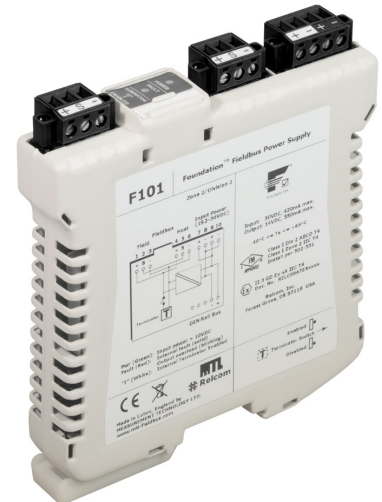


## F101/102

### Low-power fieldbus power supply

- **Fieldbus power for FOUNDATION™ fieldbus H1 cards**
- **Compact design**
- **Fully isolated**
- **Low power dissipation**
- **DIN-rail mounting**
- **Supports bussing of input power in the DIN rail**
- **F101 (21.5V min. at 500mA)**
- **F102 (27.9V min. at 500mA)**



The **F101 and F102 fieldbus power supplies** are designed to provide power for a single FOUNDATION™ fieldbus H1 segment. Galvanic isolation, power conditioning and segment termination are incorporated into each F101 or F102 module. Termination of the fieldbus segments is normally enabled with a switch on the module, but may be switched off for those few applications that do not require a Terminator at the Fieldbus Power Supply.

**For extreme reliability**, the modules use passive components for power conditioning and a reliable DC/DC converter to provide galvanic isolation and power regulation. The connectors used for power input and the Fieldbus are high quality pluggable types with screw retention. Spring-clamp (-PC) and screw-terminal (-PS) connector versions are supported.

**The modules can be powered** from a supply between 19.2 – 30.0 DC. The incoming power can be applied via a top-mounted connector, which supports onward looping of power wiring, or by using a proprietary plug-in connector on a DIN-rail bussing system.

**LED indicators show the status** of the modules. In normal operation, the green Power LED is lit, showing that there is proper input voltage to the module and the red Fault LED is off. If the fieldbus segment is shorted, or in an over-current condition, the Fault LED blinks. An internal module error is indicated by a steady light on the red Fault LED. The status of the internal terminator switch is also indicated by an illuminated 'T' symbol.

**F101 and F102 modules provide galvanic isolation** between the input power and the fieldbus segments, as required by the IEC61158-2 fieldbus standard and the Fieldbus Foundation™ FF-831 validation test for fieldbus power supplies.

**The F101 is specifically intended** for use in applications that require live-workable, energy-limited spurs in Zone 2 or Division 2 hazardous areas where the field devices are certified Ex nL or Ex i with  $U_i \leq 24V$ .

**The F102 has a high output voltage** and should be specified for applications requiring heavily loaded segments and/or long cable lengths.

*FOUNDATION™ fieldbus is a trademark of Fieldbus Foundation™, Austin, Texas.*



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SPECIFICATION

**Location of equipment**  
Safe Area, Class I Div 2 Groups ABCD T4, or  
Class I Zone 2 IIC T4 hazardous area  
IEC Zone 2 IIC T4

INPUT

**Input voltage**  
19.2 – 30.0V DC  
**Reverse polarity protection**  
Yes  
**Current consumption**  
see Input Current graph  
**Power dissipation**  
see Power Dissipation graph

*Note: modules are capable of operating at full load without spacing*

OUTPUT

**Number of Channels**  
One (1)  
**Voltage**  
F101: 21.5 – 24.0V DC  
F102: 27.9 – 30.0V DC  
**Design Current**  
0 to 500mA per segment  
**Segment Current Limit**  
> 550mA  
**Minimum Load**  
0mA

**Isolation**  
Fieldbus to input power: Tested at 500V ACrms in accordance with FF-831

ELECTRICAL CONNECTIONS

**Fieldbus wiring (host and field)**  
Screw-secured, 3-way pluggable connectors in screw terminal or spring clamp version, 0.14 to 2.5mm<sup>2</sup>  
**Power input**  
Screw-secured, 4-way pluggable connector in screw terminal or spring clamp version, 0.14 to 2.5mm<sup>2</sup> (see diagram)  
**DIN-rail power bussing option**  
Proprietary connection system - see Ordering Information  
**Fieldbus terminator**  
100W, switchable

MECHANICAL

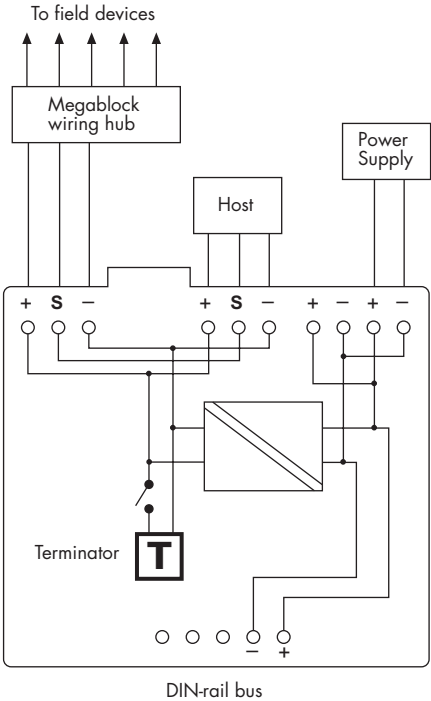
**Mounting method**  
Integrated fixings for vertical ‘Top hat’ DIN-rail, 35mm x 7.5mm to EN50022  
**Housing material**  
Polycarbonate  
**Tagging strip**  
To accept paper legend

ENVIRONMENTAL

**Ambient temperature**  
Operating: –40°C to +65°C\* (at maximum rated output)  
–40°C to +70°C\* (at 400mA output)  
Storage: –40°C to +85°C  
\* fitted on horizontal DIN-rail mounted on a vertical plane  
**Relative humidity**  
<95%, non-condensing  
**Ingress protection**  
IP20 to BS EN60529 (Additional protection by means of enclosure)

F101/102 - BLOCK DIAGRAM

(showing interconnection scheme)



The above diagram shows a basic illustration of how the F101 or 102 is wired. For detailed wiring information, see the installation instructions.

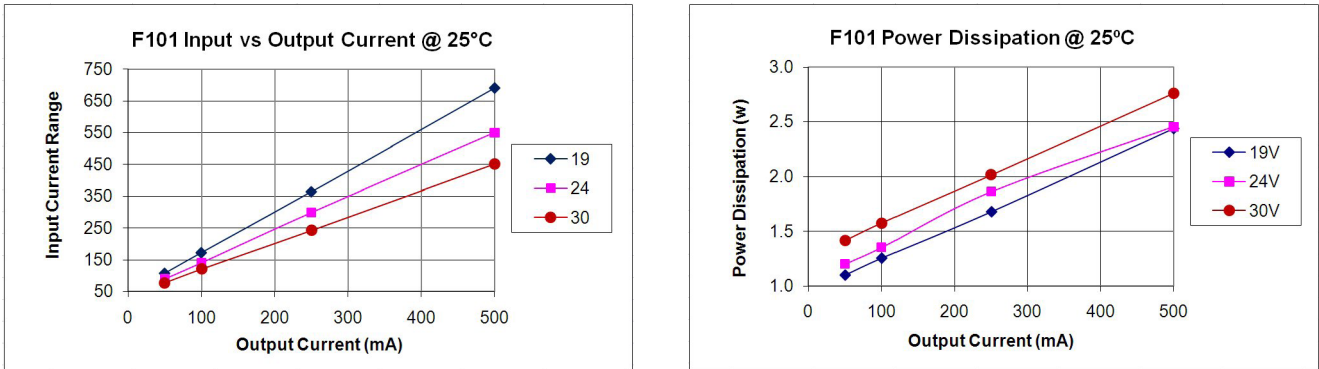
PHYSICAL NETWORKS

IEC61158-2  
ISA-S50.02 Part 2-1992  
FOUNDATION™ fieldbus H1  
Profibus PA

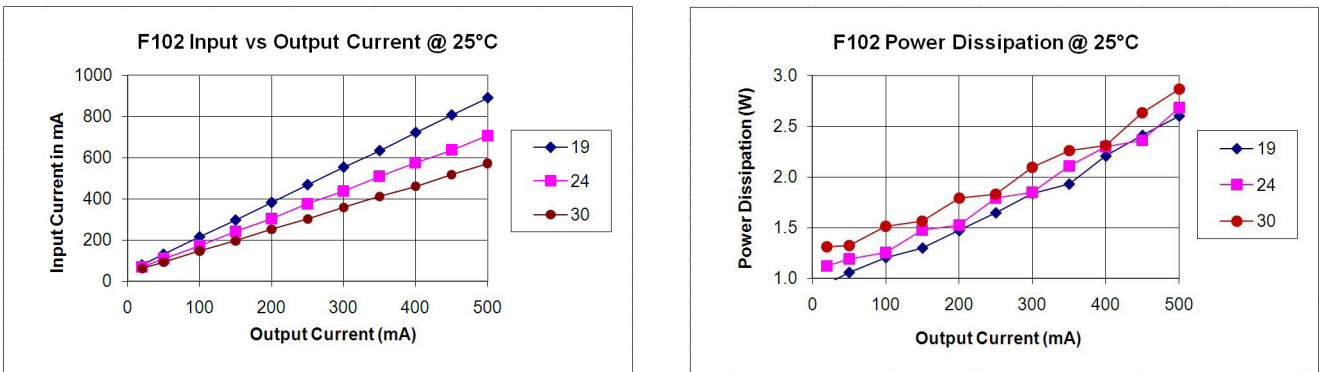
LED INDICATORS

	OFF	ON	Flashing
<b>Power (green)</b>	Power fail or internal fault	Power OK	—
<b>Fault (red)</b>	Normal	Internal error, replace module	Output current limit exceeded
<b>Terminator (white 'T')</b>	Terminator disabled	Terminator enabled	—

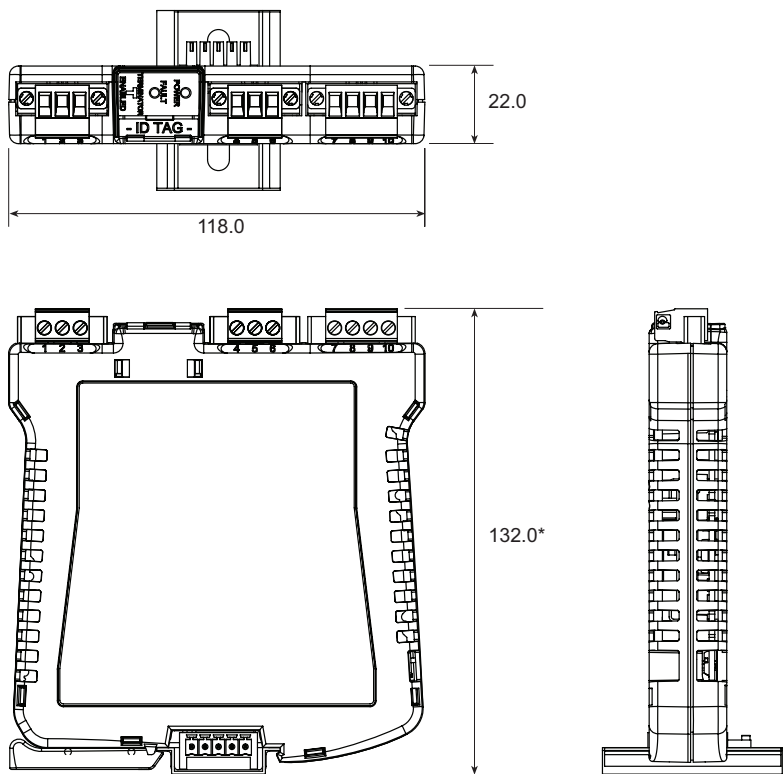
F101 PARAMETERS (typical)



F102 PARAMETERS (typical)



F101/102 DIMENSIONS (mm) (shown with screw-clamp connectors)

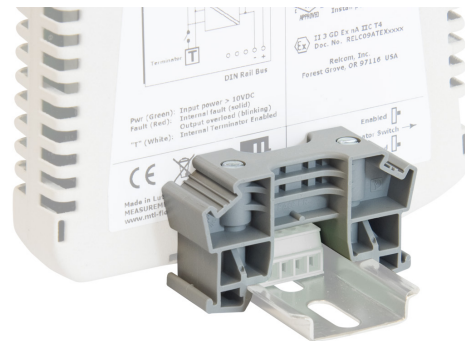
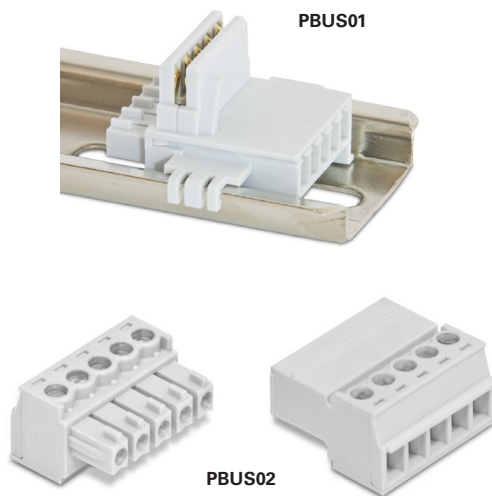


\* + 5mm with spring clamp connectors

## ORDERING INFORMATION

PART No.	Description
F101-PS	Fieldbus Power Supply (21.5V min., 500mA) pluggable screw-terminal connectors
F101-PC	Fieldbus Power Supply (21.5V min., 500mA) pluggable spring-clamp connectors
F102-PS	Fieldbus Power Supply (27.9V min., 500mA) pluggable screw-terminal connectors
F102-PC	Fieldbus Power Supply (27.9V min., 500mA) pluggable spring-clamp connectors

PART No.	Description
PBUS01	Power Bus DIN-rail connectors, pack of 5
PBUS02	Power Bus DIN-rail input plug and socket set
PBUS03	DIN-rail mounted strain relief clamps, pack of 2

APPROVALS - for the latest certification information visit [www.mtl-inst.com/certificates](http://www.mtl-inst.com/certificates)

Region (Authority)	Standard	Certificate	Approved for	Ratings
EU (Relcom)	EN61326-1		Class A Industrial Locations	CE
(Fieldbus Foundation™)	FF-831	PS072902	—	Power Supply Type 132
US (FM)	3600 3611 3810	3035979	Class I, Div 2, ABCD, T4 Class I, Zone 2, IIC, T4	NI/I/2/ABCD/T4 Ta=65°C (Full load) Ta=70°C (Load ≤400mA) I/2/IIC/T4 Ta=65°C (Full load) Ta=70°C (Load ≤400mA)
Canada (FM)	CAN/CSA - E60079-15 C22.2 No. 213 C22.2 No. 1010.1	3035979C	Class I, Div 2, ABCD, T4 Class I, Zone 2, IIC, T4	NI/I/2/ABCD/T4 Ta=65°C (Full load) Ta=70°C (Load ≤400mA) I/2/IIC/T4 Ta=65°C (Full load) Ta=70°C (Load ≤400mA)
ATEX (Relcom)	EN 60079-0 EN 60079-15	RELC09ATEX1008X	Zone 2 IIC T4	Ex II 3 G Ex nA IIC T4 Gc
UKCA (Relcom)	EN 60079-0 EN 60079-15	RELC21UKEX1013X	Zone 2 IIC T4	Ex II 3 G Ex nA IIC T4 Gc



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