)
3	CC-PDOB01	CC-TDOB01, CC-TDOB11	DO-24B	Bussed Low Voltage Digital Output (24 volts DC)
4	CC-PDIL51	CC-TDIL51, CC-TDIL61	DI-24	Low Voltage Digital Input (24 volts DC)
5	CC-PUIO31	CC-TUIO31, CC-TUIO41	UIO-2	UIO-2

### 8.8.7 Fuse rating

Field side terminals of FTA assembly is provided with options for install M5 x 20mm glass fuse. In the case of Div2/zone2 installations instructions provided in HAZLOC manual to be followed. Exact current rating of the fuse may be decided based on the functional load current for a given IO.

### 8.8.8 Protection scheme

- Power supply terminals of the modules are provided with reverse polarity protection
- Power rail is provided with inrush current control
- Field side terminals are provided with short circuit protection and reverse polarity protection
- Modules are provided with mistake proofing keys

## 8.9 Universal Digital Input Output isolator (model CC- UDXA01)

CC- UDXA01 is a single channel galvanically isolated digital input/output module. This module configure itself to DI/DO mode based on IO module type interfaced at DCS side. DIO module also supports DI NAMUR mode.

### 8.9.1 Module physical specification

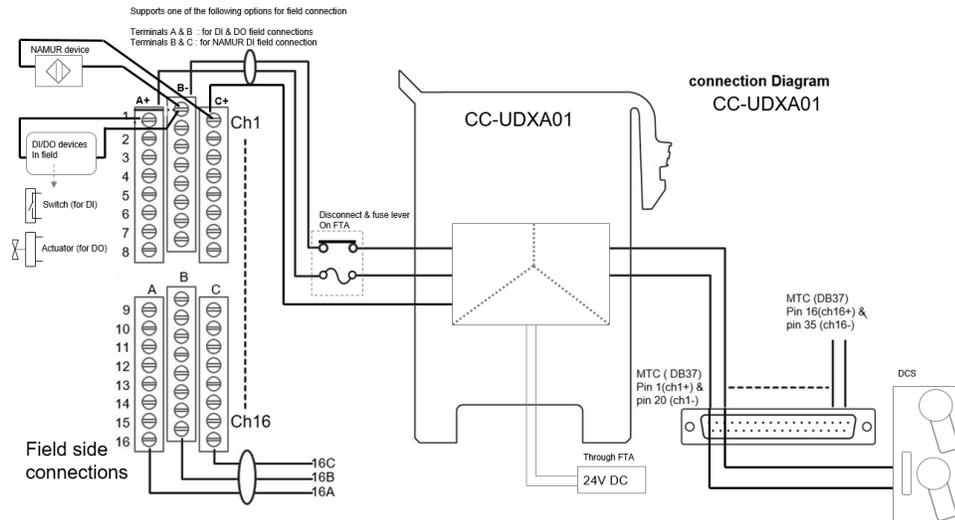
Dimensions	141.5mm (L) x 85.75mm (W) x10mm (H)
Assembly option	Backplane mount, screw less
Mistake proofing	mistake proofing keys provided



### 8.9.2 Features

- Single channel Isolated Digital Input Output Isolator .
- Interfaces with Digital Inputs or Digital Outputs
- Self-Configuring Digital Input Output Module
- Digital Input support for NAMUR sensors or Dry Contacts
- Digital Output Drive up to 40mA
- Transparent Open Wire Detection
- 3 way Isolation
- Field Device Status Indication
- Reverse Polarity Protection

## 8.9.3 Connections diagram



## 8.9.4 Specification

Parameter	Specification
Input / Output Model	CC-UDXA01 - IS Digital Isolator Module
<b>Power Supply</b>	
Supply	24V DC
Rated Current	<= 22mA @ 7.5mA Load (DI) <= 67mA @ 40mA Load (DO)
Power Consumption	525mW @ 7.5mA Load (DI) 1.608W @ 40mA Load (DO)
Power Dissipation	1.1W at 24V supply, 300Ω output load
<b>Electrical Isolation</b>	
Power/Control to Field	1500 VAC
<b>Digital Inputs</b>	
<b>Field interface</b>	
Field Terminals	Through 3 tier terminal blocks on CC-UGIA01 A(+), B(-) for DI dry contacts C(+), B(-) for DI NAMUR Sensor
Input Type	DI NAMUR Sensor (IEC/EN 60947-5-6), Dry Contacts
DI NAMUR Open Source Voltage	10V, 1KΩ Series Resistance
Current Output (Low Current Mode)	<= 8mA, Source Mode
Current for Guaranteed ON Condition	> 2.1mA
Current for Guaranteed OFF Condition	> 1.2mA
Status Indication LED	GREEN: DI ON RED : DI OFF

	OFF : Open Wire
<b>Control Terminals</b>	
Voltage Input	24V DC
Current Input	Sink Mode ON >2.1mA ... <7mA OFF < 1.2mA Open Wire < 100uA
Settling Time	< 1ms
<b>Digital Outputs</b>	
Output Channels	1
<b>Field Terminals</b>	
Field Terminals	Through 3 tier terminal blocks on CC-UGIA01 A+(+), B-(-) for DO
Output Type	Solenoid Valves, Relays Coils, Alarms
DO Open Source Voltage	~21.5V
Current Output (High Current Mode)	12V/40mA at 300Ω load
Current Output Limit (High Current Mode)	48mA max
Current Output Limit (Low Current Mode)	8mA max
<b>Compliance</b>	
Ingress protection	IP20 as per IEC 60529
Flammability rating	V0 as per UL 94
Conformance	ANSI/ISA 60079-0; 60079-15
EMC directive	2014/30/EU (IEC 61326-1 2012)
Certification	IEC Ex, ATEX, cCSAus
Compliance	RoHS

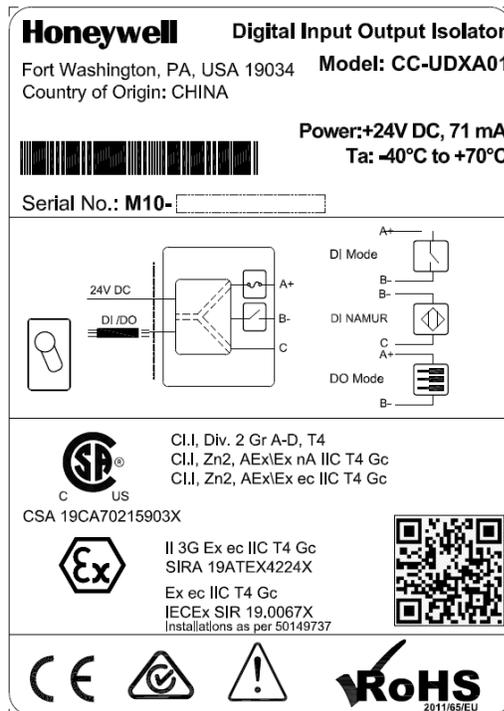
### Additional Configuration

The IS Digital Barrier Module additionally supports configurations with a use of a DIP switch located in the front panel of the module.

Switch	Position	Configuration	Specification
1	Up	Field Current Output	Low Current Mode
	Down		High Current Mode

\* this is a dual pole switch, second pole is reserved for future

## 8.9.5 Label



 <b>NOTE</b>	<p>When the QR code is scanned, the following link will be opened.</p> <p><a href="https://www.honeywellprocess.com/library/marketing/tech-specs/Digital-Input-Output-Isolator-CC-UDXA01.pdf">https://www.honeywellprocess.com/library/marketing/tech-specs/Digital-Input-Output-Isolator-CC-UDXA01.pdf</a></p>
-----------------	---

## 8.9.6 List of IO modules supported

	IO module	IOTA	IO type	Description
1	CC-PDIL01	CC-TDIL01, CC-TDIL11	DI-24	Low Voltage Digital Input (24 volts DC)
2	CC-PDIS01	CC-TDIL01, CC-TDIL11	DI-SOE	Low Voltage Digital Input (24 volts DC)
3	CC-PDOB01	CC-TDOB01, CC-TDOB11	DO-24B	Bussed Low Voltage Digital Output (24 volts DC)
4	CC-PDIL51	CC-TDIL51, CC-TDIL61	DI-24	Low Voltage Digital Input (24 volts DC)
5	CC-PUIO31	CC-TUIO31, CC-TUIO41	UIO-2	UIO-2

## 8.9.7 Fuse rating

Field side terminals of FTA assembly is provided with options for install M5 x 20mm glass fuse. In the case of Div2/zone2 installations instructions provided in HAZLOC manual to be followed. Exact current rating of the fuse may be decided based on the functional load current for a given IO.

## 8.9.8 Protection scheme

- Power supply terminals of the modules are provided with reverse polarity protection

- 
- Power rail is provided with inrush current control
  - Field side terminals are provided with short circuit protection and reverse polarity protection
  - Modules are provided with mistake proofing keys

## 8.10 Low Level Input Adapter (CC-ULLIO1)

This document provides technical information on the Low Level Input Adapter.

The CC-ULLIO1 is a universal low level signal conditioning module which acts as isolated barrier and used for intrinsic safety applications.

CC-ULLIO1 is high performance temperature adapter that supports measurement using thermocouples (TC), millivolts, potentiometers, or resistance temperature detectors (RTD) from a hazardous area and converts them to an isolated linearized analog output in the safe area.

This temperature Adapter is suitable for the majority of process applications including those for control and safety while delivering excellent performance at a lower operational cost. The module offers high accuracy and stability over a wide range of process and ambient temperatures.

The adapter is installed in a universal signal conditioning assembly (USCA01).

### 8.10.1 Function

CC-ULLIO1 is a single channel low level analog input module (also called as SCA TC/RTD Adapter) which measures the temperature of a process using TC and RTD Sensors and reports the measurements to the receiving IO Module. The module can be configured through Experion either as TC / mV input Or 2Wire /3Wire RTD / Ohms input and communicates over 4-20mA with Series C UIO2 module.

The CC-ULLIO1 is a loop powered device which source the power directly from the UIO2 input channel and transmits the data over same channel. The UIO2 module process this data and communicates with Experion which displays the actual process value. The process value can be displayed in units such as deg C, deg F, Kelvin and Percentage depending on the configuration.

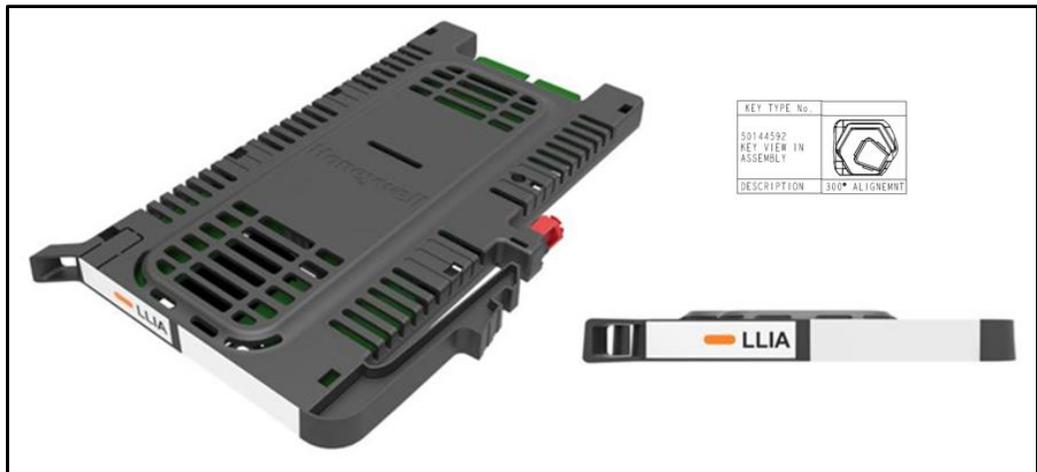
The CC-ULLIO1 also does cold junction compensation for temperature measurements with thermocouple sensor.

The adapter is installed in USCA slots which connects to DCS side through MTC cable.

CC-USCA01 is a back plane assembly which can accommodate 16 signals of CC-ULLIO1 modules. Field side terminals of each channel is provided with integrated fuse and knife disconnect function. DCS side interface is provided through a single mass termination cable (MTC) which connects all 16 channels. CC-USCA01 is DIN rail mountable.

## 8.10.2 Module Physical Specification

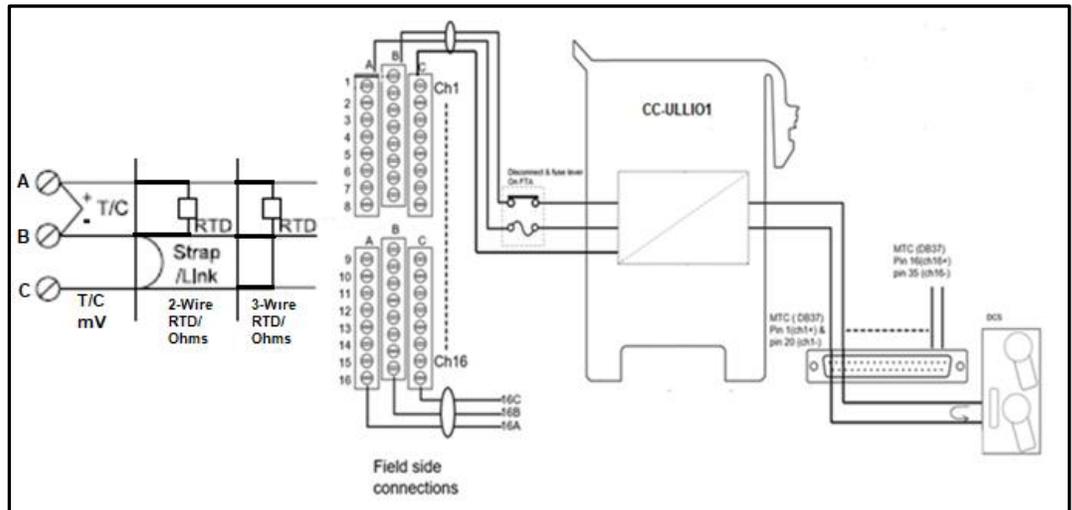
Parameter	Specification
Dimensions	141.5mm (L) x 85.75mm (W) x 10mm (H)
Assembly option	Backplane mount, screw less
Mistake proofing	mistake proofing keys provided



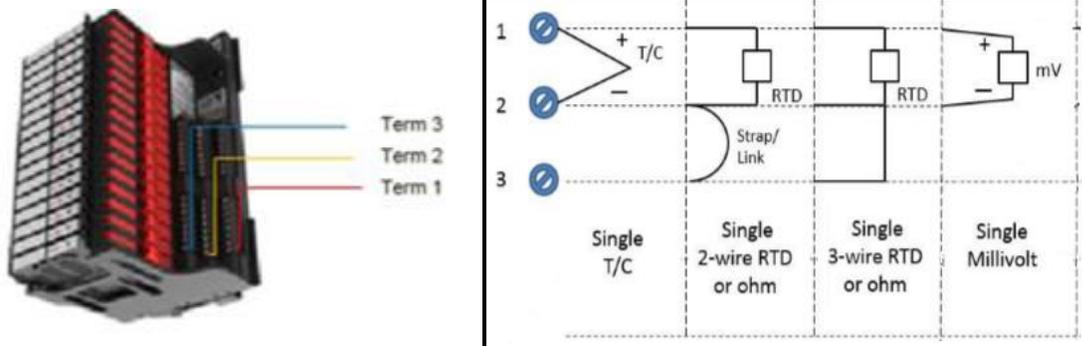
## 8.10.3 Features

- Single input temperature module configurable as Thermocouple Or RTD.
- Loop Powered
- Analog 4-20mA Output
- 1500 VDC Galvanic isolation between input and output
- Sensor Break Detection and comprehensive diagnostics.
- 500ms update rate.
- Loop accuracy  $\pm 0.025\%$  Span
- Improved measurement stability

## 8.10.4 Connections diagram



The field side wiring of CC-ULLIO1 channel on USCA for various input types can be connected as follows.



### Thermocouple, RTD Ohm and mV Connections

The mV/ TC uses two input terminals, whereas Ohms/RTD can be connected in 2Wire or 3Wire fashion as shown above. It is recommended to use the shielded twisted pair field wiring for improved noise performance.

## 8.10.5 Specifications

Parameter	Specifications
<b>Physical Specification</b>	
Dimensions	118 mm (D) x 85.5 mm (W) x 10.0mm (H)
Assembly option	Back plane mount, screw less
Mistake Proof	Mechanical Keys

Indicators	None
<b>Ambient Conditions</b>	
Ambient temperature (operation)	-40 degree C to + 70 degree C
Ambient temperature (storage/transport)	-40 degree C to + 85 degree C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Vibration	Non-Operational 1g 10Hz to 150Hz, Operational 0.5g 10Hz to 150Hz
Shock	5g operational, 15g Non-Operational
<b>Electrical Specifications</b>	
Sensor Inputs & Types	TC / Millivolts , 2W/3W RTD / Ohms
Sensor Types – TC	B, C ,E, J, K, N , R, S, T, L (ITS -90)
Sensor Types – RTD	Pt100, Pt200 ( $\alpha = 0.00385$ ) --- Per IEC751 Ni 120 ( $\alpha = 0.00672$ ) --- Edison Curve #7 Pt 50 ,Pt100 ( $\alpha = 0.00391$ ) --- GOST 6651-94 Cu50, Cu100 ( $\alpha = 0.00496$ ) --- GOST 6651-94 Cu50, Cu100 ( $\alpha = 0.00428$ ) --- GOST 6651-94
Millivolts Ranges	-7 to 22 mV , -20 to 125 mV
Ohms Range	0 to 500 Ohms , 0 to 2K Ohms
Galvanic isolation between DCS to Field	1500 VDC
Power	Loop Powered (4-20mA) ; 24V DC (+/- 10%)
Start Up Time	6 Secs
Update Time	500 mSec
Communication Protocol (LLIA - DCS)	Analog 4-20 mA
Damping Time Constant	<b>Default:</b> 0.3 seconds
Lightning Protection	<b>Impulse rating:</b> 8/20 uS 5000 A (>10 strikes) 10000 A (1 strike min.) 10/1000 uS 200 A (> 300 strikes)
Power Consumption	400 mW

<b>Performance Specifications</b>	
Cold Junction Accuracy	$\pm 1.0$ °C
Analog Output Accuracy (D/A)	$\pm 0.025$ % Span @ 25°C
Reference Accuracy @ 25 ° C	<b>RTD :</b> $\pm 0.65$ ° C <b>Thermocouple :</b> $\pm 0.1$ % to 0.15% Of Full Span (° C)

Ambient Temperature Effect	<b>Output D/A:</b> 0.0045 % of span/°C <b>Thermocouple :</b> 0.02°C /°C + 0.0045% of span/°C <b>RTD : (Pt100,Ni120,Pt50,Cu50,Cu100) and 500 Ohms :</b> 0.015°C /°C + 0.0045% of span/°C <b>Pt200 and 500 Ohms :</b> 0.030°C /°C + 0.045% of span/°C <b>Span :</b> Span of full scale range of RTD and TC
Output Failure Modes	Honeywell Standard <b>Normal Limits:</b> 3.8 – 20.8 mA <b>Failure Mode:</b> ≤ 3.6 mA and ≥ 21.5 mA
Sensor Lead Wire Resistance:	<b>RTD:</b> 25 ohms / line
Sensor Diagnostics	<ul style="list-style-type: none"> <li>- Sensor Input Open ( RTD / Ohms , TC / mV)</li> <li>- Sensor Input Short ( RTD Only)</li> <li>- Sensor Out Of Range</li> <li>- Electronic Module Failure</li> </ul>
Safety Compliance	SIL 2/3 Readiness
Stray Rejection	<b>Common Mode :</b> AC (50 or 60 Hz) : 120dB (with maximum source impedance of 100 Ohms) DC :120dB (with maximum source impedance of 100 Ohms) <b>Normal Mode :</b> AC (50 or 60 Hz): 60 dB (with 100% span peak-to-peak maximum)
<b>Configuration</b>	
Sensor Configuration / Diagnostics	From Experion System
Default Factory Configuration	K – Type TC
Measurement Units Supported	Deg C (default) , Deg F, Kelvin , Percentage
<b>Certifications and Compliance</b>	
Ingress protection	IP20 as per IEC 60529
Flammability rating	V0 as per UL 94
Conformance	ANSI/ISA 60079-0; 60079-15
EMC directive	IEC 61326-1 2012
Certification	IEC Ex, ATEX, cCSAus
Compliance	RoHS

## Input Types and Ranges

Input Types	Maximum Range Limits	Standards

<b>RTD ( 2 , 3 wire)</b>	<b>° C</b>	<b>° F</b>	
Pt100 ( $\alpha=0.00385$ )	-200 to 850	-328 to 1562	IEC751:1990
Pt200 ( $\alpha=0.00385$ )	-200 to 850	-328 to 1562	IEC751:1990
Ni 120 <sup>5</sup> ( $\alpha=0.00672$ )	-80 to 260	-112 to 500	Edison Curve #7
Pt50 <sup>5</sup> ( $\alpha=0.00391$ )	-200 to 600	-328 to 1112	GOST 6651-94
Pt100 <sup>5</sup> ( $\alpha=0.00391$ )	-200 to 600	-328 to 1112	GOST 6651-94
Cu 50 <sup>5</sup> ( $\alpha=0.00426$ )	-50 to 200	-58 to 392	GOST 6651-94
Cu 100 <sup>5</sup> ( $\alpha=0.00426$ )	-50 to 200	-58 to 392	GOST 6651-94
Cu 50 <sup>5</sup> ( $\alpha=0.00428$ )	-200 to 200	-328 to 392	GOST 6651-94
Cu 100 <sup>5</sup> ( $\alpha=0.00428$ )	-200 to 200	-328 to 392	GOST 6651-94
<b>Thermocouples</b>	<b>° C</b>	<b>° F</b>	
B	200 to 1820	392 to 3308	ANSI / ASTM E-230 (ITS-90)
C	0 to 2300	32 to 4172	ANSI / ASTM E-230 (ITS-90)
E	-200 to 1000	-328 to 1832	ANSI / ASTM E-230 (ITS-90)
J	-200 to 1200	-200 to 2192	ANSI / ASTM E-230 (ITS-90)
K	-200 to 1370	-328 to 2498	ANSI / ASTM E-230 (ITS-90)
N	-200 to 1300	-328 to 2372	ANSI / ASTM E-230 (ITS-90)
R	-50 to 1760	-58 to 3200	ANSI / ASTM E-230 (ITS-90)
S	-50 to 1760	-58 to 3200	ANSI / ASTM E-230 (ITS-90)
T	-250 to 400	-418 to 752	ANSI / ASTM E-230 (ITS-90)
L	-200 to 800	-328 to 1472	GOST R 8.585-2001

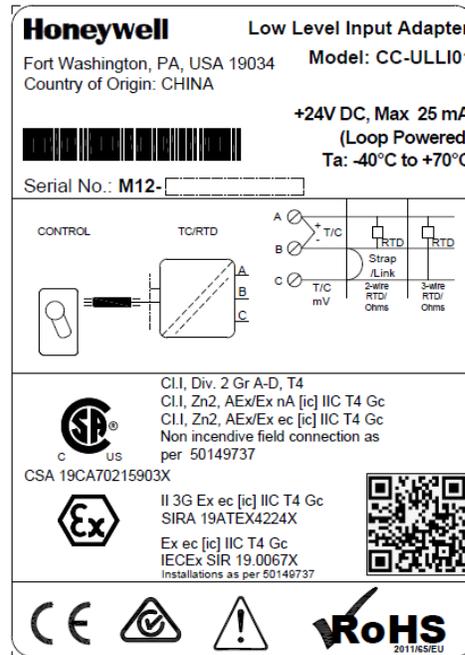
<b>Other Input Types</b>	<b>Maximum Range Limits</b>	<b>Reference Accuracy (+/-)</b>	<b>Standards</b>
Millivolts ( Range 1)	-7 to 22 mV	0.017 mV	--
Millivolts ( Range 2)	-20 to 125 mV	0.051 mV	--
Ohms ( Range 1)	0 to 500 Ohms	0.47 Ohms	--
Ohms ( Range 2)	0 to 2000 Ohms	0.71 Ohms	--

### Notes

1. Above performance specifications are specified at reference conditions of 25°C
2. For Thermocouple inputs, CJC accuracy shall be added to the reference accuracy to calculate the total digital accuracy.
3. The additional error due to temperature drift shall be taken into account for change in ambient from reference conditions .
4. Spec for ambient change : Reference Accuracy + Ambient Temp Effect.

- For better stability and accuracy of measurements, the CC-ULLI01 module needs stabilization time of 45 mins after Powerup.

### 8.10.6 Label



**NOTE** When the QR code is scanned, the following link will be opened.  
<https://www.honeywellprocess.com/library/marketing/tech-specs/Low-Level-Input-Adapter-CC-ULLI01.pdf>

### 8.10.7 List of IO modules supported

S.No	IO module	IOTA	IO type	Description
1	CC-PUIO31	CC-TUIO31, CC-TUIO41	UIO-2	Universal IO Module 2

### 8.10.8 Fuse rating

Field side terminals of FTA assembly is provided with options for install M5 x 20mm glass fuse. In the case of Div2/zone2 installations instructions provided in HAZLOC manual to be followed. Exact current rating of the fuse may be decided based on the functional load current for a given IO.

### 8.10.9 Protection scheme

- CC-ULLI01 module has inbuilt Surge protection for TC and RTD inputs.
- Modules are provided with mistake proofing keys

### 8.10.10 Conditions of use

1. TC/RTD modules found to perform with better stability and accuracy when installed alone with 1 slot gap between 3 SCA TC modules bunch in FTA.
2. CC-ULLIO1 TC module shall use first 8 slots of FTA from bottom side as it provides better stability for CJC.
3. The use of CC-ULLIO1 TC modules is restricted with AI/AO/DIO barrier modules.
4. CC-ULLIO1 TC Modules can be used with combination of DI/DO Relay and feedthrough provided a gap of 1 slot between SCA TC module and other modules (DIR/DOR/feedthrough) is maintained.
5. USCA installed with CC-ULLIO1 (TC /RTD) module shall be placed at the bottom side of the cabinet.
6. All 16 slots in FTA can be used with SCA TC modules provided the FTA is placed in horizontal position in the cabinet.
7. The recommended installation for this mix combination shall be as shown in the diagram –

#### USCA

	<b>MTC Connector</b>
<b>Top</b>	DOR\DIR\Feedthrough
	EMPTY
	LLIA Module
	LLIA Module
	LLIA Module
	EMPTY
	LLIA Module
	LLIA Module
<b>Bottom</b>	LLIA Module

## 9 Troubleshooting

### 9.1 CC-USCA0s1

Observations		Inputs for troubleshooting
1	Power indicator LED on back plane is OFF	<p>Indicates that 24V DC power is not reaching the back plane. Check is the power supply is active/operational and any fuse provided for this power rail (external to SCA) is blown.</p> <p>Also check for any loose connection of power cable to the 2-pin power terminal block on SCA backplane.</p>
2	One of the slots in back plane is configured wrongly by mistake-proofing key.	<p>Mistake proofing keys got 2 parts. One part goes into the specific slot in the back plane and the other part stays with the module. The part which goes into the back plane prevents a wrong module insertion. Revising a slot type can be done by pulling out the mistake proofing key from the back plane using a nose plier. Please refer to section 7.9 &amp; 7.10 for more details.</p>
3	Unable to remove the fuse from fuse lever of one of the field channels in FTA back plane assembly.	<p>Fuse levers are designed to physically remove from backplane (optionally) assembly by opening the lever and pulling it out. Refer to section 7.12 for more details. Fuse lever can be removed, and fuse can be replaced and inserted back to the same slot.</p>
4	Backplane assembly is sliding down in a vertical DIN rail assembly	<p>There are two captive screws (one at the top side and one at bottom side) on the base plate of backplane which engages the DIN rail to hold it steady in a vertical assembly. Check these screws and tighten it.</p>
5	Unable to open disconnect levers or fuse levers	<p>Operating sequence for fuse and disconnect levers and the tool details are provided in section 9.13 for more details. Please follow these operating instructions</p>
6	Backplane assembly is loose on DIN rail.	<p>Backplane housing is assembled on to the back-plane base by snaps. Check if these snaps are engaged.</p>
7	Unable to plug in module to a slot of back plane	<p>Check if the mistake proofing keys in the back plane in that slot preventing the module to slide in. two ways</p> <ul style="list-style-type: none"> <li>The slot is wrongly configured by mistake-proofing Key.</li> </ul>

		<ul style="list-style-type: none"> <li>Backplane slot is configured for a different type of SCA module.</li> </ul> <p>If wrongly configured the following steps can be followed. Mistake proofing keys got 2 parts. One part goes into the specific slot in the back plane and the other part stays with the module. The part which goes into the back plane prevents a wrong module insertion. Revising a slot type can be done by pulling out the mistake proofing key from the back plane using a nose plier.</p>
8	Blown fuse indication	Open the fuse lever on the FTA assembly and replace the fuse and close the lever. Refer to section 7.11 for more details.

## 9.2 CC-UDOR01

Observations		Inputs for trouble shooting
1	DCS side IO is activated activities but no coil side LED indication in DOR module	<ol style="list-style-type: none"> <li>Check MTC connection from DCS to SCA back plane. Remove and re-insert the module so that it sits in the backplane slot tightly.</li> <li>If MTC is ok and still LED indication not active, the module may be faulty. Replace the module.</li> </ol>
1	DO relay not functional.	<ol style="list-style-type: none"> <li>Activate the DO channel from DCS side and check LED indication (GREEN) on relay module is ON. If the LED is not turning ON check MTC connection from DCS to SCA back plane</li> <li>If MTC is ok and still LED indication not active, the module may be faulty and need to be replaced.</li> </ol>
2	DO relay indications are ON but output signal not reaching field device	<p>Check the field side fuse, replace the fuse if blown.</p> <p>If fuse is ok and still fault persist, check if the knife disconnect lever is closed properly</p> <p>Check wire connection to the terminal blocks</p> <p>Still if fault persist consider replacing the module</p>
3	LED is functional and indicating coil side activity of the relay. But field side device connected to the contact side is	<p>Few possibilities</p> <ol style="list-style-type: none"> <li>Field side cables are faulty (open wire or short wire). Check the field cables and confirm such faults are rectified</li> <li>Field side cables are ok, but the fuse provided on FTA for field side terminals is blown. If this is the case the</li> </ol>

	not operating accordingly.	<p>fuse blown LED will glow. Replacing fuse will rectify this issue.</p> <ol style="list-style-type: none"> <li>3. If options 1 and 2 are checked and rectified and still issue persists, check if the ticking sound of the relay can be heard. If no ticking heard it's possible that the module is faulty. It is recommended to replace the module in such cases.</li> <li>4. If all above options are not yielding results this module can be faulty. It is recommended to replace it.</li> <li>5. If all above options are not yielding positive results, there can be some fault with FTA. One option could be to shift the module to a new slot if that is possible. Else replace the FTA itself</li> <li>6. If none of the above steps are helping to resolve the issue, please check the health of field device itself.</li> </ol>
3	Output is going OFF when relay is switched ON (or vice versa)	Relay NO and NC connections to field might have interchanged.

### 9.3 CC-UDIR01

	Observations	Inputs for trouble shooting
1	DCS side DI channels are functional but the channel is not receiving DI signals from DIR module.	<ol style="list-style-type: none"> <li>1. Activate the DI channel from field side and check LED indication (GREEN) on relay module is ON. If the LED is not turning ON, then <ul style="list-style-type: none"> <li>— check field side connections</li> <li>— check if fuse blown indication is active, replace the fuse if required</li> <li>— check if the disconnect levers are closed properly</li> </ul> </li> <li>2. Check if MTC is ok</li> <li>3. Still if DI is not functional consider replacing DIR module</li> </ol>
1	DI relay not functional.	<ol style="list-style-type: none"> <li>1. Activate the DI channel from field side and check LED indication (GREEN) on relay module is ON. If the LED is not turning ON, then <ul style="list-style-type: none"> <li>— check field side connections</li> <li>— check if fuse is blown, replace the fuse if required</li> </ul> </li> </ol>

		<p>— check if the disconnect levers are closed properly</p> <ol style="list-style-type: none"> <li>2. Check if MTC is ok</li> <li>3. Still if DI is not functional consider replacing DIR module</li> </ol>
2	DI relay indications are ON but output signal not reaching DCS side IO module	<ol style="list-style-type: none"> <li>1. Check MTC cable connections.</li> <li>2. Check if the relay tick sound can be heard when activated from field side. This indicates that the relay is operational. In such cases check the MTC cable connectivity.</li> <li>3. If the relay is not ticking, recommendation is to replace DIR module.</li> <li>4. If all above troubleshooting options are not yielding positive results, recommendation would be to try a spare slot in FTA if possible. Else replace the FTA itself.</li> </ol>

## 9.4 CC-UPTA01

Observations		Inputs for trouble shooting
1	PTA not functional.	<ul style="list-style-type: none"> <li>• check field side connections</li> <li>• check if Fuse on Disconnect board is blown, replace the fuse if required</li> <li>• check if the disconnect levers are closed properly</li> <li>• Check if MTC is ok</li> <li>• Still if PTA is not functional consider replacing the module</li> <li>• If none of the above options are yielding positive results, consider using an alternate channel in same FTA if possible</li> <li>• Else replace the FTA itself.</li> </ul>

## 9.5 CC- UGAI01 & CC-UAIA01

Observations		Inputs for trouble shooting
1	UGAI / UAIA not functional	<ul style="list-style-type: none"> <li>• UGAI / UAIA needs power to work, check if 24V DC connection is made to FTA. Ensure power LED</li> </ul>

		<p>(Green) on FTA is ON. Else check the power connection &amp; power source to FTA.</p> <ul style="list-style-type: none"> <li>• Check if <b>UGAI / UAIA</b> module is plugged in properly. Check if the power LED on UGAI is ON. If not check the power connection &amp; power source to FTA.</li> <li>• check field side connections. Make sure the connections are made to the correct set of terminal blocks.</li> <li>• check if Fuse on Disconnect board is blown, replace the fuse if required</li> <li>• check if the disconnect levers are closed properly</li> <li>• Check if MTC is ok</li> <li>• Check if the DCS side modules types and configurations are accurate</li> <li>• Still if the module is not functional consider replacing the module</li> <li>• If none of the above options are yielding positive results, consider using an alternate channel in same FTA if possible</li> <li>• Else replace the FTA itself.</li> </ul>
	<p>UGAI / UAIA powered on , field side connections are fine but DCS side is showing NaN</p>	<ul style="list-style-type: none"> <li>• Check MTC cable and make sure cable is not faulty and the connector are plugged properly</li> <li>• Make sure the module is plugged in to the correct slot on FTA which is matching with the channel number configured in DCS</li> <li>• Make sure correct module type is used at DCS side and this module configuration in Experion is correct</li> <li>• If all above conditions are good and still open wire is reported by DCS, recommend checking this slot of FTA with a PTA module (remember, PTA works only for 2 wire source mode).</li> <li>• If DCS is recovering from NaN with PTA plugged in, then consider replacing <b>UGAI / UAIA</b> module.</li> <li>• <b>If DCS is not recovering from NaN when PTA is plugged in, then consider replacing FTA.</b></li> </ul>
	<p>UGAI / UAIA powered on, field side connections are fine</p>	<ul style="list-style-type: none"> <li>• Check field side connections are intact</li> <li>• Make sure fuse on FTA fuse lever is good</li> <li>• Make sure disconnect arm is closed properly</li> </ul>

	<p>but DCS side is showing open wire</p>	<ul style="list-style-type: none"> <li>• Make sure MTC cable is functionally good and the connectors are plugged properly</li> <li>• Check if the module power LED is ON</li>   <li>• If all above conditions are good and still open wire is reported by DCS, recommend to check this particular slot of FTA with a PTA module (remember, PTA works only for 2 wire source mode).</li>   <li>• If DCS is recovering from open wire alarm with PTA plugged in, then consider replacing UGAI / UAIA module.</li> <li>• If DCS is not recovering from open wire fault when PTA is plugged in, then consider replacing FTA.</li> </ul>
--	--	---

## 9.6 CC- UGAO01 & CC-UAOA01

Observations		Inputs for trouble shooting
1	<p>UGAO / UAOA not functional</p>	<ul style="list-style-type: none"> <li>• UGAO / UAOA needs power to work, check if 24V DC connection is made to FTA. Ensure power LED (Green) on FTA is ON. Else check the power connection &amp; power source to FTA.</li> <li>• Check if UGAO / UAOA module is plugged in properly. Check if the power LED on UGAO / UAOA is ON. If not check the power connection &amp; power source to FTA.</li> <li>• check field side connections. Make sure the connections are made to the correct set of terminal blocks.</li> <li>• check if Fuse on Disconnect board is blown, replace the fuse if required</li> <li>• check if the disconnect levers are closed properly</li> <li>• Check if MTC is ok</li> <li>• Check if the DCS side modules types and configurations are accurate</li> </ul> <p>Still if the module is not functional consider replacing the module</p> <p>If none of the above options are yielding positive results, consider using an alternate channel in same FTA if possible</p> <p>Else replace the FTA itself.</p>

	<p>UGAO / UAOA powered on, field side connections are fine but DCS side is showing NaN</p>	<ul style="list-style-type: none"> <li>• Check MTC cable and make sure cable is not faulty and the connector are plugged properly</li> <li>• Make sure the module is plugged in to the correct slot on FTA which is matching with the channel number configured in DCS</li> <li>• Make sure correct module type is used at DCS side and this module configuration in Experion is correct</li> </ul> <p>If all above conditions are good and still open wire is reported by DCS, recommend checking this slot of FTA with a PTA module (remember, PTA works only for 2 wire source mode).</p> <ul style="list-style-type: none"> <li>• If DCS is recovering from NaN with PTA plugged in, then consider replacing UGAI / UAIA module.</li> <li>• If DCS is not recovering from NaN when PTA is plugged in, then consider replacing FTA.</li> </ul>
	<p>UGAO / UAOA powered on, field side connections are fine but DCS side is showing open wire</p>	<ul style="list-style-type: none"> <li>• Check field side connections are intact</li> <li>• Make sure fuse on FTA fuse lever is good</li> <li>• Make sure disconnect arm is closed properly</li> <li>• Make sure MTC cable is functionally good and the connectors are plugged properly</li> <li>• Check if the module power LED is ON</li> </ul> <p>If all above conditions are good and still open wire is reported by DCS, recommend checking this slot of FTA with a PTA module (remember, PTA works only for 2 wire source mode).</p> <ul style="list-style-type: none"> <li>• If DCS is recovering from open wire alarm with PTA plugged in, then consider replacing UGAI / UAIA module.</li> <li>• If DCS is not recovering from open wire fault when PTA is plugged in, then consider replacing FTA.</li> </ul>

## 9.7 CC- UGDA01 and CC-UDXA01

#	Observations	Inputs for trouble shooting
1	<p>DI/DO Channel in DCS Always Shows Open Wire Fault</p>	<ol style="list-style-type: none"> <li>1. Power LED on the UGDA / UDXA module should be ON (GREEN). If LED is OFF, check the following. <ul style="list-style-type: none"> <li>• UGDA / UDXA requires 24V DC power to function, check if 24V DC connection is made to FTA. Ensure</li> </ul> </li> </ol>

		<p>power LED on FTA is ON(Green). If OFF, check the supply wiring to the power connector &amp; power source to FTA.</p> <ul style="list-style-type: none"> <li>• Check if <b>UGDA / UDXA</b> module is plugged in properly. Unplug the module and reinsert the module into the slot.</li> </ul> <p>2. Status LED on the <b>UGDA / UDXA</b> module should be ON (AMBER or RED). If LED is OFF, check the following.</p> <ul style="list-style-type: none"> <li>• Check field side connections. Make sure the connections are made to the correct set of terminal blocks.</li> <li>• Check if Fuse on Disconnect board is intact, replace the fuse if required</li> <li>• Check if the disconnect levers are closed properly</li> <li>• Check MTC cable and make sure cable is not faulty and the connector is plugged in properly</li> <li>• Make sure the <b>UGDA / UDXA</b> module is plugged in to the correct slot on FTA which is matching with the channel number configured in DCS</li> <li>• Make sure correct module type is used at DCS side and this module configuration in Experion is correct</li> </ul>
2	DO Field device does not turn ON even when Series UIO DO shows ON	<p>1. Status LED on the <b>UGDA / UDXA</b> module should be ON (AMBER) when load current &gt;2.1mA. If LED is RED or OFF, check the following.</p> <ul style="list-style-type: none"> <li>• Check field side connections. Make sure the connections are made to the correct set of terminal blocks.</li> <li>• Check if Fuse on Disconnect board is blown, replace the fuse if required</li> <li>• Check if the disconnect levers are closed properly</li> <li>• Check MTC cable and make sure cable is not faulty and the connector is plugged in properly.</li> <li>• Make sure the module is plugged in to the correct slot on FTA which is matching with the channel number configured in DCS.</li> </ul> <p>2. Check if the “Open Wire” configuration in Series C UIO DO is enabled. If yes,</p>

		<ul style="list-style-type: none"> <li>• Uncheck the “Open Wire” checkbox using Control Builder.</li> </ul> <p>3. Check the specification for the DO drive current of the DO field device. The DO channel of the <b>UGDA / UDXA</b> module is energy/current limited with a series resistor. Ensure that the field device is compatible with the DO load specifications as mentioned in the tech and spec document.</p>
3	DI channel status in DCS displays remains stuck at one state.	<p>1. Status LED on the <b>UGDA / UDXA</b> module should be ON (AMBER) for load current &gt;2.1mA and ON(RED) for load current &lt;1.2mA.</p> <ul style="list-style-type: none"> <li>• Check field side connections are intact</li> <li>• Make sure fuse on FTA fuse lever is good</li> <li>• Make sure disconnect arm is closed properly</li> <li>• Make sure MTC cable is functionally good and the connectors are plugged properly</li> </ul>

## 9.8 CC- ULLI01

<b>TROUBLESHOOTING OF SCA LLIA MODULE</b>			
<b>S. No</b>	<b>Conditions</b>	<b>Failure Identification</b>	<b>Corrective Action</b>
1	Sensor Input Failure	Check Alarms/Warnings from Experion	<p>1. If detail status indicate input fault (open, short...), correct the root error by checking the input connection to the SCA LLIA and sensor type configuration.</p> <p>2. Check Fuse on USCA .</p> <p>3. If problem persists even after verifying the input connection and sensor input type configuration, replace the LLIA module.</p>
2	Diagnostics Failure. A critical failure has been detected on the LLIA Electronics	Check Alarms from Experion	Power cycle the LLIA module and if problem persists replace the module.
3	Thermocouple measurement going out of spec	No Warning or Alarm	<p>1. Check for polarity of Thermocouple. Connections.</p> <p>2. Ensure conditions of use are followed for LLIA installation.</p> <p>3. Ensure Cabinet Fans are ON and running properly .</p> <p>4. Power cycle the LLIA module and if problem persists, replace the module.</p>
4	Unable to retain the configuration	Check Alarms/Warnings from Experion	Power cycle the LLIA module and if problem persists replace the module.
5	Module showing PV out of range or BAD PV always .	Check Alarms/Warnings from Experion	<p>1. Check for Sensor configuration and input connections.</p> <p>2. Power cycle the LLIA module and if problem persists replace the module.</p>

## 9.9 Field side cable faults

DIR and DOR modules have no capability for open wire detection or fault transparency .  
Field side open wire conditions shall be diagnosed by manually measuring voltage /

---

current at the field terminals or by checking the indicator LEDs. Details are provided in troubleshooting manual

## 10 Maintenance

### 10.1 Removal and installation under power

- PTA, DIR and DOR can be removed or inserted under power when installed in a safe area.
- When installed in a Div2/Zone2 environment removal or insertion under power shall be performed only when no hazardous gas, fumes or dust is present. Refer to HAZLOC manual for details.
- Removal or insertion of module shall be performed only after taking necessary precautions to avoid any possible electro static discharge to the SCA hardware.
- Some of the modules can be warm/hot while operational. Necessary precaution shall be taken to avoid any thermal hazard during removal of a working module.

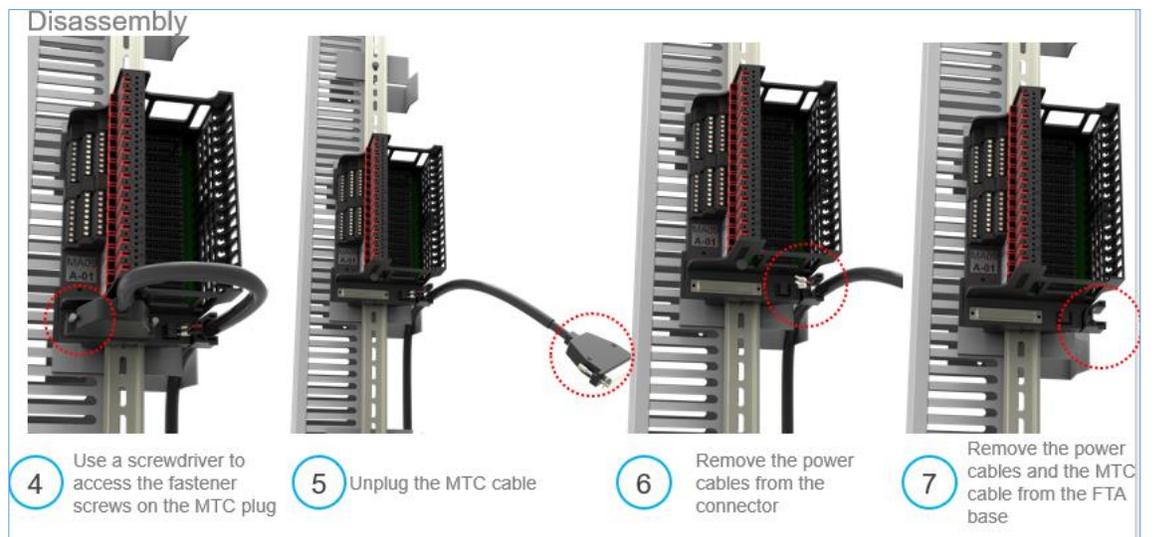
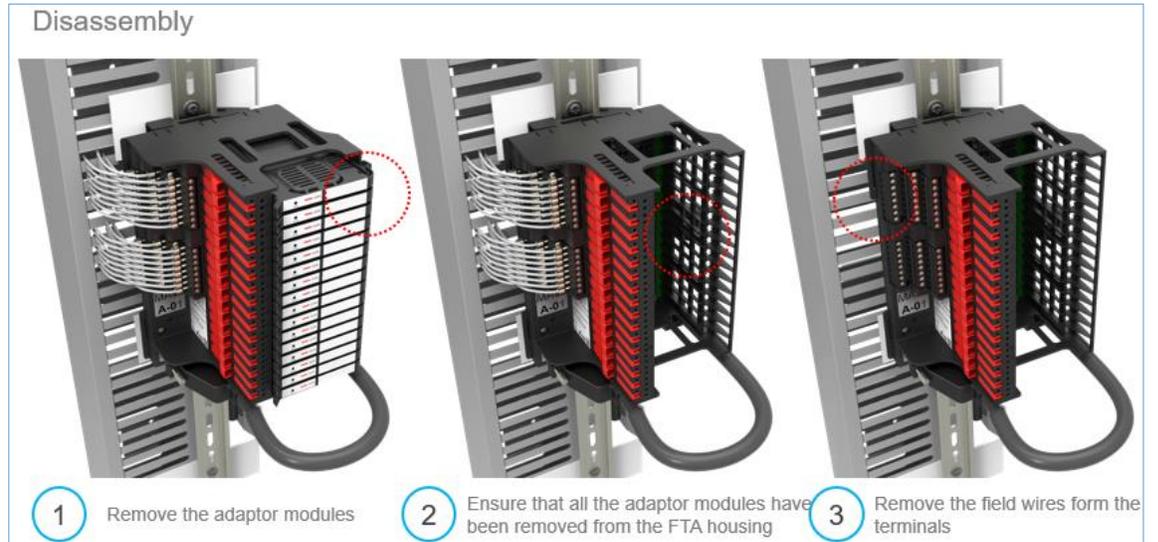
### 10.2 Spare parts list and description.

The following is the list of spare parts that are applicable to FTA, PTA, DIR & DOR hardware.

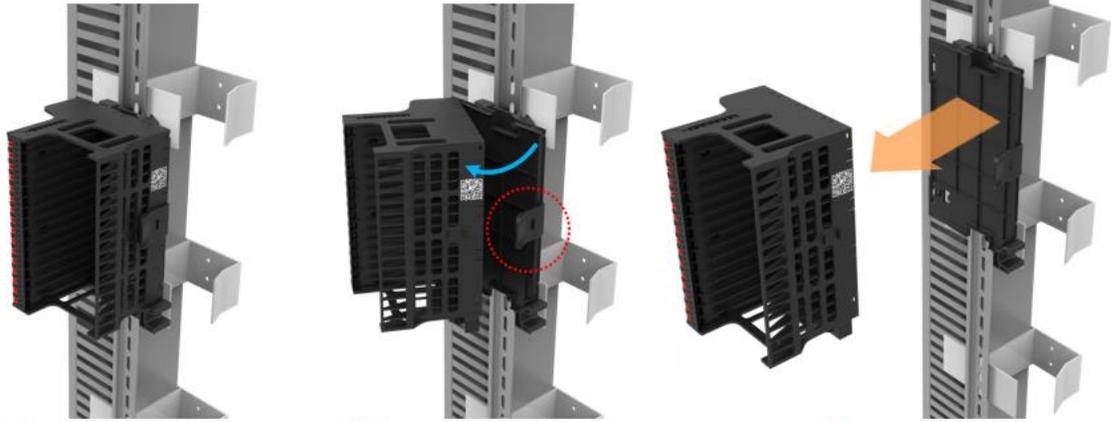
Sl No	Model number/HPN	Description
1	CC-UFPA01	Fuse protection arm on FTA assembly
2	CC-UBPL01	Back plate assembly for mounting FTA
3	CC-UDOR01	DO relay module
4	CC-UDIR01	DI relay module
5	CC-UPTA01	Pass through module
6	CC-USCA01	SCA Housing assembly
7	50144592	Mistake proofing key – male part
7	50144590	Mistake proofing key – female part
8	50150243	Dummy fuse

## 10.3 Disassembly

Disassembly sequence for SCA assembly is explained in the following diagrams.



### Disassembly

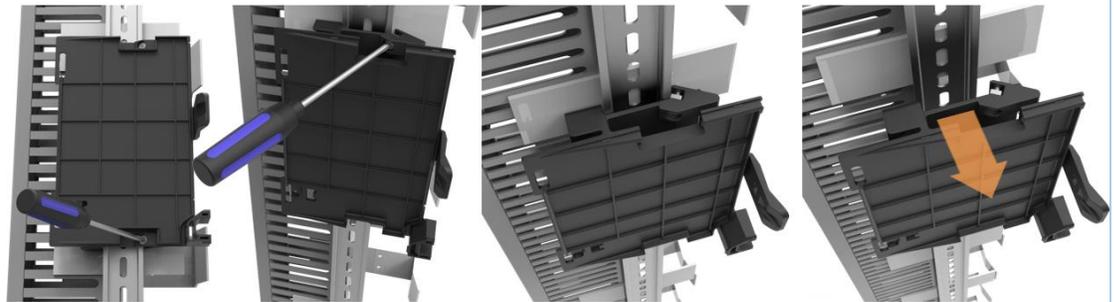


8 Ensure all cables are removed from the FTA Housing

9 Flex the latch to disengage the snaps with right hand while holding the FTA housing with the left

10 Remove the FTA housing from the FTA base

### Disassembly

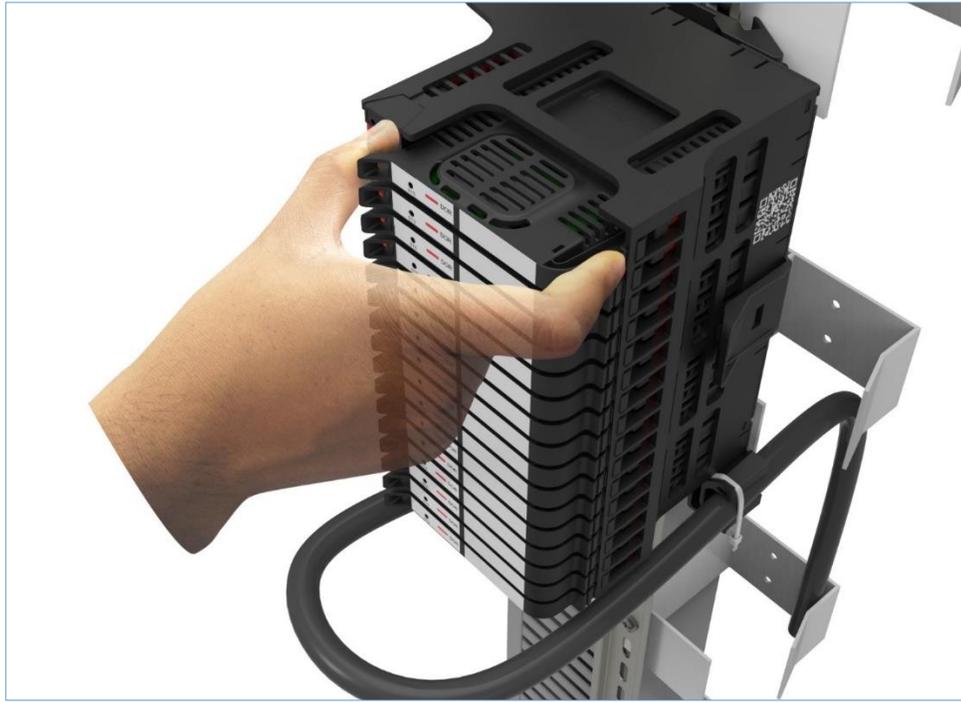


11 Loosen the bottom screw while holding the base

12 Loosen the top screw

13 Ensure the nuts are loose

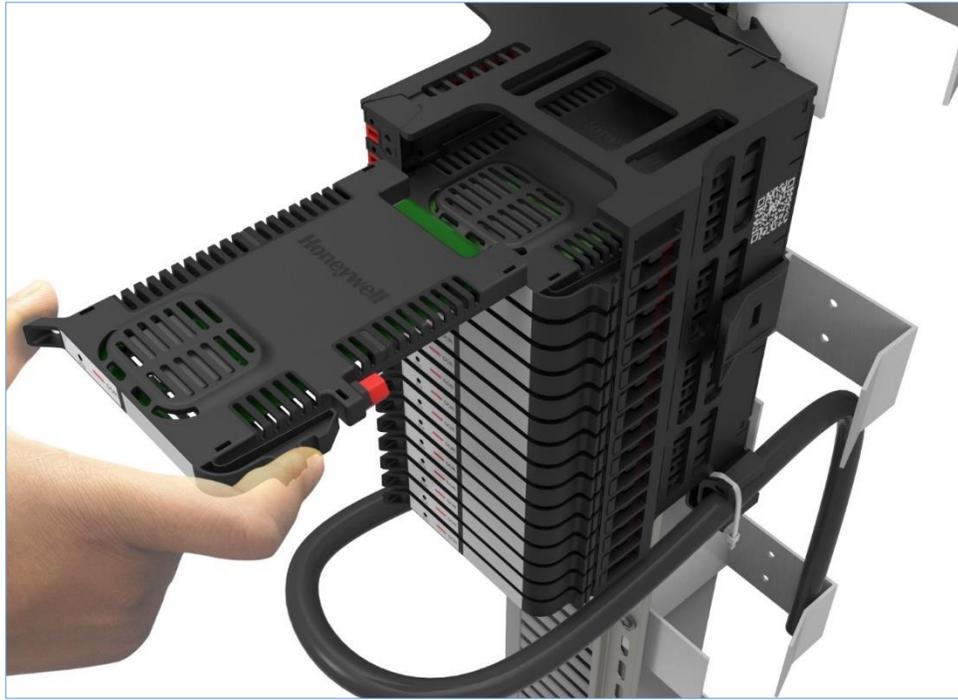
14 remove the FTA base from the DIN rail



Press the notch to the side of the module which locks to the FTA housing side wall. This will enable the user to pull out the module.



Gently pull out the module so that it disengages from the backplane connector and the FTA housing key.



After pull out the key of the module will come out along with the module and the corresponding FTA key will be retained in the housing.

---

## 11 Repair

The SCA Hardware cannot be repaired by the user . Repairs must be carried out by the manufacturer only.

---

## 12 Notices

### Trademarks

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

ControlEdge™ 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.

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, or at <http://www.honeywell.com/ps/thirdpartylicenses>.

### Documentation feedback

You can find the most up-to-date documents on the Honeywell Process Solutions support website at:

<http://www.honeywellprocess.com/support>

If you have comments about Honeywell Process Solutions documentation, send your feedback to: [hpsdocs@honeywell.com](mailto: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 your local Honeywell Process Solutions Customer Contact Center (CCC) or Honeywell Technical Assistance Center (TAC).

---

## 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://honeywell.com/pages/vulnerabilityreporting.aspx>

Submit the requested information to Honeywell using one of the following methods:

- Send an email to [security@honeywell.com](mailto:security@honeywell.com); or.
- Contact your local Honeywell Process Solutions Customer Contact Center (CCC) or Honeywell Technical Assistance Center (TAC).

## Support

For support, contact your local Honeywell Process Solutions Customer Contact Center (CCC). To find your local CCC visit the website, <https://www.honeywellprocess.com/en-US/contact-us/customer-support-contacts/Pages/default.aspx>.

## 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>.

## **Honeywell Process Solutions**

1250 W Sam Houston Pkwy S #150, Houston,  
TX 77042

Honeywell House, Skimped Hill Lane  
Bracknell, Berkshire, RG12 1EB

Building #1, 555 Huanke Road, Zhangjiang  
Hi-Tech Park,  
Pudong New Area, Shanghai, China 201203  
[www.honeywellprocess.com](http://www.honeywellprocess.com)

<<DocumentID>>  
December 2020  
© 2020 Honeywell International Sàrl

**Honeywell**