Discrete inputs can be sensed across all the usual voltage levels found in industrial facilities. The FBM207/b/c uses one of the several termination assemblies to match to the externally powered voltage level. In cases where the inputs are critical to the plant’s control scheme, the FBM 207/b/c may be installed as a redundant pair with standard control blocks used to manage the redundancy.

**OVERVIEW**

The FBM207/b/c Voltage Monitor/Contact Sense Input Module functions as a 16-channel dc voltage monitor or 16-channel contact sensor. Each channel accepts a 2-wire input from a dc voltage source (FBM207) or pair of contacts or solid state switches (FBM207b/ FBM207c). Associated termination assemblies (TAs) support discrete input signals at voltages of 60 V dc, 120 V ac/125 V dc, or 240 V ac. For voltages higher than 60 V dc, the TAs have additional signal conditioning hardware that provides voltage attenuation and optical isolation.
The module is available in three distinct types, and each type with its associated TA supports discrete inputs as shown below:

<table>
<thead>
<tr>
<th>Module</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBM207</td>
<td>Provides voltage monitoring at:</td>
</tr>
<tr>
<td></td>
<td>- 60 V dc</td>
</tr>
<tr>
<td></td>
<td>- 120 V ac/125 V dc</td>
</tr>
<tr>
<td></td>
<td>- 240 V ac</td>
</tr>
<tr>
<td></td>
<td>Provides switch inputs with:</td>
</tr>
<tr>
<td></td>
<td>- External 120 V ac/125 V dc</td>
</tr>
<tr>
<td></td>
<td>- External 240 V ac</td>
</tr>
<tr>
<td>FBM207b</td>
<td>24 V dc Contact Sense</td>
</tr>
<tr>
<td>FBM207c</td>
<td>48 V dc Contact Sense</td>
</tr>
</tbody>
</table>

Each discrete input is galvanically isolated from other channels and ground. Group isolated when used with external excitation.

The module performs signal conversion required to interface electrical input signals from field sensors to the redundant module Fieldbus. In addition, it executes programs for Discrete Input, Ladder Logic, Pulse Count, and Sequence of Events, with configurable options of Input Filter Time.

The module can be used as a single unit, or as a redundant pair (two FBM207s). When used as a redundant pair, the modules combine to provide redundancy at the Fieldbus Module (FBM) level, with field input signals received from one common termination assembly though a redundant adapter affixed to the FBMs' baseplate. The input current for redundant modules is doubled. A redundant digital input block in the Foxboro Evo™ Control Software validates each input in conjunction with information to/from the module, and selects the input with the highest quality for processing in the control strategy.

In a redundant configuration, contact sense power from each module is diode OR'd together in the redundant adapter to assure redundant power.

A redundant contact input function block, CINR, is used for each redundant pair of inputs. The CINR block handles input reads and initialization logic for the redundant channels. On each execution cycle of the CINR block, identical reads are sent to both modules, fully exercising the fieldbus and the logic circuitry of each module.

**FEATURES**

Key features of the FBM207/b/c modules are:

- Sixteen discrete inputs
- Supports discrete input signals at voltages of:
  - 15 to 60 V dc - contact sense
  - 120 V ac/125 V dc - voltage monitoring or switch inputs
  - 240 V ac - voltage monitoring or switch inputs
- Each input is galvanically isolated. Group isolated with external excitation
- Single or redundant modules
- Compact, rugged design suitable for enclosures in Class G3 (harsh) environments
- Executes programs for Discrete Input, Ladder Logic, Pulse Count, and Sequence of Events with configurable Input Filter Time option
- Termination Assemblies (TAs) for locally or remotely connecting field wiring to the FBM207
- Termination Assemblies for per channel internally and/or externally loop powered devices
- Various Termination Assemblies (TAs) have additional signal conditioning hardware that provides voltage attenuation and optical isolation.
COMPACT DESIGN
FBM207/b/c has a compact design, with a rugged extruded aluminum exterior for physical protection of the circuits.

Enclosures specially designed for mounting the FBM s provide various levels of environmental protection, up to harsh environments (Class G3), per ISA Standard S71.04.

VISUAL INDICATORS
Light-emitting diodes (LEDs) incorporated into the front of the module provide visual indication of the Fieldbus Module operational status, as well as the discrete states of the individual input points.

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

When redundant, either module may be replaced without upsetting field input signals to the good module. The module can be removed/replaced without removing field device termination cabling, power, or communications cabling.

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 digital 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.

I/A Series systems with software earlier than V8.x can support SOE through ECB6 and EVENT blocks. However, these systems do not support GPS time synchronization and use a timestamp sent by the Control Processor which is only accurate to the nearest second and is not synchronized between different Control Processors.
FIELDBUS COMMUNICATION
A Fieldbus Communications Module or a Control Processor interfaces to the redundant 2 Mbps module Fieldbus used by the FBMs. The FBM accepts communication from either path (A or B) of the 2 Mbps Fieldbus - should one path fail or be switched at the system level, the module continues communication over the active path.

MODULAR BASEPLATE MOUNTING
The module mounts on a DIN rail mounted baseplate, which accommodates up to four or eight Fieldbus Modules. The Modular Baseplate is either DIN rail mounted or rack mounted, and includes signal connectors for redundant module Fieldbus, redundant independent dc power, and termination cables.

Redundant modules must be located in odd and even 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. A single termination cable connects from the redundant adapter to the associated TA.

To system configurator applications and monitoring through SMON, System Manager, and SMDH, redundant modules appear to be separate, nonredundant modules. The functional redundancy for these modules is provided by their associated control blocks.

SECURITY
Field power, for contacts or solid-state switches, is current limited.

TERMINATION ASSEMBLIES
Field I/O signals connect to the FBM subsystem via DIN rail mounted TAs. The TAs used with the FBM207/b/c are described in “TERMINATION ASSEMBLIES AND CABLES” on page 9.
FUNCTIONAL SPECIFICATIONS

Communication
Communicates with its associated FCM or FCP via the redundant 2 Mbps module Fieldbus

Input
16 isolated and independent channels

Accuracy
Pulse Count
No missing pulses for pulse rate 0 to 250 Hz

Filter/Debounce Time\(^{(1)}\)
Configurable (No Filtering, 4, 8, 16, or 32 ms)

Voltage Monitor Function - Input

<table>
<thead>
<tr>
<th>INPUT</th>
<th>Voltage Range</th>
<th>Current (typical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logic One, On-State</td>
<td>15 to 60 V dc</td>
<td>1.4 mA</td>
</tr>
<tr>
<td>Logic Zero, Off-State</td>
<td>0 to 5 V dc</td>
<td>1.4 mA</td>
</tr>
</tbody>
</table>


SOURCE RESISTANCE LIMITS

<table>
<thead>
<tr>
<th>Logic One, On-State</th>
<th>Resistor (maximum)</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 kΩ</td>
<td>15 V dc</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Logic Zero, Off-State</th>
<th>Resistor (minimum)</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 kΩ</td>
<td>60 V dc</td>
<td></td>
</tr>
</tbody>
</table>

Contact Sensor Function - Input

<table>
<thead>
<tr>
<th>RANGE (EACH CHANNEL)</th>
<th>Voltage</th>
<th>Current (typical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact open (off)</td>
<td>Open-circuit</td>
<td>3.2 mA</td>
</tr>
<tr>
<td>Contact closed (on)</td>
<td>Short-circuit</td>
<td>3.2 mA</td>
</tr>
</tbody>
</table>

LOGIC ONE, ON-STATE RESISTANCE
10 kΩ (maximum)

LOGIC ZERO, OFF-STATE RESISTANCE
100 kΩ (minimum)

Isolation
Each channel is galvanically isolated from all other channels and earth (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.

**CAUTION**
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.

Power Requirements

<table>
<thead>
<tr>
<th>INPUT VOLTAGE RANGE (REDUNDANT)</th>
<th>Voltage Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 V dc +5%, -10%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONSUMPTION (MAXIMUM)</th>
<th>Power Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBM207, 3 W</td>
<td></td>
</tr>
<tr>
<td>FBM207b, 4 W</td>
<td></td>
</tr>
<tr>
<td>FBM207c, 5 W</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HEAT DISSIPATION (MAXIMUM)</th>
<th>Heat Dissipation</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBM207, 5.5 W</td>
<td></td>
</tr>
<tr>
<td>FBM207b, 4 W</td>
<td></td>
</tr>
<tr>
<td>FBM207c, 5 W</td>
<td></td>
</tr>
</tbody>
</table>

Loop Power Supply Protection
Current limited at 3.2 mA (typical)

Field Terminations Functional Specifications
Refer to “TERMINATION ASSEMBLIES AND CABLES” on page 9.

Calibration Requirements
Calibration of the module and termination assembly is not required.

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\(^{(1)}\) Digital filtering available for 200 Series FBM or competitive migration modules with version 1.25H or later firmware.
FUNCTIONAL SPECIFICATIONS (CONTINUED)

Regulatory Compliance

ELECTROMAGNETIC COMPATIBILITY (EMC)

European EMC Directive 2004/108/EC
Meets: EN 50081-2 Emission standard
EN 50082-2 Immunity standard
EN 61326 EMC Standard (Industrial Levels)
CISPR 11, Industrial Scientific and Medical (ISM) Radio-frequency Equipment - Electromagnetic Disturbance Characteristics - Limits and Methods of Measurement
Meets: Class A Limits
IEC 61000-4-2 ESD Immunity
Contact 4 kV, air 8 kV
IEC 61000-4-3 Radiated Field Immunity
10 V/m at 80 to 1000 MHz
IEC 61000-4-4 Electrical Fast Transient/Burst Immunity
2 kV on I/O, V dc power and communication lines
IEC 61000-4-5 Surge Immunity
2kV on ac and dc power lines; 1kV on I/O and communications lines
IEC 61000-4-6 Immunity to Conducted Disturbances induced by Radio-frequency Fields
3 V (rms) at 150 kHz to 80 MHz on I/O, V dc power and communication lines
IEC 61000-4-8 Power Frequency Magnetic Field Immunity
30 A/m at 50 and 60 Hz

PRODUCT SAFETY - LOW VOLTAGE INPUTS

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

European Low Voltage Directive 73/23/EEC
Certified for use in ordinary locations and compliant with IEC 61010 when connected as described in the Standard and Compact 200 Series Subsystem User’s Guide (B0400FA).
ENVIRONMENTAL SPECIFICATIONS

Operating Conditions
TEMPERATURE
  FBM207/b/c
  -20 to + 70°C (-4 to +158°F)
Termination Assembly
  PVC
  -20 to +50°C (-4 to 122°F)
  PA
  -20 to +70°C (-4 to +158°F)
RELATIVE HUMIDITY
  5 to 95% (noncondensing)

Storage Conditions
TEMPERATURE
  -40 to +70°C (-40 to +158°F)
RELATIVE HUMIDITY
  -5 to 95% (noncondensing)

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 from 5 to 500 Hz

(2) The environment ranges can be extended by the type of enclosure containing the module. [Refer to the Product Specification Sheet (PSS) applicable to the enclosure that is to be used.]
PHYSICAL SPECIFICATIONS

Mounting
FBM207/FMB207b/FBM207c mounts on a Modular baseplate. Baseplate can be mounted on a DIN rail (horizontally or vertically), or horizontally on a 19-inch rack using a mounting kit. Redundant modules must be located in odd and even adjacent positions on the baseplate (positions 1 and 2, 3 and 4, 5 and 6, or 7 and 8). See PSS 31H-2SBASEPLT for details.

Termination Assembly
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
- MODULE: 284 g (10 oz) approximate
- TERMINATION ASSEMBLY - COMPRESSION: 127 mm (5.02 in) – 272 g (0.60 lb, approximate)
- TERMINATION ASSEMBLY - COMPRESSION: 146 mm (5.75 in) – 317 g (0.7 lb, approximate)
- TERMINATION ASSEMBLY - RING LUG: 198 mm (7.78 in) – 400 g (0.90 lb, approximate)
- TERMINATION ASSEMBLY - RING LUG: 216 mm (8.51 in) – 440 g (1.0 lb, approximate)

Dimensions - Module
- HEIGHT: 102 mm (4 in), 114 mm (4.5 in) including mounting lugs
- WIDTH: 45 mm (1.75 in)
- DEPTH: 104 mm (4.11 in)

Dimensions - Termination Assembly
- COMPRESSION SCREW: Refer to page 13.
- RING LUG: Refer to page 14.

Part Numbers
- MODULES:
  - FBM207
  - P0914TD
  - FBM207b
  - P0914WH
  - FBM207c
  - P0917GY

TERMINATION ASSEMBLIES
Refer to "TERMINATION ASSEMBLIES AND CABLES" on page 9.

REDUNDANT ADAPTER
P0926ZY

Termination Cables
- CABLE LENGTHS: Up to 30 m (98 ft)
- CABLE MATERIALS: Polyurethane or Low Smoke Zero Halogen (LSZH)
- TYPE: Type 4 - Refer to Table 2
- CABLE CONNECTION: 37-pin male D-subminiature

Construction - Termination Assembly
- MATERIAL:
  - Polypropylene (PVC), compression
  - Polyamide (PA), compression
  - PVC, ring lug
  - PA, ring lug

FAMILY GROUP COLOR
- Dark blue - discrete

TERMINAL BLOCKS
- Inputs - 2 tiers, 16 positions
- Excitation - 2 tiers, 4 positions

Field Termination Connections
- COMPRESSION - 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

RING-LUG - ACCEPTED WIRING SIZES:
- #6 size connectors (0.375 in (9.5 mm))
  - 0.5 to 4 mm²/22 AWG to 12 AWG
TERMINATION ASSEMBLIES AND CABLES

General Description

Field I/O signals connect to the FBM subsystem via DIN rail mounted termination assemblies (TAs). Multiple types of TAs are available with FBM207s to provide I/O signal connections, signal conditioning, optical isolation from signal surges, external power connections, and/or fusing for protection of the FBM and/or field device 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 termination assembly can be used with a single FBM207 or with a redundant pair (two FBM207s). The DIN rail mounted termination assemblies connect to the FBM subsystem baseplate by means of removable termination cables. When used with a redundant module pair, the termination assembly is connected to the baseplate using a redundant adapter (P0926ZY). The DIN rail mounted TAs connect to the redundant adapter by means of a removable termination cable.

The cables for both single and redundant configurations 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. Refer to Table 2 on page 12 for termination cable part numbers and specifications.

Discrete Inputs

Termination assemblies with discrete inputs support sixteen 2-wire discrete input signals at passive low voltage levels of less than 60 V dc and active high voltage levels of 125 V dc, 120 V ac, or 240 V ac. Active termination assemblies support input signal conditioning for FBM207s. To condition signals, these termination assemblies may provide optical isolation, current limiting, noise reduction, voltage attenuation, or optional terminal blocks to connect externally supplied excitation voltage.

Low Voltage Discrete Inputs

The low voltage inputs (less than 60 V dc) use passive termination assemblies. Inputs for FBM207 are voltage monitor types. Voltage monitor inputs require an external field voltage source. Contact sense inputs use the FBM auxiliary +24 V dc or +48 V dc, supplied to all input channels on the assembly, to wet field contacts.

A load may not be required for proper operation of the input channels. A diode may be required for a dc inductive load only.

High Voltage Discrete Inputs

The high voltage input circuits support 125 V dc, 120 V ac, or 240 V ac. Inputs can be either voltage monitor or switched types. Voltage monitor inputs require a field voltage source. Switch inputs use customer supplied excitation voltage applied to dedicated terminals on the termination assembly and distributed on the termination assembly to each of the input channels.

To condition signals, voltage attenuation circuits are located on daughter boards mounted under the component covers of the termination assemblies.
## FUNCTIONAL SPECIFICATIONS - TERMINATION ASSEMBLIES

<table>
<thead>
<tr>
<th>FBM Type</th>
<th>Input Signal</th>
<th>TA Part No.(a)</th>
<th>Termination Type(b)</th>
<th>TA Cable Type(c)</th>
<th>TA Certification Type(d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBM207</td>
<td>16 channel, voltage monitor (external source) 15 to 60 V dc FBM207 channel isolation</td>
<td>P0916AL P0916AN P0916JR</td>
<td>C RL</td>
<td>4</td>
<td>1,2</td>
</tr>
<tr>
<td>FBM207</td>
<td>16 channel, voltage monitor 120 V ac or 125 V dc Logic Zero 0 to 20 V ac; 0 to 20 V dc Logic One 80 to 132 V ac; 75 to 150 V dc Input Current for Logic One; 2 mA typical FBM207 channel isolation</td>
<td>P0916AM P0916AP P0916JS</td>
<td>C RL</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>FBM207</td>
<td>16 channel, voltage monitor 240 V ac Logic Zero 0 to 40 V ac Logic One 160 to 280 V ac Input Current for Logic One; 1.6 mA maximum FBM207 channel isolation</td>
<td>P0916PH P0916PJ</td>
<td>C RL</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>FBM207</td>
<td>16 channel, voltage monitor 120 V ac or 125 V dc with external excitation Logic Zero 0 to 20 V ac; 0 to 20 V dc Logic One 80 to 132 V ac; 75 to 150 V dc Input Current for Logic One; 2 mA typical Group isolation provided by termination assembly</td>
<td>P0916PK P0916PL P0917JT</td>
<td>C RL</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>
### Functional Specifications - Termination Assemblies

<table>
<thead>
<tr>
<th>FBM Type</th>
<th>Input Signal</th>
<th>TA Part No.(a)</th>
<th>Termination Type(b)</th>
<th>TA Cable Type(c)</th>
<th>TA Certification Type(d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBM207</td>
<td>16 channel, voltage monitor 240 V ac with external excitation Logic Zero 0 to 40 V ac Logic One 160 to 280 V ac Input Current for Logic One: 1.6 mA maximum Group isolation provided by termination assembly</td>
<td>PVC: P0916PM, PA: P0916PN</td>
<td>C RL</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FBM207b</td>
<td>16 channel, contact sense 24 V dc contact wetting from FBM207b FBM207b channel isolation</td>
<td>PVC: P0916JS, PA: P0916PP</td>
<td>C RL</td>
<td>4</td>
<td>1, 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FBM207c</td>
<td>16 channel, contact sense 48 V dc contact wetting from FBM207c FBM207c channel isolation</td>
<td>PVC: P0917MF, PA: P0917MH</td>
<td>C RL</td>
<td>4</td>
<td>1, 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) PVC (polyvinyl chloride) termination assemblies rated from -20 to +50°C (-4 to 122°F); PA (polyamide) termination assemblies rated from -20 to +70°C (-4 to +158°F).
(b) C= TA with compression terminals, RL = TA with ring lug terminals.
(c) See to Table 2 for cable part numbers and specifications.
(d) See to Table 1 Termination Assembly certification definitions.

*Note: To avoid false tripping of ac type inputs, care should be taken in routing long wiring or bundled runs to minimize coupling from adjacent signals and/or noise from heavy equipment. When possible, dc excitation of input circuits is recommended for runs greater than 305 m (1000 ft).*

<table>
<thead>
<tr>
<th>Type</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>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 CENELEC (DEMKO) certified EEx nA IIC T4 for use in Zone 2 potentially explosive atmospheres.</td>
</tr>
<tr>
<td>Type 2</td>
<td>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 <em>Standard and Compact 200 Series Subsystem User’s Guide</em> (B0400FA). They are also CENELEC (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.</td>
</tr>
</tbody>
</table>
Table 2. P/PVC and Hypalon/XLPE Termination Cable Types and Part Numbers

<table>
<thead>
<tr>
<th>Length (m (ft))</th>
<th>Type 4 P/PVC Cable, 26 AWG&lt;sup&gt;(a)&lt;/sup&gt;</th>
<th>Type 4 LSZH&lt;sup&gt;(b)&lt;/sup&gt;</th>
<th>Type 4 Hypalon/XLPE Cable 26 AWG&lt;sup&gt;(c)&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 (1.6)</td>
<td>P0916FG</td>
<td>P0928BA</td>
<td>P0916WD</td>
</tr>
<tr>
<td>1.0 (3.2)</td>
<td>P0916FH</td>
<td>P0928BB</td>
<td>P0916WE</td>
</tr>
<tr>
<td>2.0 (6.6)</td>
<td>P0931RQ</td>
<td>P0928BC</td>
<td>P0931RU</td>
</tr>
<tr>
<td>3.0 (9.8)</td>
<td>P0916FJ</td>
<td>P0928BD</td>
<td>P0916WF</td>
</tr>
<tr>
<td>5.0 (16.4)</td>
<td>P0916FK</td>
<td>P0928BE</td>
<td>P0916WG</td>
</tr>
<tr>
<td>10.0 (32.8)</td>
<td>P0916FL</td>
<td>P0928BF</td>
<td>P0916WH</td>
</tr>
<tr>
<td>15.0 (49.2)</td>
<td>P0916FM</td>
<td>P0928BG</td>
<td>P0916WJ</td>
</tr>
<tr>
<td>20.0 (65.6)</td>
<td>P0916FN</td>
<td>P0928BH</td>
<td>P0916WK</td>
</tr>
<tr>
<td>25.0 (82.0)</td>
<td>P0916FP</td>
<td>P0928BJ</td>
<td>P0916WL</td>
</tr>
<tr>
<td>30.0 (98.4)</td>
<td>P0916FQ</td>
<td>P0928BK</td>
<td>P0916WM</td>
</tr>
</tbody>
</table>

<sup>(a)</sup> P/PVC cable assemblies polyurethane outer jacket and semi-rigid PVC primary conductor insulation temperature range: -20 to +70°C (-4 to 158°F)

<sup>(b)</sup> 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)

<sup>(c)</sup> H/XLPE cable assemblies Hypalon outer jacket and XLPE (cross-linked polyethylene) primary conductor insulation temperature range: -20 to +70°C (-4 to +158°F). Hypalon cables are no longer available for purchase.
**DIMENSIONS–NOMINAL**

[mm]

Compression Termination Assemblies

P0916AL, P0916XN1, P0916JS, P0916XT1, P0916XP1, P0916PH, P0917MF, P0917MG1

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

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

1Dimensions shown are for the PVC versions. All dimensions for this polyamide termination assembly are smaller.
DIMENSIONS–NOMINAL (CONTINUED)

[mm]  
in

Ring Lug Termination Assemblies

P0916AN, P0916PP, P0916AP, P0917JS1, P0916PJ, P0917JR1, P0917MH, P0917MJ1

P0916PL, P0917JT1, P0916PN

(a) Overall width – for determining DIN rail loading.
(b) Height above DIN rail (add to DIN rail height for total).

1Dimensions shown are for the PVC versions. All dimensions for this polyamide termination assembly are smaller.
## RELATED PRODUCT SPECIFICATION SHEETS (PSS)

<table>
<thead>
<tr>
<th>PSS Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSS 31H-2S200</td>
<td>Standard 200 Series Subsystem Overview</td>
</tr>
<tr>
<td>PSS 31H-2CERTS</td>
<td>Standard and Compact 200 Series I/O - Agency Certification</td>
</tr>
<tr>
<td>PSS 21S-3CP270ICS</td>
<td>Control Processor 270 (CP270) Integrated Control Software</td>
</tr>
</tbody>
</table>