Foxboro™ DCS

Compact FBM239, Digital 16DI/16DO Module

PSS 41H-2C239

Product Specification

August 2019

Legal Information

Overview

The Compact FBM239 contains 16 discrete input and 16 discrete output channels that are compatible with voltages and currents commonly found in industrial plants. An external power supply is used to energize the field circuits.

The Compact FBM239 Discrete 16DI/16DO Module provides 16 digital inputs with sixteen digital output channels. Associated Termination Assemblies (TAs) provide for discrete nominal inputs of 30 V dc, 60 V dc, 120 V ac/125 V dc or 240 V ac and nominal outputs of 60 V dc, 120 V ac/125 V dc or 240 V ac. The module performs signal conversion required to interface the electrical input signals from the field sensors to the Module Fieldbus.

Depending on the type of I/O signal required, the TAs support current limiting devices, high voltage attenuation circuits, optical isolation and external power source connections.

Features

- 16 digital input channels, used for either contact sensing, or dc voltage monitoring
- 16 digital output channels, used for either dc output switching with an external source (for example, to control powering of various external loads), or dc output switching with an internal source only (for example, to power external solid state relays or other similar devices)
- Compact, rugged design suitable for enclosure in Class G3 (harsh) environments
- Supports discrete input signals at voltages of:
  - 30 Vdc/60 Vdc
  - 120 V ac/125 V dc
  - 240 V ac
- Supports output switching at voltages of:
  - 60 V dc
  - 120 V ac/125 V dc
  - 240 V ac
- Executes the programs for Digital I/O (ECB5), and Ladder Logic (ECB8)
- Various Termination Assemblies (TAs) provide for per-channel isolation and contain:
  - High voltage attenuation and optical isolation for inputs
  - External power connection for device excitation
  - Output current limiting

Compact Design

The Compact FBM239's design is narrower than the standard 200 Series Fieldbus Modules (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 harsh environments, per ISA Standard S71.04.

Visual Indicators

Light-emitting diodes (LEDs) incorporated into the front of the module provide visual indication of the FBM operational status, as well as the discrete states of the individual input/output points.

Easy Removal/Replacement

The modules mount on a Compact 200 Series baseplate. Two screws on the FBM fix each module to the baseplate.

The module can be removed/replaced without removing field device termination cabling, power, or communication cabling.

Fieldbus Communication

A Fieldbus Communications Module or a Control Processor interfaces to the 2 Mbps module Fieldbus used by the FBMs. The Compact FBM239 accepts communication from either path (A or B) of the 2 Mbps Fieldbus. If one path is unsuccessful or is switched at the system level, the module continues communication over the active path

Field I/O Signals

Field I/O signals connect to the FBM subsystem via DIN rail mounted TA. The TAs used with the FBM239 are described in *Termination Assemblies And Cables, page 10*.

Functional Specifications

Input/Output Channels	16 group isolated digital input channels and 16 group isolated digital output channels
Filter/Debounce Time	Configurable (No Filtering, 4, 8, 16, or 32 ms)
Voltage Monitor (Compact FBM239 with feed through TA RH924VJ)	• Input: 30 V dc maximum applied voltage • On-State Voltage: 15 to 30 V dc • Off-State Voltage: 0 to 5 V dc • Current Input for On-State: 2.3 mA maximum at 30 V dc • Source Resistance Limits: ◦ On-State: 1 kΩ (maximum) at 15 V dc ◦ Off-State: 100 kΩ (minimum) at 30 V dc
Contact Sense (Compact FBM239 with feed through TA RH924VM)	• Contact Supply: 24 V dc nominal (supplied by FBM through the TA) • Contact Current: 1.8 mA dc nominal • Source Resistance Limits: ◦ On-State: 1 kΩ (maximum) at 15 V dc ◦ Off-State: 100 kΩ (minimum) at 30 V dc
Output (Compact FBM239 with feed through TAs RH924VJ or RH924VM)	• Applied Voltage (External): 60 V dc (maximum) • Load Current: 0.24 A dc maximum per channel 2.0 A dc maximum per TA • Inductive Loads: Outputs may require a protective diode or MOV connected across the load

Isolation	Input and output channels are group isolated from each other and earth (ground). For details, refer to the *Standard and Compact 200 Series Subsystem User's Guide* (B0400FA). The module/TA withstands, without damage, a potential of 600 V ac applied for one minute between the group isolated channels or between either set of group isolated channels and ground. **⚠⚠DANGER** **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH** This does not imply that these channels are intended for permanent connection to voltages of these levels. 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 will result in death or serious injury.**
Communication	Communicates with its associated FCM or FCP via the module Fieldbus
Power Requirements	• Input Voltage Range: 24 V dc +5%, -10% • Module Consumption: 2.65 W (maximum) at 24 V dc • Module Heat Dissipation (including contribution from field power supply): 5.3 W (maximum) at 2 A total load and all inputs at 30 V dc
Calibration Requirements	Calibration of the module is not required.
Regulatory Compliance: Electromagnetic Compatibility (EMC)	• *European EMC Directive 2014/30/EU*: Meets: EN61326-1:2013 Class A Emissions and Industrial Immunity Levels
Regulatory Compliance: Product Safety	• *Underwriters Laboratories (UL) for U.S. and Canada*: UL/UL-C listed as suitable for use in Class I, Groups A-D; Division 2; temperature code T4 enclosure based systems. Communications circuits also meet the requirements for Class 2 as defined in Article 725 of the National Electrical Code (NFPA No.70) and Section 16 of the Canadian Electrical Code (CSA C22.1). Conditions for use are as specified in the *Standard and Compact 200 Series Subsystem User's Guide* (B0400FA). • *European Low Voltage Directive 2014/35/EU and Explosive Atmospheres (ATEX) directive 2014/34/EU*: ATEX (DEMKO) Ex nA IIC T4 Gc certified when connected as described in the *Standard and Compact 200 Series Subsystem User's Guide* (B0400FA). For use in an enclosure suited for an ATEX Zone 2 classified area.
RoHS Compliance	Complies with European RoHS Directive 2011/65/EU, including amending Directives 2015/863 and 2017/2102

Environmental Specifications

	Operating	Storage
Temperature	-20 to +60°C (-4 to +140°F)	-40 to +70°C (-40 to +158°F)
Relative Humidity	5 to 95% (noncondensing)	5 to 95% (noncondensing)
Altitude	-300 to +3,000 m (-1,000 to +10,000 ft)	-300 to +12,000 m (-1,000 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	0.75 m/s^2 (5 to 500 Hz)	

Physical Specifications

	Compact FBM239	Termination Assembly
Mounting	The Compact FBM239 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. See *Compact 200 Series 16-Slot Horizontal Baseplate* (PSS 41H-2C200) for details.	The TA mounts on a DIN rail and accommodates multiple DIN rail styles including 32 mm (1.26 in) and 35 mm (1.38 in)
Weight	185 g (6.5 oz) approximate	• Compression: 181 g (0.40 lb) approximate
Dimensions	• 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)	• Compression Screw: See *Figure 1* and *Figure 2*
Part Numbers	• Compact FBM239: RH101GK	See *Functional Specifications - Standard Termination Assemblies, page 11*, *Functional Specifications - Main Termination Assemblies, page 12*, and *Functional Specifications - Expansion Termination Assemblies, page 17*
Termination Cables	• Cable Lengths: Up to 30 m (98 ft) • Cable Materials: Polyurethane or Low Smoke Zero Halogen • Termination Cable Type: ◦ Baseplate to Main TA: Type 4 - See *Table 2, page 22* ◦ Main TA to Expansion TA: Type 6 - See *Table 3, page 23*	
Cable Connection — Baseplate to Main TA	• FBM Baseplate End: 37-pin D-subminiature	• Termination Assembly End: 37-pin D-subminiature
Cable Connection — Main TA to Expansion TA	• Main TA End: 25-pin D-subminiature	• Expansion TA End: 37-pin D-subminiature

Construction - Termination Assembly	• Material: Polyamide (PA), compression
Field Termination Connections	Compression — Accepted Wiring Sizes: • Solid/Stranded/AWG: 0.2 to 4 mm^2/0.2 to 2.5 mm^2/24 to 12 AWG • Stranded with Ferrules: 0.2 to 2.5 mm^2 with or without plastic collar

Termination Assemblies and Cables

Field I/O signals connect to the FBM subsystem via DIN rail mounted TAs. Multiple types of TAs are available with Compact FBM239 to provide I/O signal connections, signal conditioning, optical isolation from signal surges, and external power connections for field devices as required by the particular FBM. Since these features are built into the termination assemblies (where required), in most applications there is no need for additional termination equipment for field circuit functions such as circuit protection or signal conditioning (including fusing and power distribution).

The DIN rail mounted termination assemblies connect to the FBM subsystem baseplate by means of removable termination cables. The cables are available in a variety of lengths, up to 30 meters (98 feet), allowing the termination assemblies to be mounted in either the enclosure or in an adjacent enclosure. See *Table 2, page 22* and *Table 3, page 23* for termination cable part numbers and specifications.

Discrete Inputs/Outputs

Various TAs are available to support the interfacing of field signals to the low level FBM I/O circuits. Active TAs support input/output signal conditioning for the FBM as well as channel isolation. The signal conditioning circuits are located on daughter boards that are mounted under the component covers of the TAs. To condition signals, these TAs provide optical isolation, current limiting, voltage attenuation and optional terminal blocks to connect externally supplied excitation voltage.

Functional Specifications - Standard Termination Assemblies

FBM Type	Input Signal	Output Signal	TA Part Number[a] PA	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
Compact FBM239	16 channel, Voltage Monitor, external source 30 V dc maximum applied voltage Logic Zero – 0 to 5 V dc Logic One – 15 to 30 V dc 2.2 mA typical at 30 V dc 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	16 channel output switch, external source 60 V dc maximum voltage 0.25 A dc maximum current 2.0 A dc maximum current per FBM 0.25 mA dc maximum off-state leakage current 0.4 A over-current fuse	RH924VJ	C	4	1, 2, 4
Compact FBM239	16 channel, Contact Sense, internal source 24 V dc nominal open circuit voltage 7 mA nominal maximum current 2.2 mA typical at 30 V dc 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	16 channel output switch, external source 60 V dc maximum voltage 0.25 A dc maximum current 2.0 A dc maximum current per FBM 0.25 mA dc maximum off-state leakage current 0.4 A over-current fuse	RH924VM	C	4	1, 2, 4

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

(b) C = TA with compression terminals, RL = TA with ring lug terminals. Knife has compression terminals.

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

(d) See *Table 1* Termination Assembly certification definitions.

Functional Specifications - Main Termination Assemblies

FBM Type	Input Signal	Output Signal	TA Part No.[a] PA	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
Compact FBM239	When replacing a main FBM09A/B: Voltage Monitor external source 130 V dc Maximum voltage Logic Zero – 0 to 5 V dc Logic One – 15 to 130 V dc 2.2 mA typical 5 to 130 V dc 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance When replacing a main FBM09C/D: Contact sense internal source 24 V dc ±10% Open circuit voltage 2.5 mA maximum short circuit current 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing a main FBM09A/C: Output Switch external source 60 V dc Maximum voltage 0.5 V maximum voltage drop @ 0.5 A 0.5 A maximum current 0.75 A current limit Shorted load duration: indefinite (duty-cycle limited) 1.0 mA maximum off-state leakage When replacing a main FBM09B/D: Output switch internal source 11 V dc ±2 V Open circuit voltage Source resistance 680 Ω nominal Shorted load duration: indefinite 0.5 mA maximum off-state leakage	RH924HE	C	4	1, 2, 4

FBM Type	Input Signal	Output Signal	TA Part No.[a]	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
			PA			
Compact FBM239	When replacing a main FBM10: Voltage Monitor external source 132 V ac Maximum voltage Logic Zero – 0 to 20 V ac Logic One: 79 to 132 V ac 2.2 mA typical 20 to 132 V ac 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing a main FBM10: Output Switch external source 132 V ac Maximum voltage 0.4 V maximum voltage drop @ 1 A 2 A maximum current per channel 12 A maximum current per TA 3 A current limit 24 A surge current limit for 10 ms Shorted load duration: indefinite (duty-cycle limited) 3 mA maximum off-state leakage	RH924HG	C	4	1, 4
Compact FBM239	When replacing a main FBM11: Voltage Monitor external source 264 V ac Maximum voltage Logic Zero – 0 to 40 V ac Logic One: 164 to 264 V ac 2.2 mA typical 40 to 264 V ac 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing a main FBM11: Output Switch external source 264 V ac Maximum voltage 0.6 V maximum voltage drop @ 0.5 A 1 A maximum current per channel 7 A maximum current per TA 1.5 A current limit 12 A surge current limit for 10 ms Shorted load duration: indefinite (duty-cycle limited) 2.5 mA maximum off-state leakage	RH924HJ	C	4	1

FBM Type	Input Signal	Output Signal	TA Part No.[a]	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
			PA			
Compact FBM239	When replacing a main FBM26A: Voltage Monitor external source 150 V dc Maximum voltage Logic Zero – 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing a main FBM26A: Output Switch external source 150 V dc Maximum voltage 0.4 V maximum voltage drop @ 1 A 2 A maximum current per channel 12 A maximum current per TA 2.3 A current limit 20 A surge current limit for 20 ms Shorted load duration: indefinite (duty-cycle limited) 2 mA maximum off-state leakage	RH924HU	C	4	1, 2, 4
Compact FBM239	When replacing a main FBM26B: Contact sense internal source 48 V dc nominal Open circuit voltage 2.5 mA ±20% short circuit current 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing a main FBM26B: Output switch external source 150 V dc Maximum voltage 0.4 V maximum voltage drop @ 1 A 2 A maximum current per channel 12 A maximum current per TA 2.3 A current limit 20 A surge current limit for 20 ms Shorted load duration: indefinite 2 mA maximum off-state leakage	RH924HV	C	4	1, 2, 4

FBM Type	Input Signal	Output Signal	TA Part No.[a]	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
			PA			
Compact FBM239	When replacing a main FBM26C: Contact sense external source on channel 1 150 V dc Maximum voltage Logic Zero – 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing a main FBM26C: Output switch external source 150 V dc Maximum voltage 0.4 V maximum voltage drop @ 1 A 2 A maximum current per channel 12 A maximum current per TA 2.3 A current limit 20 A surge current limit for 20 ms Shorted load duration: indefinite 2 mA maximum off-state leakage	RH924H-W	C	4	1, 2, 4

FBM Type	Input Signal	Output Signal	TA Part No.[a]	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
			PA			
Compact FBM239	When replacing a main FBM41A: Voltage Monitor external source 60 V dc Maximum voltage Logic Zero – 0 to 5 V dc Logic One – 15 to 60 V dc 6 mA maximum input current 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance When replacing a main FBM41C: Contact sense internal source 24 V dc ±20% Open circuit voltage 5 mA maximum short circuit current 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing a main FBM41A: Output Switch external source 60 V dc Maximum voltage 0.4 V maximum voltage drop @ 1 A 2.25 A maximum current 12 A maximum current per TA 10 A surge current limit for 20 ms maximum Shorted load duration: indefinite (duty-cycle limited) 1.0 mA maximum off-state leakage	RH924JA	C	4	1, 2, 4

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

[b] C = TA with compression terminals, RL = TA with ring lug terminals. Knife has compression terminals.

[c] See *Table 2* for cable part numbers and specifications.

[d] See *Table 1* Termination Assembly certification definitions.

Functional Specifications - Expansion Termination Assemblies

FBM Type	Input Signal	Output Signal	TA Part Number[a] PA	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
Compact FBM239	When replacing an expansion FBM14A/B: Voltage Monitor external source 130 V dc maximum voltage Logic Zero – 0 to 5 V dc Logic One – 15 to 130 V dc 2.2 mA typical 5 to 130 V dc 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance When replacing an expansion FBM14C/D: Contact sense internal source 24 V dc ±10% Open circuit voltage 2.5 mA maximum short circuit current 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing an expansion FBM14A/C: Output Switch external source 60 V dc maximum voltage 0.5 V maximum voltage drop @ 0.5 A 0.5 A maximum current 0.75 A current limit Shorted load duration: indefinite (duty-cycle limited) 1.0 mA maximum off-state leakage When replacing an expansion FBM14B/D: Output switch internal source 11 V dc ±2 V Open circuit voltage Source resistance 680 Ω nominal Shorted load duration: indefinite 0.5 mA maximum off-state leakage	RH924HF	C	6	1, 2, 4

FBM Type	Input Signal	Output Signal	TA Part Number[a] PA	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
Compact FBM239	When replacing an expansion FBM15: Voltage Monitor external source 132 V ac maximum voltage Logic Zero – 0 to 20 V ac Logic One: 79 to 132 V ac 2.2 mA typical 20 to 132 V ac 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing an expansion FBM15: Output Switch external source 132 V ac maximum voltage 0.4 V maximum voltage drop @ 1 A 2 A maximum current per channel 12 A maximum current per TA 3 A current limit 24 A surge current limit for 10 ms Shorted load duration: indefinite (duty-cycle limited) 3 mA maximum off-state leakage	RH924HH	C	6	1, 4
Compact FBM239	When replacing an expansion FBM16: Voltage Monitor external source 264 V ac Maximum voltage Logic Zero – 0 to 40 V ac Logic One: 164 to 264 V ac 2.2 mA typical 40 to 264 V ac 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing an expansion FBM16: Output Switch external source 264 V ac Maximum voltage 0.6 V maximum voltage drop @ 0.5 A 1 A maximum current per channel 7 A maximum current per TA 1.5 A current limit 12 A surge current limit for 10 ms Shorted load duration: indefinite (duty-cycle limited) 2.5 mA maximum off-state leakage	RH924HK	C	6	1

FBM Type	Input Signal	Output Signal	TA Part Number[a] PA	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
Compact FBM239	When replacing an expansion FBM27A: Voltage Monitor external source 150 V dc Maximum voltage Logic Zero – 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing an expansion FBM27A: Output Switch external source 150 V dc Maximum voltage 0.4 V maximum voltage drop @ 1 A 2 A maximum current per channel 12 A maximum current per TA 2.3 A current limit 20 A surge current limit for 20 ms Shorted load duration: indefinite (duty-cycle limited) 2 mA maximum off-state leakage	RH924HX	C	6	1, 2, 4
Compact FBM239	When replacing an expansion FBM27B: Contact sense internal source 48 V dc nominal Open circuit voltage 2.5 mA ±20% short circuit current 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing an expansion FBM27A: Output switch external source 150 V dc Maximum voltage 0.4 V maximum voltage drop @ 1 A 2 A maximum current per channel 12 A maximum current per TA 2.3 A current limit 20 A surge current limit for 20 ms Shorted load duration: indefinite 2 mA maximum off-state leakage	RH924HY	C	6	1, 2, 4

FBM Type	Input Signal	Output Signal	TA Part Number[a] PA	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
Compact FBM239	When replacing an expansion FBM27C: Contact sense external source on channel 1 150 V dc Maximum voltage Logic Zero – 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing an expansion FBM27A: Output switch external source 150 V dc Maximum voltage 0.4 V maximum voltage drop @ 1 A 2 A maximum current per channel 12 A maximum current per TA 2.3 A current limit 20 A surge current limit for 20 ms Shorted load duration: indefinite 2 mA maximum off-state leakage	RH924HZ	C	6	1, 2, 4

FBM Type	Input Signal	Output Signal	TA Part Number[a] PA	Term. Type[b]	BP to TA Cable[c]	TA Cert. Type[d]
Compact FBM239	When replacing an expansion FBM42A: Voltage Monitor external source 60 V dc Maximum voltage Logic Zero – 0 to 5 V dc Logic One – 15 to 60 V dc 6 mA maximum input current 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance When replacing an expansion FBM42C: Contact sense internal source 24 V dc ±20% Open circuit voltage 5 mA maximum short circuit current 1 kΩ Maximum On-state resistance 100 kΩ Minimum Off-state resistance	When replacing an expansion FBM42A/C: Output Switch external source 60 V dc Maximum voltage 0.4 V maximum voltage drop @ 1 A 2.25 A maximum current 12 A maximum current per TA 10 A surge current limit for 20 ms maximum Shorted load duration: indefinite (duty-cycle limited) 1.0 mA maximum off-state leakage	RH924JB	C	6	1, 2, 4
Connect this TA to the main TA						

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

[b] C = TA with compression terminals, RL = TA with ring lug terminals. Knife has compression terminals.

[c] See *Table 2, page 22* and *Table 3, page 23* for cable part numbers and specifications.

[d] See *Table 1, page 22* for Termination Assembly certification definitions.

Table 1 - Certifications for Termination Assemblies

Type	Certification
Type 1	TTAs 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 meeting entity parameter constraints specified in *Standard and Compact 200 Series Subsystem User's Guid*e (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.
Type 3	Same as Type 2 above except that only input circuits are non-incendive/Class 2.
Type 5	All field circuits are NEC/CEC Class 2 limited energy if customer-supplied equipment meets Class 2 limits.

Table 2 - Termination Cable Types (Baseplate to Main TA) and Part Numbers - Type 4

Cable Length m (ft)	Type 4 P/PVC[(a)]	Type 4 LSZH[(b)]
0.5 (1.6)	RH100CJ	RH100BN
1.0 (3.2)	RH100CK	RH100BP
1.5 (4.9)	RH100EQ	RH100EN
2.0 (6.6)	RH100CL	RH100BQ
3.0 (9.8)	RH100CM	RH100BR
5.0 (16.4)	RH100CN	RH100BS
10.0 (32.8)	RH100CP	RH100BT
15.0 (49.2)	RH100CQ	RH100BU
20.0 (65.6)	RH100CR	RH100BV
25.0 (82.0)	RH100CS	RH100BW
30.0 (98.4)	RH100CT	RH100BX

(a) P/PVC cable assembles 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).

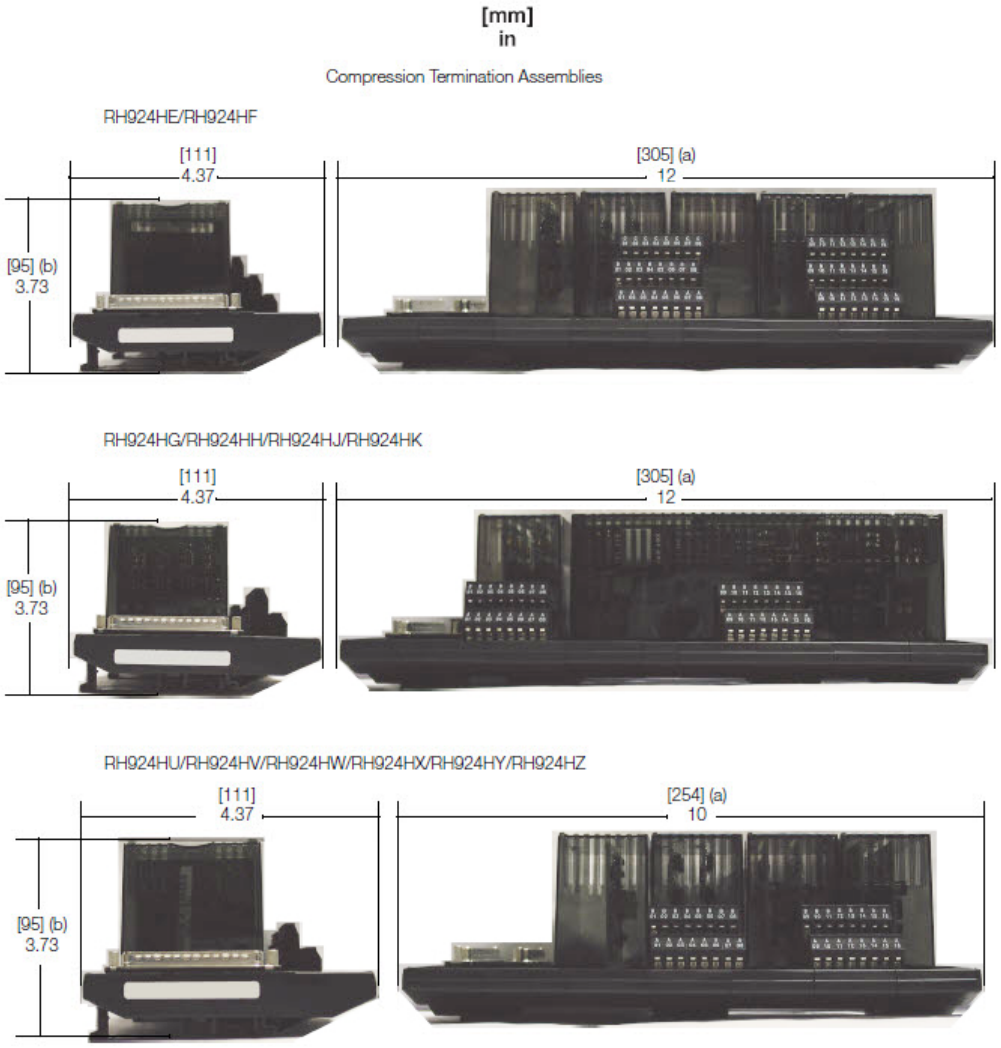
Table 3 - Cable Types (Main TA to Expansion TA Cables) and Part Numbers

Cable Length m (ft)	Type 6 P/PVC[a]	Type 6 LSZH[b]
0.75 (2.5)	RH924CK	RH928CQ

(a) P/PVC cable assembles polyurethane outer jacket and semi-rigid PVC primary conductor insulation temperature range: -20 to + 70°C (-4 to 158°F). These cables are no longer available for purchase.

(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

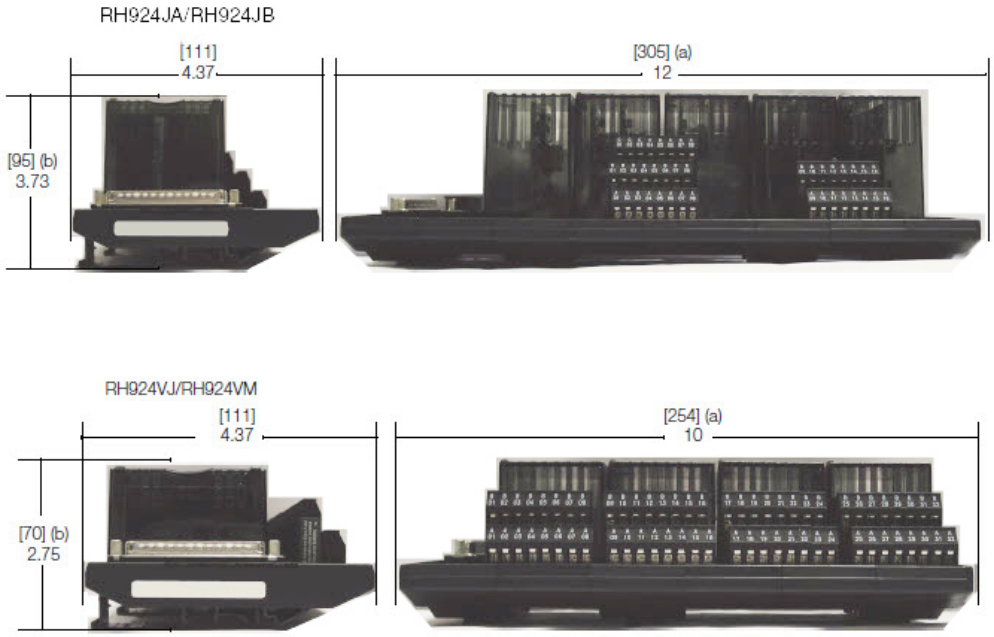


(a) Overall width – for determining DIN rail loading.

(b) Height above DIN rail (add to DIN rail height for total)

[mm]
in

Compression Termination Assemblies



(a) Overall width – for determining DIN rail loading.

(b) Height above DIN rail (add to DIN rail height for total)

Related Product Documents

PSS Number	Description
PSS 41H-2COV	*Compact 200 Series I/O Subsystem Overview*
B0400FA	*Standard and Compact 200 Series Subsystem User's Guide*
PSS 41H-2C200	*Compact 200 Series 16-Slot Horizontal Baseplate*
PSS 41H-2SOV	*Standard 200 Series Subsystem Overview*
PSS 41H-2CERTS	*Standard and Compact 200 Series I/O - Agency Certifications*
PSS 41H-2C480	*Compact Power Supply - FPS480-24*
PSS 41S-3FCPICS	*Field Control Processor 280 (FCP280) Integrated Control Software*

⚠ **WARNING**: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov/.

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Global Customer Support: https://pasupport.schneider-electric.com

As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

PSS 41H-2C239, Rev A