

Standard and Compact 200 Series I/O - Agency Certifications



Standard and Compact 200 Series I/O equipment is safety certified by authorized agencies as specified herein.

OVERVIEW

Standard and Compact 200 Series equipment including Field Control Processors (FCPs), Control Network Interfaces (CNIs), Fieldbus Modules (FBMs) and their termination assemblies, and Fieldbus Communications Modules (FCMs) with their associated equipment/agency certifications, are listed on these pages:

- ▶ Certifications for 200 Series Baseplates
- ▶ Certifications for Power Supply
- ▶ Certifications for Field Control Processors (FCP) and Control Network Interface (CNI)
- ▶ Certifications for Fieldbus Modules (FBMs)

- ▶ Certifications for Fieldbus Communications Modules (FCMs)
- ▶ Certifications for Termination Assemblies (TAs)

FEATURES

Standard and Compact 200 Series I/O equipment is DIN-rail mounted, enclosure based, equipment that has these safety certifications:

- ▶ Underwriters Laboratories (UL®) listing for US (NRTL) and Canadian (UL-C) requirements for both ordinary and, where applicable, Hazardous Locations

- ▶ European Union (EU) CE Marked in compliance with the Low Voltage Directive, the EMC Directive, and where applicable, the ATEX Directive
- ▶ Bureau Veritas Marine Certified for Environmental Category EC31C (unless otherwise specified in this PSS)
- ▶ European EMC Directive 2014/30/EU Meets: EN61326:2013 Class A Emissions and Industrial Immunity levels
- ▶ ABS Marine Type Approved (Unless otherwise specified in this PSS)

CERTIFICATIONS FOR STANDARD AND COMPACT 200 SERIES BASEPLATES

Table 1 identifies the certifications for the *Standard 200 Series Baseplates* (refer to PSS 31H-2SBASPLT) and the *Compact 200 Series Baseplate* (refer to PSS 31H-2C200 B4).

Table 1. Certifications for 200 Series Baseplates

Module	Description
Standard 200 Series Baseplates	Component for containing FCPs, FBMs and FCMs.
Compact 16-Slot Baseplates	Component for containing Compact 200 Series Fieldbus Modules.
Underwriters Laboratories (US and Canadian Certification)	
UL/UL-C listed as suitable for use in Class I; Groups A-D; Division 2 temperature code T4 enclosure-based systems. Conditions of use are as specified in the <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA).	
ATEX (DEMKO)	
ATEX certified Ex nA IIC T4 Gc for use in Zone 2 enclosure-based systems. Conditions of use are as specified in <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA). Comply with ATEX directive for II 3 G use.	
ABS Type Approved and Bureau Veritas Marine Certification for Environmental Category EC31.	

CERTIFICATIONS FOR POWER SUPPLIES

The Compact Power Supply - FPS480-24 - is ATEX qualified, and agency certified for use in Class 1, Division 2 and Zone 2 applications (refer to PSS 31H-2C480 B4).

The FPS480-24 is UL® and UL-C certified to UL60950-1 and UL508 and has IEC/EN 60950 certifications. It is suitable for use in Class I; Groups A-D; Division 2 (Division 2 and Zone 2) hazardous locations with a temperature code of T3.

The FPS400-24 *Standard 200 Series Power Supply* is agency certified for use in Division 2 and Zone 2 applications (refer to PSS 31H-2W3).

The FPS400-24 is UL® certified to UL 60950-1, c-UL 60950, UL 60079-0, and UL 60079-15, provides a Safety Extra Low Voltage Outputs (SELV) and is suitable for use in Class I; Groups A-D; Division 2 (ATEX Zone 2) hazardous locations with a temperature code of T3.

The *Standard 200 Series Power Supplies - FPS240-24 and FPS120-24* are agency certified for use in Class I, Division 2, applications (refer to PSS 31H-2W7).

The FPS240-24 and FPS120-24 are UL® certified to UL 508 and C22.2 No. 107-1-01, UL 60950-1 and C22.2 No. 60950-1, and ANSI / ISA 12.12.01-2007, and C22.2 No. 213-M1987 and is suitable for use in Class I, Division 2, T4 Groups A, B, C, D and Class I, Zone 2 Groups IIA, IIB and IIC (ATEX Zone 2) hazardous locations.

CERTIFICATIONS FOR FIELD CONTROL PROCESSORS (FCP) AND CONTROL NETWORK INTERFACES (CNI)

Table 2 lists the certifications for Field Control Processors (FCPs) and Control Network Interfaces (CNIs).

Table 2. Certifications for FCPs and CNIs

Module	Description
FCP280	Field Control Processor 280 (RH924YA) (refer to PSS 31H-1FCP280)
FCP270	Field Control Processor 270 (P0917YZ) (refer to PSS 21H-1B9)
CNI	Control Network Interface (RH100FP) (refer to PSS 31H-1CNI)
Field Control Processor Modules	
There are no direct customer field circuit connections to these modules. All customer connections are made to the associated termination assemblies.	
Underwriters Laboratories (US and Canadian Certification)	
UL/UL-C listed as suitable for use in Class I; Groups A-D; Division 2, temperature code T4 enclosure-based systems. Conditions of use are as specified in <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA).	

Table 2. Certifications for FCPs and CNIs (Continued)

Module	Description
ATEX (DEMKO)	
ATEX certified Ex nA IIC T4 Gc for use in ATEX certified Zone 2 enclosure-based systems. Conditions of use are as specified in <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA). Comply with ATEX directive for II 3 G use.	
ABS Type Approved and Bureau Veritas Certified for Marine Installations in Environmental Category EC31C, with the exception of the CNI and its associated baseplate.	

CERTIFICATIONS FOR STANDARD 200 SERIES FIELDBUS MODULES (FBMS)

Table 3 lists the FBMs and the table footnotes on page 7 list the certifications for Fieldbus Modules (FBMs).

Table 3. Certifications for Standard 200 Series FBMs

Module	Description
FBM201/b /c/d	Channel Isolated, Analog Input (0 to 20 mA, 0 to 100 mV, 0 to 5 V, 0 to 10 V dc) Modules
FBM202	Channel Isolated, Thermocouple/mV Input Module
FBM203/b /c/d	Channel Isolated, Platinum/Nickel/Copper RTD Input Module
FBM204	Channel Isolated, 0 to 20 mA, I/O Module
FBM205	Redundant, Channel Isolated, 0 to 20 mA, I/O Module
FBM206	Channel Isolated, Pulse Input Module
FBM206b	Channel Isolated, Pulse Input/0 to 20 mA Analog Output Interface Module
FBM207/b /c	Channel Isolated, Voltage Monitor/Contact Sense Input Module*
FBM208/b	Channel Isolated, Redundant with Readback, 0 to 20 mA, I/O Module
FBM211	Differential Isolated, Analog Input Module, 0 to 20 mA
FBM212	Differential Isolated, Analog Input Module, Thermocouple
FBM214	0 to 20 mA, HART® Input Interface Module
FBM214b	Channel-Isolated, 0 to 20 mA, HART® Input Interface Module
FBM215	0 to 20 mA, HART Output Module
FBM216	Redundant 0 to 20 mA, HART Input Interface Module ^(a)
FBM216b	Redundant Channel-Isolated, 0 to 20 mA, HART Input Interface Module
FBM217	Discrete Input Module*
FBM218	Redundant 0 to 20 mA, HART Output Module
FBM219	Discrete Input/Output Module*
FBM220	FOUNDATION™ fieldbus H1 Communication Interface Module, Single-Channel ^(a)
FBM221	FOUNDATION fieldbus H1 Communication Interface Module, Four-Channel ^(a)
FBM222	Redundant PROFIBUS-DP™ Communication Interface Module, Two-Channel ^(a)

Table 3. Certifications for Standard 200 Series FBMs (Continued)

Module	Description
FBM223	PROFIBUS-DP™ Communication Interface Module, Two-Channel ^(a)
FBM224	Modbus® Communication Module, Four-Port ^(a)
FBM227	0 to 10 V dc, Contact/dc I/O Module with DPIDA and MDACT Support
FBM228	Redundant FOUNDATION fieldbus H1 Communication Interface Module, Four-Channel ^(a)
FBM229	DeviceNet™ Communication Module ^(a)
FBM230	Field Device System Integrator (FDSI) Four Serial Ports, Single
FBM231	Field Device System Integrator (FDSI) Four Serial Ports, Redundant
FBM232	Field Device System Integrator (FDSI) 10/100 Mbps Ethernet, Single
FBM233	Field Device System Integrator (FDSI) 10/100 Mbps Ethernet, Redundant
FBM237	Channel Isolated, Redundant Ready, 0 to 20 mA, Output Module
FBM238	Group Isolated Discrete 24DI/8DO Module*
FBM239	Group Isolated Digital 16DI/16DO Module*
FBM240	Channel Isolated, Redundant with Readback, Externally Sourced, Discrete Output Interface Module
FBM241/b /c/d	Channel Isolated, Discrete I/O Modules (FBM241/241b/241c/241d)*
FBM242	Channel Isolated, Externally Sourced, Discrete Output Module
FBM243	FoxCom™ Dual Baud Rate, Intelligent Device Module ^(a)
FBM243b	FoxCom™ Dual Baud Rate Intelligent Device and 0 to 20 mA Analog Output Interface Module ^(a)
FBM244	0 to 20 mA I/O Module with HART® Support
FBM245	Redundant 0 to 20 mA I/O Module with HART® Support
FBM246	FoxCom Redundant Dual Baud Rate, Intelligent Device Module ^(a)
FBM246b	FoxCom Redundant Dual Baud Rate Intelligent Device and 0 to 20 mA Analog Output Interface Module ^(a)
FBM247	Current/Voltage Analog/Digital/Pulse I/O Configurable Channel Module
FBM248	Redundant Current/Voltage Analog/Digital/Pulse I/O Configurable Channel Module ^(a)
* Inputs need to be less than 60 V dc.	

Table 3. Certifications for Standard 200 Series FBMs (Continued)

Module	Description
Fieldbus Modules	
There are no direct customer field circuit connections to these modules (except FBM232 and FBM233). All customer connections are made to the associated termination assemblies. Safety certification information only applies when these modules are used with specified certified termination assemblies as described in Table 7. FBM232 and FBM233 can be directly connected to customers field circuits and are Class 2 limited energy (see Table 7).	
Underwriters Laboratories (US and Canadian Certification)	
UL/UL-C listed as suitable for use in Class I; Groups A-D; Division 2, temperature code T4 enclosure-based systems. Conditions of use are as specified in <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA).	
ATEX (DEMKO)	
ATEX Certified to either Ex nA IIC T4 Gc or Ex nA IIC T5 Gc, depending upon the specific module. FBMs are certified for use in Zone 2 enclosure-based systems of IP54 or greater protection. Conditions of use are as specified in <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA). Comply with ATEX directive for II 3 G use.	
Marine Certification	
Bureau Veritas Certified for Marine Installations in Environmental Category EC31C. ABS Marine Type Approved.	

(a) Not Marine Certified.

CERTIFICATIONS FOR COMPACT 200 SERIES FIELDBUS MODULES (FBMS)

Table 4 lists the Compact 200 Series FBMs and their certifications.

Table 4. Certifications for Compact 200 Series FBMs

Module	Description
FBM201	Compact FBM201 Analog Input 0 to 20 mA Interface Module
FBM202	Compact FBM202, Thermocouple/mV Input Interface Module
FBM203/c(a)/ d(a)	Compact FBM203 Platinum/Nickel/Copper RTD Input Modules
FBM204	Compact FBM204, 0 to 20 mA I/O Interface Module
FBM207(a)/b /c(a)	Compact FBM207/b/c Voltage Monitor/Contact Sense Input Interface Modules
FBM208(a)	Compact FBM208, Redundant with Readback, 0 to 20 mA I/O Module
FBM211	Compact FBM211, 0 to 20 mA Input Interface Module
FBM212(a)	Compact FBM212 Thermocouple/mV Differential Input Module
FBM214b	Compact Channel-Isolated, 4 to 20 mA, HART® Input Interface Module
FBM215	Compact Channel-Isolated 4 to 20 mA, HART Output Interface Module
FBM216b	Compact Redundant Channel-Isolated, 4 to 20 mA, HART Input Interface Module
FBM217	Compact FBM217 32 Channel Discrete Input Interface Module
FBM218	Compact Redundant Channel-Isolated, 4 to 20 mA, HART Output Interface Module
FBM219(a)	Compact FBM219 Discrete 24DI/8DO Interface Module
FBM227(a)	Compact FBM227, 0 to 10 V dc, Contact/dc I/O Module with DPIDA and MDACT Support
FBM237	Compact FBM237, 0 to 20 mA Output Interface Module (Redundant Ready)
FBM238(a)	Compact FBM238, Digital 24DI/8DO Module
FBM239(a)	Compact FBM239, Digital 16DI/16DO Module
FBM240	Compact FBM240, Redundant Discrete Input and Discrete Output with internal Readback Interface Module
FBM241/c(b) /d(a)	Compact FBM241/c/d Discrete I/O Modules
FBM242	Compact Channel Isolated, Externally Sourced, Discrete Output Interface Module
FBM247(a)	Current/Voltage Analog/Digital/Pulse I/O Configurable Channel Module

Table 4. Certifications for Compact 200 Series FBMs (Continued)

Module	Description
FBM248(a)	Current/Voltage Analog/Digital/Pulse I/O Configurable Channel Module, Redundant
Fieldbus Modules	
There are no direct customer field circuit connections to these Compact 200 Series Fieldbus modules. All customer connections are made to the associated termination assemblies. Safety certification information only applies when these modules are used with specified certified termination assemblies as described in Table 7.	
Underwriters Laboratories (US and Canadian Certification)	
UL/UL-C listed as suitable for use in Class I; Groups A-D; Division 2, temperature code T4 enclosure-based systems. Conditions of use are as specified in <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA).	
ATEX (DEMKO)	
ATEX certified Ex nA IIC T4 Gc for use in ATEX certified Zone 2 enclosure-based systems. Conditions of use are as specified in <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA). Comply with ATEX directive for II 3 G use.	
Marine Certification	
All modules Bureau Veritas Certified for Marine Installations in Environmental Category EC31C and ABS Marine Type Approved - with the exception of the Compact FBM203c, FBM203d, FBM207, FBM207c, FBM208, FBM212, FBM219, FBM227, FBM238, FBM239, FBM241d, FBM247, and FBM248.	

(a) Not Marine Certified.

(b) Inputs need to be less than 60 V dc for FBM241c.

CERTIFICATIONS FOR FIELDBUS

COMMUNICATIONS MODULES (FCMs)

Table 5 identifies the certifications for the FCMs.

Table 5. Certifications for FCMs

Module	Description	PSS Number
FCM10E	Fieldbus Communications Module, 10 Mbps Ethernet, Wire	PSS 21H-2Y1 B3
FCM10Ef	Fieldbus Communications Module, 10 Mbps, Fiber Optic	PSS 21H-2Y2 B3
FCM100Et	Fieldbus Communications Module, 100 Mbps, Fiber Optic	PSS 21H-2Y10 B4
FCM100E	Fieldbus Communications Module, 100 Mbps, Fiber Optic	PSS 21H-2Y11 B4
FCM2F2, FCM2F4, FCM2F10	Fieldbus Communications Module, 2 Mbps, Fiber Optic	PSS 31H-2FCM
Underwriters Laboratories (US and Canadian Certification)		
UL/UL-C listed as suitable for use in UL/UL-C listed Class I; Groups A-D; Division 2 temperature code T4 enclosure-based systems. The modules are also UL and UL-C listed as associated apparatus for supplying non-incendive communication circuits for Class I; Groups A-D; Division 2 hazardous locations when connected to specified Foxboro Evo™ processor modules as described in the <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA). 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 of use are as specified in <i>Standard and Compact Subsystem User's Guide</i> (B0400FA).		
ATEX (DEMKO)		
ATEX (DEMKO) certified as Ex nA IIC T4 Gc for use in ATEX certified Zone 2 enclosure-based systems. The modules are ATEX certified as associated apparatus for supplying non-incendive field circuits for Zone 2, Group IIC, potentially explosive atmospheres when connected to specified processor modules as described in <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA). Comply with ATEX directive for II 3 G use.		

CERTIFICATIONS FOR FIELDBUS ISOLATOR/FILTER 200 (FBI200)

Table 6 identifies the certifications for the FBI200.

Table 6. Certifications for FBI200

Module	Description	PSS Number
FBI200	Fieldbus Isolator/Filter	PSS 31H-2FBI200
Underwriters Laboratories (US and Canadian Certification)		
UL/UL-C listed as suitable for use in UL/UL-C listed Class I; Groups A-D; Division 2 temperature code T4 enclosure-based systems. The module is also UL and UL-C listed as associated apparatus for supplying non-incendive communication circuits for Class I; Groups A-D; Division 2 hazardous locations when connected to specified Foxboro Evo™ processor modules as described in the <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA). 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 of use are as specified in <i>Standard and Compact Subsystem User's Guide</i> (B0400FA).		
ATEX (DEMKO)		
ATEX (DEMKO) certified as Ex nA IIC T4 Gc for use in ATEX certified Zone 2 enclosure-based systems.		

CERTIFICATIONS FOR TERMINATION ASSEMBLIES

Table 7 lists the type of certifications for the termination assemblies for standard 200 Series FBMs and the table footnotes on page 44 identify the certification types.

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
0 to 20 mA Inputs/Outputs						
0 to 20 mA	8		0	P0916AA P0916AB RH916XG P0917JK	FBM201	1, 2
0 to 100 mV	8		0	RH922ZM	FBM201b	1, 2
0 to 5 V	8		0	RH922ZN	FBM201c	1, 2
0 to 10 V	8		0	RH922ZP P0926SQ	FBM201d	1, 2
0 to 320 ohm	Two sets of 8		0	RH924WN(b)	FBM203	1, 2
0 to 640 ohm	8		0	P0916AE P0916AF RH916XJ P0917JM	FBM203b	1, 2
0 to 640 ohm	Two sets of 8		0	RH924WN(b)	FBM203b	1, 2
0 to 30 ohm	8		0	P0916AE P0916AF RH916XJ P0917JM	FBM203c	1, 2

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
0 to 30 ohm	Two sets of 8		0	RH924WN(b)	FBM203c	1, 2
0 to 320 ohm	8		0	RH924EX	FBM203d	1, 2
0 to 20 mA, External Power	16		0	RH916JT P0916PQ	FBM211	1, 2
0 to 20 mA, FBM Power	16		0	RH916BT P0916BU	FBM211	1, 4
-	0	0 to 20 mA	8	P0916CC P0916QC RH917QZ	FBM237	1, 2
0 to 20 mA	4	0 to 20 mA	4	P0916AG P0916AH RH917QW	FBM204	1 (4,5 with RH917QW)
0 to 20 mA	4	0 to 20 mA	4	P0916AJ P0916AK RH916XL P0917JP RH917QW	FBM205	1, 2 (4,5 with RH917QW)
0 to 20 mA	4	0 to 20 mA	4	P0916AJ P0916AK P0917JP	FBM208	1, 2

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
0 to 20 mA, non-HART or 4-20 mA, HART, over eight channels, each of which can be individually configured for a specific type of field I/O signal, and as either an input or output. Also each channel supports: ▶ 0 to 10 V and 0 to 5 analog input, non-HART ▶ Digital dry contact sense 24 V dc ▶ Discrete voltage monitor, configurable 0 and 1 thresholds 0-10 V ▶ NAMUR sensor discrete input with correct load resistor installed in the loop. Compatible with NAMUR device 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 ▶ Pulse count, frequency, acceleration and jerk, contact sense or voltage input ▶ Discrete Output 24 V, 20 mA current or solid state switch output				RH924WW	FBM247	1, 2
0 to 20 mA, non-HART or 4-20 mA, HART, over two sets of eight channels, each of which can be individually configured for a specific type of field I/O signal, and as either an input or output. Also supports: ▶ 0 to 10 V and 0 to 5 V analog input, 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 ▶ Pulse count, frequency, acceleration and jerk, contact sense or voltage input ▶ Discrete Output 24 V, 20 mA current or solid state switch output				RH924WG (b)	FBM247	1, 2

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
0 to 20 mA, non-HART or 4-20 mA, HART, over two sets of eight channels, each of which can be individually configured for a specific type of field I/O signal, and as either an input or output. Also supports: ▶ 0 to 10 V and 0 to 5 V analog input, 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 ▶ Pulse count, frequency, acceleration and jerk, contact sense or voltage input ▶ Discrete Output 24 V, 20 mA current or solid state switch output				RH100KR (b) or RH924WW	FBM248	1, 2
0 to 20 mA, HART	8		0	P0916BX P0926EA P0926TD	FBM214	1, 2
0 to 20 mA, HART	8		0	RH924JH	FBM214b	1, 2
	0	0 to 20 mA, HART	8	P0917XV P0926EK	FBM215	1, 2
0 to 20 mA, HART	8		0	P0916BX P0926EA P0926TD	FBM216	1, 2
0 to 20 mA, HART	8		0	RH924JH	FBM216b	1, 2
	0	0 to 20 mA, HART	8	P0917XV P0916EK	FBM218	1, 2

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
4 to 20 mA, HART	4	4 to 20 mA, HART	4	RH924QU RH924QZ (a)	FBM244	1, 2
4 to 20 mA, HART	4	4 to 20 mA, HART	4	RH924QU RH924QZ (a)	FBM245	1, 2
FOUNDATION™ fieldbus Interface						
Single-Channel H1 FOUNDATION fieldbus				P0917RF P0917RG	FBM220	1, 4
Four-Channel H1 FOUNDATION fieldbus				P0917RF P0917RG	FBM221	1, 4
Redundant Four-Channel H1 FOUNDATION fieldbus				RH922VC	FBM228	1, 4*
* FBM 228 can be alternately configured with third party termination to provide redundant power conditioning and intrinsically safe operation. These third party terminations are connected to the FBM228 with the RH922VC passive termination assembly. In this case, certification is the responsibility of the third party supplier.						
PROFIBUS-DP Interface						
Two-Channel PROFIBUS-DP				P0926TH RH926TJ	FBM222	1
Two-Channel PROFIBUS-DP				P0917SY	FBM223	5
Modbus Interface						
Four-Port Modbus				P0926GH P0926PA	FBM224	5
Field Device System Interface						
RS-232, RS422 or RS485	4	RS-232, RS422 or RS485	4	P0926GH P0926PA	FBM230	4

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
RS-232, RS422 or RS485	4	RS-232, RS422 or RS485	4	P0926GH P0926PA	FBM231	4
Ethernet	1	10/100 Mbps Ethernet	1	N/A	FBM232	4
Ethernet	1	10/100 Mbps Ethernet	1	N/A	FBM233	4
DeviceNet Interface						
Controller Area Network (CAN) protocol as specified by ODVA for DeviceNet networks at Three selectable speeds: 125, 250 and 500 Kbit/sec depending on network length	1	Controller Area Network (CAN) protocol as specified by ODVA for DeviceNet networks at Three selectable speeds: 125, 250 and 500 Kbit/sec depending on network length	1	RH926TE	FBM229	1
Thermocouple/mV Inputs						
Thermocouple/mV	8		0	P0916AC P0916AD RH916XH P0917JM	FBM202	1
Thermocouple/mV	Two sets of 8		0	RH928CN (b)	FBM202	1
Thermocouple/mV	14		0	RH916BV P0916BW	FBM212	1, 2
RTD Inputs						
RTD (Platinum/Nickel/Copper)	8		0	P0916AE P0916AF RH916XJ P0917JM	FBM203	1, 2

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
RTD (Platinum/Nickel/Copper)	Two sets of 8		0	RH924WN(b)	FBM203	1, 2
Pulse Inputs						
Pulse	8		0	P0916JQ P0916PG RH916XM P0917JQ	FBM206	1, 2
Pulse	4	0 to 20 mA	4	RH924QN RH924QP	FBM206b	1, 2
Contact Inputs/Switch Outputs						
24 V dc Contact	32		0	P0916PW P0916PX RH916XZ	FBM217	1, 4
24 V dc Contact	16		0	P0916JS P0916PP	FBM207b	1, 2
48 V dc Contact	16		0	P0917MF P0917MH RH917MG P0917MJ	FBM207c	1, 2
24 V dc Contact	8	15 to 60 V dc at 2 A Switch, unprotected (external source)	8	RH916UD P0916SS P0917KY	FBM241c	1, 2
24 V dc Contact	8	15 to 60 V dc at 2 A Switch, protected mode (external source)	8	RH916JW P0916QP	FBM241c	1, 2

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
24 V dc Contact	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source)	8	RH916AW P0916AX	FBM241c	3
24 V dc Contact	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source) with power distribution	8	RH916QQ P0916QR	FBM241c	3
24 V dc Contact	8	15 V dc at 15 mA Switch (internal source)	8	P0916JX P0916QS RH916YW P0917LA	FBM241d	1, 2
0 to 10 V dc Switch Inputs/ Switch Outputs						
0 to 10 V dc	4	0 to 10 V dc	2	RH924DB/	FBM227	1, 2
130 V dc digital inputs, isolated into two groups of two channels each	4	60 V dc digital outputs, isolated in two groups of two channels each	4	P0924JY		
15 to 60 V dc Switch Inputs/ Switch Outputs						
15 to 30 V dc Switch	32		0	RH916CA P0916CB	FBM217	1, 2
15 to 30 V dc Switch	0		16	RH917LE	FBM219	1, 2
15 to 60 V dc Switch	16		0	P0916AL P0916AN RH916XN P0917JR	FBM207	1, 2
15 to 60 V dc Switch	8	15 V dc at 15 mA Switch (internal source)	8	RH916JV P0916QN	FBM241b	1, 2

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
15 to 60 V dc Switch	0	15 to 60 V dc at 0.25 A Switch, protected mode (external source)	16	P0916LL	FBM219	1, 2
15 to 60 V dc Switch	8	15 to 60 V dc at 2 A Switch, unprotected (external source)	8	RH916UY P0916UZ	FBM241	1, 2
15 to 60 V dc Switch	8	15 to 60 V dc at 2 A Switch, protected mode (external source)	8	RH916AQ RH916AR	FBM241	1, 2
15 to 60 V dc Switch	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source)	8	RH916QE P0916QF	FBM241	3
240 V ac/30 V dc Switch Inputs/Switch Outputs						
120 V ac/125 V dc Switch	16		0	P0916AM P0916AP P0917JS	FBM207	1
120 V ac/125 V dc Switch	32		0	P0916PS P0916PT RH916YA	FBM217	1
120 V ac/125 V dc Switch (external source)	32		0	P0916PY P0916PZ P0917YB	FBM217	1
120 V ac/125 V dc Switch (external source)	16		0	RH916PK P0916PL P0917JT	FBM207	1
120 V ac/125 V dc Switch	8	125 V dc at 10 A, or 120 V ac at 10 A Switch (external source)	8	RH917YF	FBM240	5

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
120 V ac/125 V dc Switch	8	120 V ac at 2 A, or 125 V dc at 2 A Switch (external source)	8	RH917MX RH926DS	FBM240	5
120 V ac Switch	8	120 V ac at 5 A Switch (external source)	8	RH917HU	FBM240	5
120 V ac/125 V dc Switch	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source)	8	P0916AS P0916AT	FBM241	5
120 V ac/125 V dc Switch	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source) with power distribution	8	RH916QG P0916QH	FBM241	5
120 V ac/125 V dc Switch (external source)	0	125 V ac at 2 A, or 125 V dc at 2 A Switch (external source)	16	RH926BE RH926DV	FBM219	5
120 V ac/125 V dc Switch (external source)	0	125 V ac at 5 A, or 125 V dc at 0.6 A Switch (external source)	16	P0916LL	FBM219	5
120 V ac/125 V dc Switch (external source)	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source)	8	RH916QT P0926QU	FBM241	5
120 V ac/125 V dc Switch (external source)	0	125V dc at 0.6 A, or 125 V ac at 5 A Switch (external source) with power distribution	16	P0916LP RH917LS RH917LV	FBM219	5
120 V ac/125 V dc Switch (external source)	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source) with power distribution	8	RH916QV P0916QW	FBM241	5

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
240 V ac Switch Inputs/Switch Outputs						
240 V ac Switch	16		0	RH916PH P0916PJ	FBM207	1
240 V ac Switch	32		0	RH916PU P0916PV	FBM217	1
240 V ac Switch	8	240 V ac at 5 A Switch (external source)	8	RH916QJ P0916QK	FBM241	5
240 V ac Switch	8	240 V ac at 5 A Switch (external source) with power distribution	8	RH916QL P0916QM	FBM241	5
240 V ac Switch (external source)	16		0	RH916PM P0916PN	FBM207	1
240 V ac Switch (external source)	32		0	RH916QA P0916QB	FBM217	1
240 V ac Switch (external source)	8	240 V ac at 5 A Switch (external source)	8	RH916QX P0916QY	FBM241	5
240 V ac Switch (external source)	8	240 V ac at 5 A Switch (external source) with power distribution	8	RH916QZ P0916NZ	FBM241	5
15 to 60 V dc Switch Outputs						
	0	15 to 60 V dc at 2 A Switch (external source)	16	RH916JY P0916RJ RH917XX	FBM242	1, 2
	0	15 to 60 V dc at 2 A Switch (external source)	16	RH917HX RH923LH	FBM242	1, 4

Table 7. Certifications for Termination Assemblies for Standard 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	FBM Number	Certification Types
Type	#	Type	#			
30 V dc/240 V ac Switch Outputs						
	0	30 V dc at 5 A, or 240 V ac at 5 A Switch (external source)	16	P0916NG P0916RK RH923LL	FBM242	5
	0	30 V dc at 5 A, or 240 V ac at 5 A Switch (external source) with power distribution	16	P0916JZ P0916RL	FBM242	5
FoxCom Dual Baud Rate Intelligent Device Interface						
Isolated and Independent Communications Channels	8	Isolated and Independent Communications Channels	8	P0916BA, RH917XW, RH931KJ	FBM243	1, 2
Isolated and Independent Communications Channels	4	0 to 20 mA	4 4	RH924QQ RH924QY	FBM243b	1, 2
Isolated and Independent Communications Channels	8	Isolated and Independent Communications Channels	8	P0916BA, RH917XW, RH931KJ	FBM246	1, 2
Isolated and Independent Communications Channels	4	0 to 20 mA	4 4	RH924QQ RH924QY	FBM246b	1, 2

(a) Termination assembly has four output bypass jacks. It is not suitable for use in any hazardous locations - ordinary locations only.

(b) Baseplate-mounted termination assembly - supports I/O for two of the same FBM type. See associated FBM's PSS for details.

Table 8 lists the type of certifications for the termination assemblies for the Compact 200 Series FBMs and the table footnotes on page 44 identify the certification types.

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
0 to 20 mA Inputs/Outputs						
0 to 20 mA	8		0	P0916AA P0916AB RH916XG P0917JK	FBM201	1, 2
0 to 20 mA	4	0 to 20 mA	4	P0916AG P0916AH RH916XK RH917QW	FBM204	1 (4,5 with RH917QW)
0 to 20 mA	4	0 to 20 mA	4	RH916XL P0917JP	FBM208	1, 2
0 to 20 mA, External Power	16		0	RH916JT P0916PQ	FBM211	1, 2
0 to 20 mA, FBM Power	16		0	RH916BT P0916BU	FBM211	1, 4
4 to 20 mA, HART	8		0	RH924JH	FBM214b	1, 2
	0	4 to 20 mA, HART	8	P0917XV P0926EK RH926SP	FBM215	1, 2
4 to 20 mA, HART	8		0	RH924JH	FBM216b	1, 2
	0	4 to 20 mA, HART	8	P0917XV P0916EK	FBM218	1, 2
	0	0 to 20 mA	8	P0916CC P0916QC RH916YE RH917QZ	FBM237	1, 2

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
0 to 20 mA, non-HART or 4-20 mA, HART, over eight channels, each of which can be individually configured for a specific type of field I/O signal, and as either an input or output. Also each channel supports: ▶ 0 to 10 V and 0 to 5 analog input, 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 ▶ Pulse count, frequency, acceleration and jerk, contact sense or voltage input ▶ Discrete Output 24 V, 20 mA current or solid state switch output				RH924WW	FBM247 or FBM248	1, 2
0 to 20 mA, non-HART or 4-20 mA, HART, over two sets of eight channels, each of which can be individually configured for a specific type of field I/O signal, and as either an input or output. Also supports: ▶ 0 to 10 V and 0 to 5 V analog input, 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 ▶ Pulse count, frequency, acceleration and jerk, contact sense or voltage input ▶ Discrete Output 24 V, 20 mA current or solid state switch output				RH101KA	FBM248	1, 2

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
RTD Inputs						
0 to 320 ohm	8		0	P0916AE P0916AF RH916XJ P0917JM	FBM203	1, 2
0 to 30 ohm	8		0	RH916XJ P0917JM	FBM203c	1, 2
0 to 320 ohm	8		0	RH924EX	FBM203d	1, 2
0 to 150 V dc Inputs/Switch Outputs						
132 V ac or 150 V dc Voltage Monitor	24	250 V ac at 5 A Switch, protected mode (external source)	8	RH917LP RH917LL	FBM219	5
132 V ac or 150 V dc Contact Sense	24	250 V ac at 5 A Switch, protected mode (external source)	8	RH917LS RH917LV	FBM219	5
30 V dc Voltage Monitor	24	60 V ac at 0.25 A Switch, protected mode (external source)	8	RH917LE	FBM219	1, 2, 4
24 V dc Contact Sense	24	60 V ac at 0.25 A Switch, protected mode (external source)	8	RH917LH	FBM219	1, 2, 4
30 V dc Voltage Monitor	24	60 V ac at 0.25 A Switch, protected mode (external source)	8	RH924VD	FBM238	1, 2, 4
24 V dc Contact Sense	24	60 V ac at 0.25 A Switch, protected mode (external source)	8	RH924VG	FBM238	1, 2, 4

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
Thermocouple/mV Inputs						
Thermocouple/mV	8		0	P0916AC P0916AD RH916XH P0917JL	FBM202	1
Thermocouple/mV	14		0	RH916BV	FBM212	1, 2
Contact Inputs/Switch Outputs						
24 V dc Contact	16		0	RH916XT	FBM207b	1, 2
48 V dc Contact	16		0	RH917MG P0917MJ	FBM207c	1, 2
24 V dc Contact	32		0	P0916PW P0916PX RH916XZ	FBM217	1, 4
24 V dc Contact	8	15 to 60 V dc at 2 A Switch, protected mode (external source)	8	RH916JW	FBM241c	1, 2
24 V dc Contact	8	15 to 60 V dc at 2 A Switch, unprotected (external source)	8	RH916UD	FBM241c	1, 2
24 V dc Contact	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source)	8	RH916AW	FBM241c	3
24 V dc Contact	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source) with power distribution	8	RH916QQ P0916QR	FBM241c	3
24 V dc Contact	8	15 V dc at 15 mA Switch (internal source)	8	RH916YW	FBM241d	1, 2

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
0 to 10 V dc Switch Inputs/ Switch Outputs						
0 to 10 V dc	4	0 to 10 V dc	2	RH924DB	FBM227	1, 2
130 V dc digital inputs, isolated into two groups of two channels each	4	60 V dc digital outputs, isolated in two groups of two channels each	4			
15 to 60 V dc Switch Inputs/ Switch Outputs						
15 to 60 V dc Switch	16		0	RH916XN P0917JR	FBM207	1, 2
15 to 30 V dc Switch	32		0	RH916CA P0916CB	FBM217	1, 2
15 to 60 V dc Switch	8	15 to 60 V dc at 2 A Switch, unprotected (external source)	8	RH916UY	FBM241	1, 2
15 to 60 V dc Switch	8	15 to 60 V dc at 2 A Switch, protected mode (external source)	8	RH916AQ RH916AR	FBM240/ FBM241	1, 2
15 to 60 V dc Switch	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source)	8	RH916QE	FBM241	3
240 V ac/30 V dc Switch Inputs/Switch Outputs						
120 V ac/125 V dc Switch	16		0	RH916XP P0917JS	FBM207	1
120 V ac/125 V dc Switch (external source)	16		0	RH916PK P0917JT	FBM207	1
120 V ac/125 V dc Switch	32		0	P0916PS P0916PT RH916YA	FBM217	1

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
120 V ac/125 V dc Switch (external source)	32		0	P0916PY P0916PZ P0917YB	FBM217	1
120 V ac/125 V dc Switch	8	125 V dc at 5 A or 120 V ac at 10A, or 120 V ac at 10 A Switch (external source)	8	RH917YF	FBM240	5
120 V ac Switch	8	120 V ac at 5 A Switch (external source)	8	RH917HU	FBM240	5
120 V ac Switch	8	15 to 30 V dc at 5 A Switch (external source)	8	RH926SZ	FBM240	5
120 V ac/125 V dc Switch	8	120 V ac at 2 A, or 125 V dc at 2 A Switch (external source)	8	RH917MX RH926DS	FBM240/ FBM241	5
120 V ac/125 V dc Switch	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source)	8	P0916AS P0916AT	FBM241	5
120 V ac/125 V dc Switch	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source) with power distribution	8	RH916QG	FBM241	5
120 V ac/125 V dc Switch (external source)	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source) with power distribution	8	RH916QV	FBM241	5
120 V ac/125 V dc Switch	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source) with power distribution	8	RH916YH	FBM241	5
120 V ac/125 V dc Switch (external source)	8	30 V dc at 5 A, or 250 V ac at 5 A Switch (external source)	8	RH916QT	FBM241	5

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
240 V ac Switch Inputs/Switch Outputs						
240 V ac Switch	16		0	RH916PH	FBM207	1
240 V ac Switch (external source)	16		0	RH916PM	FBM207	1
240 V ac Switch	32		0	RH916PU P0916PV	FBM217	1
240 V ac Switch (external source)	32		0	RH916QA P0916QB	FBM217	1
240 V ac Switch	8	240 V ac at 5 A Switch (external source)	8	RH916QJ	FBM241	5
240 V ac Switch (external source)	8	240 V ac at 5 A Switch (external source)	8	RH916QX	FBM241	5
240 V ac Switch	8	240 V ac at 5 A Switch (external source) with power distribution	8	RH916QL	FBM241	5
240 V ac Switch (external source)	8	240 V ac at 5 A Switch (external source) with power distribution	8	RH916QZ	FBM241	5
15 to 60 V dc Switch Outputs						
	0	15 to 60 V dc at 2 A Switch (external source)	16	RH916JY P0916RJ RH917XX	FBM242	1, 2
	0	15 to 60 V dc at 2 A Switch (external source)	16	RH917HX RH923LH	FBM242	1, 4

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
30 V dc/240 V ac Switch Outputs						
	0	30 V dc at 5 A, or 240 V ac at 5 A Switch (external source)	16	P0916NG P0916RK RH916YY RH923LL	FBM242	5
	0	30 V dc at 5 A, or 240 V ac at 5 A Switch (external source) with power distribution	16	P0916JZ P0916RL RH916YZ	FBM242	5
	0	120 V ac/125 V dc at 2 A, solid-state switch Fused Outputs (external source)	16	RH926BE	FBM242	5
	0	120 V ac/125 V dc at 2 A SPDT (Form C) relay - Fused Outputs (external source)	16	RH926DV	FBM242	5
15 to 130 V dc Voltage Monitor, External Source Inputs						
Up to 130 V dc voltage Logic Zero: 0 to 5 V dc Logic One: 15 to 130 V dc 2.2 mA typical 5 to 130 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off- state resistance	16		0	RH924HA or RH924HB	FBM217	1

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
Up to 130 V dc voltage Logic Zero: 0 to 5 V dc Logic One: 15 to 130 V dc 2.2 mA typical 5 to 130 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16		0	RH924HA	FBM219	1
150 V dc Voltage Monitor/Contact Sense, External Source Inputs/Switch Outputs						
Voltage monitor (external source) Up to 130 V dc voltage Logic Zero: 0 to 5 V dc Logic One: 15 to 130 V dc 2.2 mA typical 5 to 130 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance Contact sense (internal source) 24 V dc $\pm$ 10% Open circuit voltage Up to 2.5 mA short circuit current Up to 1 K Ω Onstate resistance 100 K Ω Minimum Offstate resistance	24	Up to 60 V dc voltage (external source) Up to 0.5 V voltage drop @ 0.5 A Up to 0.5 A current 0.75 A current limit Shorted load duration: indefinite (duty-cycle limited) Up to 1.0 mA offstate leakage 11 V dc $\pm$ 2 V Open circuit voltage (internal source) Source resistance: 680 Ω nominal Shorted load duration: indefinite up to 0.5 mA off-state leakage	8	RH924HE	FBM238	1, 2, 4

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
Voltage monitor (external source) Up to 130 V dc voltage Logic Zero: 0 to 5 V dc Logic One: 15 to 130 V dc 2.2 mA typical 5 to 130 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance Contact sense (internal source) 24 V dc $\pm$ 10% Open circuit voltage Up to 2.5 mA short circuit current Up to 1 K Ω Onstate resistance 100 K Ω Minimum Offstate resistance	16	Up to 60 V dc voltage (external source) Up to 0.5 V voltage drop @ 0.5 A Up to 0.5 A current 0.75 A current limit Shorted load duration: indefinite (duty-cycle limited) Up to 1.0 mA offstate leakage 11 V dc $\pm$ 2 V Open circuit voltage (internal source) Source resistance: 680 Ω nominal Shorted load duration: indefinite up to 0.5 mA off-state leakage	16	RH924HE	FBM239	1, 2, 4
Voltage monitor (external source) Up to 132 V ac voltage Logic Zero: 0 to 20 V ac Logic One: 79 to 132 V ac 2.2 mA typical 20 to 132 V ac Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	24	Up to 132 V ac voltage (external source) Up to 0.4 V voltage drop @ 1 A Up to 2 A current per channel Up to 12 A current per TA 3 A current limit 24 A shock wave current limit for 10 msec Shorted load duration: indefinite (duty-cycle limited) Up to 3 mA offstate leakage	8	RH924HG	FBM238	1, 4

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
Voltage monitor (external source) Up to 132 V ac voltage Logic Zero: 0 to 20 V ac Logic One: 79 to 132 V ac 2.2 mA typical 20 to 132 V ac Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16	Up to 132 V ac voltage (external source) Up to 0.4 V voltage drop @ 1 A Up to 2 A current per channel Up to 12 A current per TA 3 A current limit 24 A shock wave current limit for 10 msec Shorted load duration: indefinite (duty-cycle limited) Up to 3 mA offstate leakage	16	RH924HG	FBM239	1, 4
Voltage monitor (external source) Up to 150 V dc voltage Logic Zero: 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	24	Up to 150 V dc voltage (external source) 0.4 V maximum voltage drop @ 1 A Up to 2 A current per channel Up to 12 A current per TA 2.3 A current limit 20 A shock wave current limit, 20 ms Shorted load duration: indefinite (duty-cycle limited) Up to 2 mA offstate leakage	8	RH924HU	FBM238	1, 2, 4
Voltage monitor (external source) Up to 150 V dc voltage Logic Zero: 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16	Up to 150 V dc voltage (external source) Up to 0.4 V voltage drop @ 1 A Up to 2 A current per channel Up to 12 A current per TA 2.3 A current limit 20 A shock wave current limit, 20 ms Shorted load duration: indefinite (duty-cycle limited) Up to 2 mA offstate leakage	16	RH924HU	FBM239	1, 2, 4

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
Contact Sense (external source on channel 1) Up to 150 V dc voltage Logic Zero: 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	24	Up to 150 V dc voltage (external source) Up to 0.4 V voltage drop @ 1 A Up to 2 A current per channel Up to 12 A current per TA 2.3 A current limit 20 A shock wave current limit, 20 ms Shorted load duration: indefinite (duty-cycle limited) Up to 2 mA offstate leakage	8	RH924HW	FBM238	1, 2, 4
Contact Sense (external source on channel 1) Up to 150 V dc voltage Logic Zero: 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16	Up to 150 V dc voltage (external source) Up to 0.4 V voltage drop @ 1 A Up to 2 A current per channel Up to 12 A current per TA 2.3 A current limit 20 A shock wave current limit, 20 ms Shorted load duration: indefinite (duty-cycle limited) Up to 2 mA offstate leakage	16	RH924HW	FBM239	1, 2, 4

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
60 V dc Voltage Monitor/Contact Sense, External Source Inputs/Switch Outputs						
Voltage monitor (external source) Up to 60 V dc voltage Logic Zero: 0 to 5 V dc Logic One: 15 to 60 V dc Up to 6 mA input current Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance Contact sense (internal source) 24 V dc $\pm$ 20% Open circuit voltage Up to 5 mA short circuit current Up to 1 K Ω Onstate resistance 100 K Ω Minimum Offstate resistance	24	Up to 60 V dc voltage (external source) Up to 0.4 V voltage drop @ 1 A Up to 2.25 A current Up to 12 A current per TA 10 A shock wave current limit for up to 20 msec Shorted load duration: indefinite (duty-cycle limited) Up to 0.5 mA offstate leakage	8	RH924JA	FBM238	1, 2, 4

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
Voltage monitor (external source) Up to 60 V dc voltage Logic Zero: 0 to 5 V dc Logic One: 15 to 60 V dc Up to 6 mA input current Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance Contact sense (internal source) 24 V dc $\pm$ 20% Open circuit voltage Up to 5 mA short circuit current Up to 1 K Ω Onstate resistance 100 K Ω Minimum Offstate resistance	16	Up to 60 V dc voltage (external source) Up to 0.4 V voltage drop @ 1 A Up to 2.25 A current Up to 12 A current per TA 10 A shock wave current limit for up to 20 msec Shorted load duration: indefinite (duty-cycle limited) Up to 0.5 mA offstate leakage	16	RH924JA	FBM239	1, 2, 4
30 V dc Voltage Monitor/Contact Sense Inputs/Switch Outputs						
Voltage monitor (external source) Up to 30 V dc applied voltage Logic Zero – 0 to 5 V dc Logic One – 15 to 30 V dc 2.2 mA typical at 30 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16	Up to 60 V dc voltage (external source) Up to 0.25 A dc current Up to 2.0 A dc current per FBM Up to 0.25 mA dc offstate leakage current 0.4 A over-current fuse	16	RH924VJ	FBM239	1, 2, 4

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
Contact Sense (internal source) 24 V dc nominal open circuit voltage Up to 7 mA nominal current 2.2 mA typical at 30 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16	Up to 60 V dc voltage (external source) Up to 0.25 A dc current Up to 2.0 A dc current per FBM Up to 0.25 mA dc offstate leakage current 0.4 A over-current fuse	16	RH924VM	FBM239	1, 2, 4
48 V dc Contact Sense, Internal Source Inputs/Switch Outputs						
Contact Sense (internal source) 48 V dc nominal open circuit voltage 2.5 mA $\pm$ 20% short circuit current Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	24	Up to 150 V dc voltage (external source) 0.4 V voltage drop @ 1 A Up to 2 A current per channel Up to 12 A current per TA 2.3 A current limit 20 A shock wave current limit, 20 ms Shorted load duration: indefinite (duty-cycle limited) Up to 2 mA offstate leakage	8	RH924HV	FBM238	1, 2, 4
Contact Sense (internal source) 48 V dc nominal open circuit voltage 2.5 mA $\pm$ 20% short circuit current Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16	Up to 150 V dc voltage (external source) Up to 0.4 V voltage drop @ 1 A Up to 2 A current per channel Up to 12 A current per TA 2.3 A current limit 20 A shock wave current limit, 20 ms Shorted load duration: indefinite (duty-cycle limited) Up to 2 mA offstate leakage	16	RH924HV	FBM239	1, 2, 4

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
132 to 150 V dc Voltage Monitor, External Source Inputs						
Up to 132 V ac or 150 V dc voltage Logic Zero: 0 to 20 V ac; 0 to 20 V dc Logic One: 79 to 132 V ac; 75 to 150 V dc 2.2 mA typical 20 to 132 V ac Up to 1 KΩ On-state resistance 100 KΩ Minimum Off-state resistance	16		0	RH924HC or RH924HD	FBM217	1
Up to 132 V ac or 150 V dc voltage Logic Zero: 0 to 20 V ac; 0 to 20 V dc Logic One: 79 to 132 V ac; 75 to 150 V dc 2.2 mA typical 20 to 132 V ac Up to 1 KΩ On-state resistance 100 KΩ Minimum Off-state resistance	16		0	RH924HC	FBM219	1
150 V dc Voltage Monitor, External Source Inputs						
Up to 150 V dc voltage Logic Zero: 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc Up to 1 KΩ On-state resistance 100 KΩ Minimum Off-state resistance	16		0	RH924HN or RH924HR	FBM217	1

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
Up to 150 V dc voltage Logic Zero: 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16		0	RH924HN	FBM219	1
264 V dc Voltage Monitor, External Source Inputs						
Up to 264 V ac voltage Logic Zero: 0 to 40 V ac Logic One: 164 to 264 V ac 2.2 mA typical 40 to 264 V ac Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16		0	RH924HL or RH924HM	FBM217	1
Up to 264 V ac voltage Logic Zero: 0 to 40 V ac Logic One: 164 to 264 V ac 2.2 mA typical 40 to 264 V ac Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16		0	RH924HL	FBM219	1

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
264 V dc Voltage Monitor Inputs/ Switch Outputs						
Voltage monitor Up to 264 V ac voltage Logic Zero: 0 to 40 V ac Logic One: 164 to 264 V ac 2.2 mA typical 40 to 264 V ac Up to 1 KΩ On-state resistance 100 KΩ Minimum Off-state resistance	24	Up to 264 V ac voltage (external source) Up to 0.6 V voltage drop @ 0.5 A Up to 1 A current per channel Up to 7 A current per TA 1.5 A current limit 12 A shock wave current limit for 10 msec Shorted load duration: indefinite (duty-cycle limited) Up to 2.5 mA offstate leakage	8	RH924HJ	FBM238	1
Voltage monitor Up to 264 V ac voltage Logic Zero: 0 to 40 V ac Logic One: 164 to 264 V ac 2.2 mA typical 40 to 264 V ac Up to 1 KΩ On-state resistance 100 KΩ Minimum Off-state resistance	16	Up to 264 V ac voltage (external source) Up to 0.6 V voltage drop @ 0.5 A Up to 1 A current per channel Up to 7 A current per TA 1.5 A current limit 12 A shock wave current limit for 10 msec Shorted load duration: indefinite (duty-cycle limited) Up to 2.5 mA offstate leakage	16	RH924HJ	FBM239	1
24 V dc Contact Sense, Internal Source Inputs						
24 V dc ±10% Open circuit voltage Up to 2.5 mA short circuit current Up to 1 KΩ On-state resistance 100 KΩ Minimum Off-state resistance	16		0	RH924HA or RH924HB	FBM217	1

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
48 V dc Contact Sense, Internal Source Inputs						
48 V dc nominal open circuit voltage 2.5 mA ±20% short circuit current Up to 1 KΩ On-state resistance 100 KΩ Minimum Off-state resistance	16		0	RH924HP or RH924HS	FBM217	1
48 V dc nominal open circuit voltage 2.5 mA ±20% short circuit current Up to 1 KΩ On-state resistance 100 KΩ Minimum Off-state resistance	16		0	RH924HP	FBM219	1

Table 8. Certifications for Termination Assemblies for Compact 200 Series FBMs (Continued)

Signal Inputs		Signal Outputs		TA Part Number	Compact FBM Type	Certification Types
Type	#	Type	#			
48 V dc Contact Sense, External Source on Channel 1 Inputs						
Up to 150 V dc voltage Logic Zero: 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16		0	RH924HQ or RH924HT	FBM217	1
Up to 150 V dc voltage Logic Zero: 0 to 10 V dc Logic One: 33 to 150 V dc 2.5 mA typical 10 to 150 V dc Up to 1 K Ω On-state resistance 100 K Ω Minimum Off-state resistance	16		0	RH924HQ	FBM219	1

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 ATEX (DEMKO) certified Ex nA IIC T4 for use in Zone 2 potentially explosive atmospheres.
Type 2
TAs are UL/UL-C listed as associated apparatus for supplying non-incendive 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 <i>Standard and Compact 200 Series Subsystem User's Guide</i> (B0400FA). They are also ATEX (DEMKO) certified as associated apparatus 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.
Type 3
Same as Type 2 above except that only input circuits are non-incendive/Class 2.
Type 4
All field circuits are Class 2 limited energy (60 V dc, 30 V ac, 100 VA or less) if customer-supplied equipment meets Class 2 limits.
Type 5
The TA and its field circuitry are for use in only ordinary (non-hazardous) locations.

NOTE

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.

Also, all TAs listed to comply with Bureau Veritas Certified for Marine Installations in Environmental Category EC31C and are ABS Marine Type approved.

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