

**Compact FBM248, Current/Voltage Analog/Digital/Pulse I/O Configurable
Module, Redundant**



In many plant situations, the signal types associated with an installation are not well known until late in the project. The Compact FBM248 provides the capability to accept a range of standard analog, discrete, and pulse inputs that are user selectable and changeable at the discretion of the engineer over redundant channels. The HART® input signals are electrically compatible with the standard 4 to 20 mA inputs, and HART output signals are electrically compatible with the standard 20 mA outputs.

OVERVIEW

The Compact FBM248, Channel-Isolated Current/Voltage Analog/Digital/Pulse I/O Module (Redundant) contains eight redundant channels which can be individually configured for a range of analog, digital and pulse field I/O signals. It is part of the Compact 200 Series I/O subsystem described in *Compact 200 Series I/O Subsystem Overview* (PSS 31H-2COV).

A redundant pair of the modules combine to provide redundancy at the Fieldbus Module (FBM) level, with field I/O wired to one common termination assembly via a Redundant Adapter (RH101LN) as shown in Figure 1. In most configurations, each module independently attempts to hold the output(s) at its specified output value(s), and each independently reports its observed value of the inputs.

The Compact FBM248 pair validate each input and output.

Compact FBM248s in FBM Baseplate



Figure 1. Redundant Compact FBM248s Attached to a Redundant Adapter

Each I/O channel is galvanically isolated from other channels and ground.

Two types of passive termination assemblies are available for the FBM248:

- ▶ DIN rail mounted passive termination assembly (RH924WW), similar to those used with the other Compact 200 Series FBMs

- ▶ Baseplate-mounted Termination Assembly (TA) (RH101KA) - mounts onto the Redundant Adapter (RH101LN) on the Compact 200 Series baseplate. This TA provides field I/O wiring support for redundant Compact FBM248s as shown in Figure 2.

Compact FBM248s in FBM Baseplate



Figure 2. Redundant Compact FBM248s Attached to a Redundant Adapter and Baseplate-Mounted Termination Assembly

The Compact FBM248 can serve as a HART communications field device host, enabling the Foxboro Evo™ system to request and receive two digital messages per second from the field device. The message pass-through capability can be used to support HART universal, common practice, and device-specific commands, but not the burst communication mode. These commands are implemented using the PACTware (Process Automation Configuration Tool - refer to PSS 21S-8A5 B3 for details).

The Compact FBM248 must be used with Foxboro Evo Control Core Services software, v9.3 or later.

When installed in K-Series or equivalent system enclosures, the redundant Compact FBM248s enable the system enclosure to support up to 192 Compact FBMs and their associated Field Control Processor 280s (FCP280s) from a single enclosure's footprint. Refer to *G-Series Enclosures Overview* (PSS 31H-2GOV) or *K-Series Enclosures Overview* (PSS 31H-2KOV) or equivalent PSS for the list of modules supported in the system enclosures.

The Compact FBM248 is electrically compatible with standard HART signals.

FEATURES

Key features of the Compact FBM248 are:

- ▶ Eight redundant individual isolated channels to support:
 - HART Analog Input (AI)/Analog Output (AO) 4-20 mA
 - 0-20 mA AI/AO, non-HART
 - 0-10 V and 0-5 V AI, non-HART
 - Digital dry contact sense 24 V dc
 - Discrete voltage monitor, configurable 0 and 1 thresholds 0-10 V
 - NAMUR sensor discrete input - Signal level according to DIN EN 50227 (NAMUR):
 - "On" at 2.1 mA dc with short circuit detection at > 6 mA
 - "Off" at 1.2 mA dc with open detection at <0.25 mA
 - NAMUR dry contact sense 7.5 V dc, nominal/typical
 - Pulse count, frequency, acceleration and jerk, contact sense or voltage input
 - Discrete Output 24 V, 20 mA current or solid state switch output.
- ▶ Redundant modules increase reliability
- ▶ Rugged design suitable for enclosures in Class G3 (harsh) environments
- ▶ Executes programs for Discrete Input, Pulse Count, Sequence of Events and Transient Data Recording with support for Sustained and Momentary Digital Outputs
- ▶ Enables higher utilization of I/O points in each enclosure - fewer points on each FBM are likely to remain unused due to the versatility of the Compact FBM248's I/O points

- ▶ Passive Termination Assemblies (TAs) - DIN rail mounted - for locally or remotely connecting field wiring to the Compact FBM248
- ▶ Baseplate-mounted Termination Assembly (TA) attaches directly to a Redundant Adapter on the Compact 200 Series baseplate, which helps eliminate the need for mounting a separate TA on a DIN rail for redundant Compact FBM248s and space for the TA's cable in an enclosure.
- ▶ Enables sites to reduce the number of separate types of 200 Series FBMs maintained as spares, by replacing them with a single type of 200 Series FBM - the Compact FBM248, which supports a wide range of analog, digital and pulse field I/O applications.

HIGH ACCURACY

For high input accuracy, the module incorporates a 16-bit Sigma-Delta converter which can provide new analog input values for each channel every 100 milliseconds. For outputs, a 13-bit D/A is used.

HIGH RELIABILITY

The redundancy of the module pair, coupled with the high coverage of detected faults, provides a very high subsystem availability time.

COMPACT DESIGN

The Compact FBM248's design is narrower than the standard 200 Series FBMs. It has a rugged Acrylonitrile Butadiene Styrene (ABS) exterior for physical protection of the circuits. Enclosures specially designed for mounting the FBMs provide various levels of environmental protection, up to Class G3 harsh environments per ISA Standard S71.04.

VISUAL INDICATORS

Light-emitting diodes (LEDs) incorporated into the front of the modules provide visual indication of the module operational status, and communication activity of the input/output channels.

Their functionality varies depending on the type of I/O signal used on each channel:

- ▶ Red and green LEDs provide indication of the FBM operational status.
- ▶ Yellow LEDs indicate HART communication activity for each channel.
- ▶ Yellow LEDs are provided to indicate the On or Off state of the discrete input or output channels' pulse input activity, and to indicate the Master/Tracker status of each Compact FBM248 in the pair.

EASY REMOVAL/REPLACEMENT

The module mounts on a Compact 200 Series baseplate. Two screws on the FBM help to secure the module to the baseplate.

The module can be removed/replaced without removing field device termination cabling, power, or communication cabling. Refer to *Intelligent Marshalling Fieldbus Modules - FBM247 and FBM248* (B0700GU) before removing or replacing FBM248 modules.

SEQUENCE OF EVENTS

The Sequence of Events (SOE) software package (for use with I/A Series software v8.x and Control Core Services software v9.0 or later) is used for acquisition, storage, display, and reporting of events associated with discrete input points in a control system. SOE, using the optional GPS based time synchronization capability, supports data acquisition across control processors at intervals of up to one millisecond, depending on the signal source.

Refer to *Sequence of Events* (PSS 31S-2SOE) to learn more about this package, and to *Time Synchronization Equipment* (PSS 31H-4C2), for a description of the optional time synchronization capability.

FIELDBUS COMMUNICATION

A Control Processor interfaces to the redundant 2 Mbps module Fieldbus used by the FBMs. The redundant Compact FBM248s accept communication from either path (A or B) of the 2 Mbps Fieldbus. If one path becomes unavailable or is changed at the system level, the module continues communication over the active path.

MODULAR BASEPLATE MOUNTING

The module mounts on a Compact 200 Series 16-Slot horizontal baseplate, which accommodates up to sixteen 200 Series Compact Fieldbus Modules. The Compact baseplate is DIN rail mounted, and includes signal connectors for a redundant 2 Mbps HDLC module Fieldbus, redundant independent dc power, and termination cables.

Redundant modules need to be located in adjacent positions on the baseplate (positions 1 and 2, 3 and 4, 5 and 6, or 7 and 8). To achieve the redundancy, a redundant adapter module is placed on the two adjacent baseplate termination cable connectors to provide a single termination cable connection (see Figure 1). A single termination cable connects from the redundant adapter to the associated termination assembly (TA).

To system configurator applications and monitoring through SMON and System Manager, the redundant pair are displayed as a single module. The functional redundancy is provided by the Compact FBM248 pair, not the control blocks.

TERMINATION ASSEMBLIES

Field I/O signals connect to the FBM subsystem via a DIN rail mounted or baseplate-mounted TA.

The TAs used with the Compact FBM248 are described in “TERMINATION ASSEMBLIES AND CABLES” on page 10.

FUNCTIONAL SPECIFICATIONS

Supported Hart Instrument Types

HART instruments compliant to Version 5, 6, or 7 of the HART specifications may be used.

Input/Output Channels

Eight I/O channels, each individually configurable as:

- ▶ HART 4-20 mA analog input or analog output
- ▶ (non-HART) 0-20 mA analog input or analog output
- ▶ (non-HART) 0-10 V and 0-5V analog input
- ▶ Digital dry contact sense 24 V dc
- ▶ NAMUR⁽¹⁾ sensor discrete input -
Signal level according to DIN EN 50227 (NAMUR)
 - "On" at 2.1 mA dc with short circuit detection at > 6 mA
 - "Off" at 1.2 mA dc with open detection at <0.25 mA
- ▶ Digital voltage input, configurable 0 and 1 thresholds 0-10 V
- ▶ Pulse count, frequency, acceleration or jerk, contact sense or voltage input
- ▶ Digital output 24 V, 20 mA current or switch

Discrete inputs have configurable current or voltage thresholds when not in SOE mode.

Channel types are independently configurable without taking the module or other channels offline.

Each channel is isolated and independent.

NOTE

Redundant pairs (input or output) are connected together by a common field I/O connector and therefore are not isolated from each other.

Input/Output Channels Specifications

INPUT RANGES

Voltage

-0.25 to 10 V dc or -0.12 to 5 V dc
(0.0 V = 1600 raw counts)

Current

0 to 20 mA dc

Pulse Count

0 to 65535 with rollover to zero

Frequency

10 Hz to 25000 Hz.

INPUT OVER-RANGE CAPABILITY

Voltage

10.2 V dc or 5.1 V dc (65,248 counts), 30 V without damage

Current

20.4 mA dc (65,280 counts), 36 mA without damage

DIGITAL SOE OR PULSE ON LEVEL

Voltage

6 V dc min, 30 V dc max.

Current

2.1 mA dc min, 10 mA dc max. NAMUR compatible

DIGITAL SOE OR PULSE OFF LEVEL

Voltage

0 V dc min, 1.8 V dc max.

Current

0 mA dc min, 1.2 mA dc max. NAMUR compatible

MINIMUM PULSE ON TIME

16 microseconds

MINIMUM PULSE OFF TIME

16 microseconds

MINIMUM PULSE PERIOD

40 microseconds

(1) For intrinsically safe installations, an external barrier is required.

FUNCTIONAL SPECIFICATIONS (CONTINUED)

Input/Output Channels Specifications (Cont.)

INPUT ACCURACY

Analog Input

0.075% of span

Temperature Coefficient

50 PPM/Deg C

Pulse Rate

0.05% of reading

ANALOG INPUT RESOLUTION

16 bits

PULSE COUNT RESOLUTION

Pulse Count

16 bits (integer)

Frequency

32 bits (integer)

INPUT UPDATE RATE

Analog

25 milliseconds, 10 milliseconds in TDR mode

Pulse count and frequency

10 or 25 milliseconds depending upon integration time setting

Digital SOE update rate

1 millisecond

ANALOG AND PULSE INPUT INTEGRATION TIME

100, 200, 500, and 1000 milliseconds, software configurable on a per FBM basis

FASTEST ALLOWED ECB BLOCK PERIOD

100 msec

INPUT SIGNAL A/D CONVERSION

Each channel performs A/D signal conversion using an independent Sigma-Delta converter

INPUT CHANNEL IMPEDANCE

Voltage Input

300K Ohm nominal

Current Input

With External Loop Supply

300 Ohm nominal

With Internal Loop Supply

250 Ohm nominal

INPUT CURRENT LIMIT

32 mA nominal

MAXIMUM OUTPUT CURRENT

20.4 mA

MAXIMUM OUTPUT LOAD IN OUTPUT MODE WHEN FBM PROVIDES POWER

750 Ohms when using FBM power

ANALOG OUTPUT ACCURACY

0.075% of span (0.1 to 20 mA)

Temperature Coefficient

50 PPM/Deg C

ANALOG OUTPUT RESOLUTION

13 bits

ANALOG OUTPUT NON-LINEARITY

Non-linearity is included in the accuracy specification.

ANALOG OUTPUT PROCESSING DELAY

Up to 30 milliseconds

FIELD DEVICE CABLING DISTANCE

For current I/O Channels, maximum distance of the field device from the FBM is a function of compliance voltage (19 V dc @ 20.4 mA input), wire gauge, and voltage required at the field device.

LOOP POWER SUPPLY PROTECTION

Loop power is channel-to-channel galvanically isolated and current limited.

NOTE

For an external loop power supply used with a Compact FBM248, either a separate power supply or one in the instrument, verify that the maximum voltage does not exceed 24.0 Volts.

HART® PROTOCOL COMPATIBILITY

The channels meet the impedance requirements for a HART high Impedance Device and can be used in a HART loop without interfering with the HART signals between the field device and a Hand-Held Communicator (HHC).

FUNCTIONAL SPECIFICATIONS (CONTINUED)

Input/Output Channel Isolation

Each channel is galvanically isolated from all other channels and ground. The module withstands, without damage, a potential of 600 V ac applied for one minute between any channel and ground, or

between a given channel and any other channel. Refer to “CAUTION” on page 8.

 **CAUTION**

HAZARD OF ELECTRIC SHOCK

These channels are not intended for permanent connection to voltages of 600V or above. Exceeding the limits for input voltages, as stated elsewhere in this specification, violates electrical safety codes and may expose users to electric shock.

Failure to follow these instructions can result in injury.

Communication

Communicates with its associated FCP280 via the redundant 2 Mbps module Fieldbus.

Power Requirements

INPUT VOLTAGE RANGE (SINGLE OR REDUNDANT)

24 V dc +5%, -10%

CONSUMPTION

Up to 10 W total for module in Single mode
Up to 16 W total for redundant pair

HEAT DISSIPATION

Up to 9.5 W total for module in Single mode
Up to 15.3 W total for redundant pair

Calibration Requirements

Calibration of the module and termination assembly is not required.

Regulatory Compliance

ELECTROMAGNETIC COMPATIBILITY (EMC)

European EMC Directive 2014/30/EU
Meets EN61326:2013 Class A Emissions and Industrial Immunity Levels

ROHS COMPLIANCE

Complies with European RoHS Directive 2011/65/EU.

Regulatory Compliance (Continued)

PRODUCT SAFETY

Underwriters Laboratories (UL) for U.S. and Canada

Module can be used in UL/UL-C listed Division 2 enclosure based systems. The Fieldbus modules are UL listed as Class I, Division 2, Groups A-D and G; Division 2 hazardous locations when connected as specified in the *Standard and Compact 200 Series Subsystem User's Guide* (B0400FA). I/O circuits also meet the requirements for Class 2 as defined in Article 725 of the National Electrical Code (NFPA) and Section 16 of the Canadian Electrical Code (CSA C22.1). Class 2 compliance applies only when field circuits are module powered.

NOTE

The UL/UL-C listing requires that the 24 V dc power source for the module is from an Foxboro® power supply that is UL/UL-C recognized (to UL 60950) as having a Safety Extra Low Voltage (SELV) output.

FUNCTIONAL SPECIFICATIONS (CONTINUED)

*European Low Voltage Directive
2014/35/EU and Explosive Atmospheres
(ATEX) directive 2014/34/EU*

Module can be used in certified Zone 2 enclosure based systems. The modules (Without Safety Barriers) are DEMKO certified as “Ex nA IIC T4 Gc”, for use in Zone 2, Group IIC, potentially explosive atmospheres when connected as described in the *Standard and Compact 200 Series Subsystem User’s Guide* (B0400FA).

Calibration Requirements

Calibration of the module and termination assembly is not required.

ENVIRONMENTAL SPECIFICATIONS

Operating Conditions

TEMPERATURE

Module

-20 to +60°C (-4 to +140°F)

Termination Assembly

Polyamide (PA)

-20 to +70°C (-4 to +158°F)

Polycarbonate/Acrylonitrile Butadiene

Styrene (PC/ABS)

-20 to +70°C (-4 to +158°F)

RELATIVE HUMIDITY

5 to 95% (noncondensing)

ALTITUDE

-300 to +3000 m (-1000 to +10 000 ft)

Storage Conditions

TEMPERATURE

-40 to +85°C (-40 to +185°F)

RELATIVE HUMIDITY

5 to 95% (noncondensing)

ALTITUDE

-300 to +12 000 m (-1000 to +40 000 ft)

Contamination

Suitable for use in Class G3 (Harsh) environments as defined in ISA Standard S71.04, based on exposure testing according to EIA Standard 364-65, Class III.

Vibration

7.5 m/s² (5 to 500 Hz)

PHYSICAL SPECIFICATIONS

Mounting

MODULE

The Compact FBM248 mounts on a Compact 200 Series 16-slot horizontal baseplate. The baseplate can be mounted on a horizontal DIN rail, or horizontally on a 19-inch rack using a mounting kit.

Refer to *Compact 200 Series 16-Slot Horizontal Baseplate* (PSS 31H-2C200) for details.

TERMINATION ASSEMBLY

The DIN rail mounted TA (RH924WW) mounts on a DIN rail and accommodates multiple DIN rail styles including 32 mm (1.26 in) and 35 mm (1.38 in). It connects to the redundant adapter associated with the Compact FBM248s.

The baseplate-mounted TA (RH101KA) mounts on the redundant adapter associated with the

Compact FBM248s on a Compact 200 Series baseplate.

PHYSICAL SPECIFICATIONS (CONTINUED)

Weight

MODULE

373 g (12 oz) approximate

TERMINATION ASSEMBLIES

DIN Rail Mounted TA

170 g (0.37 lb, approximate)

Baseplate-Mounted TA

100 g (0.22 lb, approximate)

Dimensions - Module

HEIGHT

130 mm (5.12 in)

WIDTH

25 mm (0.98 in)

DEPTH

150 mm (5.9 in) - Including baseplate connectors, 139 mm (5.46 in)

Dimensions - Termination Assemblies

DIN RAIL MOUNTED TA (RH924WW)

79 x 77 x 128 mm (3.13 x 3.04 x 5.03 in)

See page 14.

BASEPLATE-MOUNTED TA (RH101KA)

75 x 25 x 63.1 mm (2.95 x .98 x 2.48 in)

See page 14.

Part Numbers

COMPACT FBM248 MODULE

RH101LJ

TERMINATION ASSEMBLIES

See "FUNCTIONAL SPECIFICATIONS – TERMINATION ASSEMBLIES" on page 11.

REDUNDANT ADAPTER

RH101LN

Termination Cables

CABLE LENGTHS

Up to 30 m (98 ft)

CABLE MATERIALS

Polyurethane or Low Smoke Zero Halogen (LSZH)

TERMINATION CABLE TYPE

Type 1 – See Table 2 on page 13.

CABLE CONNECTION – TA TO BASEPLATE

FBM Baseplate End

37-pin D-subminiature

Termination Assembly End

25-pin D-subminiature

Field Termination Connections

DIN RAIL TA COMPRESSION-TYPE ACCEPTED WIRING SIZES

Solid/Stranded/AWG

0.2 to 4 mm²/0.2 to 2.5 mm²/24 to 12 AWG

Stranded with Ferrules

0.2 to 2.5 mm² with or without plastic collar

BASEPLATE MOUNTED TA COMPRESSION - ACCEPTED WIRING SIZES

Solid/Stranded/AWG

0.2 to 1.5 mm²/0.2 to 1.5 mm²/24 to 16 AWG

Stranded with Ferrules

0.25 to 0.75 mm² with plastic collar

0.25 to 1.5mm² without plastic collar

TERMINATION ASSEMBLIES AND CABLES

Field I/O signals connect to the FBM subsystem via DIN rail mounted termination assemblies (TAs).

For redundant Compact FBM248 configurations, a redundant adapter (RH101LN) is needed for connection between the FBM baseplate and the termination cable.

The DIN rail mounted TAs for the Compact FBM248 are available in Polyamide (PA) material with compression screw terminations.

See "FUNCTIONAL SPECIFICATIONS – TERMINATION ASSEMBLIES" for the TAs used with the Compact FBM248.

The Compact FBM248 provides sufficient loop resistance to allow use of the HART Hand-Held Terminal, or *PC20 Intelligent Field Device Configurator* (PSS 2A-1Z3 E).

A removable termination cable connects the DIN rail mounted TA to the FBM via a field connector on the baseplate in which the FBM is installed. Termination cables are available in these materials:

- ▶ Polyurethane
- ▶ Low Smoke Zero Halogen (LSZH).

Termination cables are available in a variety of lengths, up to 30 meters (98 feet), allowing the Termination Assembly to be mounted in either the enclosure or in an adjacent enclosure.

See Table 2 for a list of termination cables used with the DIN rail mounted TAs for the Compact FBM248.

FUNCTIONAL SPECIFICATIONS – TERMINATION ASSEMBLIES

FBM Type	Input/Output Signal	TA Part Number		Termination	TA Cable	TA Certification
		PA ^(a)	PC/ABS ^(b)	Type ^(c)	Type ^(d)	Type ^(e)
Compact FBM248	8 configurable I/O channels, voltage or current, analog or digital. Analog 4 to 20 mA I/O may also have the HART signal superimposed.	RH924WW		C	1	1, 2
Compact FBM248	8 configurable I/O channels, voltage or current, analog or digital. Analog 4 to 20 mA I/O may also have the HART signal superimposed.		RH101KA	Spring Cage (SC) (Baseplate mounted)	n/a	1, 2

(a) PA is Polyamide rated from -20 to +70°C (-4 to +158°F).

(b) PC/ABS is Polycarbonate/Acrylonitrile Butadiene Styrene (PC/ABS) rated from -20 to +70°C (-4 to +158°F).

(c) C = TA with compression terminals.

(d) See Table 2 for cable part numbers and specifications.

(e) See Table 1 for Termination Assembly certification definitions.

Table 1. Certification for Termination Assemblies

Type	Certification ^(a)
Type 1	TAs are UL/UL-C listed as suitable for use in Class I; Groups A-D; Division 2 temperature code T4 hazardous locations. They are DEMKO certified Ex nA IIC T4 Gc for use in Zone 2 potentially explosive atmospheres.
Type 2	TAs are UL/UL-C listed for supplying field circuits Class I; Groups A-D; Division 2 hazardous locations when connected to specified 200 Series FBMs and field circuits as specified in <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA). They are also DEMKO certified for supplying field circuits for Group IIC, Zone 2 potentially explosive atmospheres. Field circuits are also Class 2 limited energy (60 V dc, 30 V ac, 100 VA or less) if customer-supplied equipment meets Class 2 limits.

- (a) All TAs are UL/UL-C listed to comply with applicable ordinary location safety standards for fire and shock hazards. Hazardous location types comply with ATEX directive for II 3 G use. They also comply with the requirements of the European Low Voltage Directive. All listings/certifications need installation and use within the constraints specified in *Standard and Compact 200 Series Subsystem User's Guide* (B0400FA) and the conditions stated in UL and DEMKO reports.

Table 2. Cables Types and Part Numbers

Cable Length m (ft)	Type 1 P/PVC (a)	Type 1 LSZH (b)
0.5 (1.6)	RH100BY	RH100BC
1.0 (3.2)	RH100BZ	RH100BD
1.4 (4.9)	RH100EP	RH100EL
2.0 (6.6)	RH100CA	RH100BE
3.0 (9.8)	RH100CB	RH100BF
5.0 (16.4)	RH100CC	RH100BG
10.0 (32.8)	RH100CD	RH100BH
15.0 (49.2)	RH100CE	RH100BJ
20.0 (65.6)	RH100CF	RH100BK
25.0 (82.0)	RH100CG	RH100BL
30.0 (98.4)	RH100CH	RH100BM

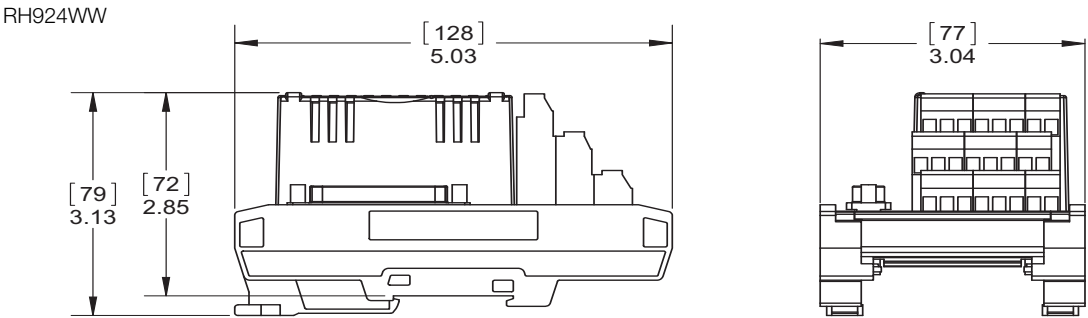
(a) P/PVC is polyurethane outer jacket and semi-rigid PVC primary conductor insulation. Temperature range: -20 to +70°C (-4 to +158°F).

(b) Low smoke zero halogen or low smoke free of halogen (LSZH) is a material classification used for cable jacketing. LSZH is composed of thermoplastic or thermoset compounds that emit limited smoke and no halogen when exposed to high sources of heat. Temperature range: -40 to +105°C (-40 to +221°F).

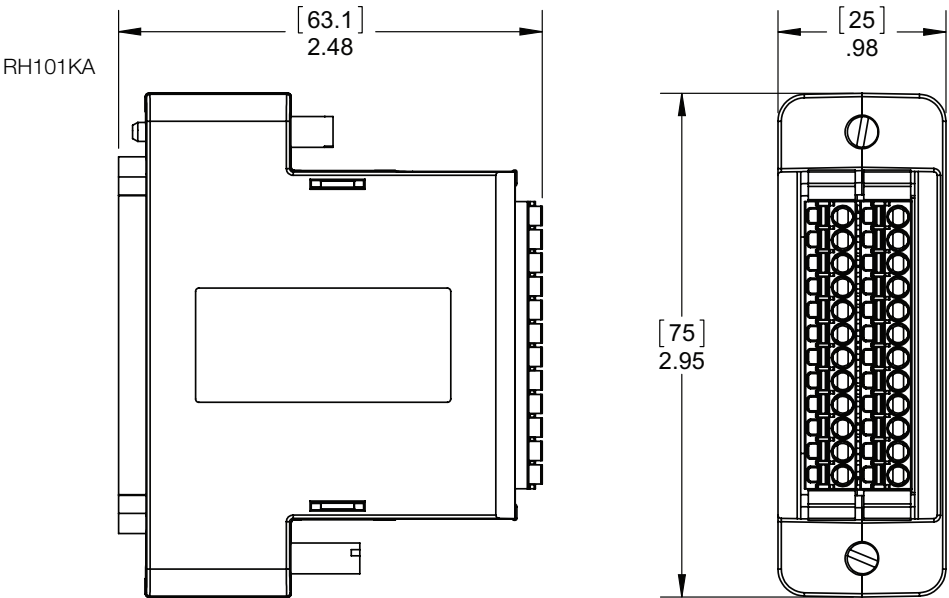
DIMENSIONS-NOMINAL

[mm]
in

DIN Rail Mounted Termination Assembly



Baseplate-Mounted Termination Assembly



RELATED PRODUCT SPECIFICATION SHEETS

PSS Number	Description
PSS 31H-2COV	Compact 200 Series I/O Subsystem Overview
PSS 31H-2CERTS	Standard and Compact 200 Series I/O - Agency Certifications
PSS 31H-2C200	Compact 200 Series 16-Slot Horizontal Baseplate
PSS 31H-2GOV	G-Series Enclosures Overview
PSS 31H-2KOV	K-Series Enclosures Overview
PSS 31H-4C2	Time Synchronization Equipment
PSS 31S-2SOE	Sequence of Events
PSS 31S-2TDRA	Transient Data Recorder and Analyzer
PSS 31S-3FCPICS	Field Control Processor 280 (FCP280) Integrated Control Software



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