



isolated power supply for
fieldbus systems

MTL5995



- ◆ Straightforward 'clip-on' DIN-rail mounting
- ◆ Low cost per fieldbus segment
- ◆ High packing densities
- ◆ Simplified installation and maintenance using plug-in connectors

The **MTL5995** is a general purpose power supply unit designed for use in 31.25kbit/s (H1) fieldbus systems. It complies with the requirements of Fieldbus Foundation™ power supply Type 131† (non-IS supply intended for feeding an IS barrier).

To comply with fieldbus standards, each bus must be terminated at both ends. MTL's FBT1-IS, F100 or FCS-MBT fieldbus terminators can be supplied for this purpose; or its switch-enabled, internal terminator can be used for installations in which an MTL5995 is located at one end of the fieldbus trunk.

When designing a fieldbus segment the total current consumption of the fieldbus devices should be calculated for normal operation. This should be within the range of the published design current for the power supply.

For the MTL5995 power supply, the current limit is at least 20mA higher than the maximum design current. This provides a margin for inrush current when a new device is added to the network. Therefore, with a fieldbus loaded with its maximum design current, a fieldbus device can be disconnected and reconnected without the risk that other devices on the bus will reset.

The MTL5995 clips quickly onto DIN rail, so it is compatible with the industry-standard mounting system. Wiring is simplified by a single, secured, plug-in fieldbus connector (MTL5995-PS), or a pair of plug-in fieldbus connectors (MTL5995) and a power plug which accepts a power bus; all leading to quicker insertion, fewer wiring errors and trouble-free, tidier installations.

† The applicable fieldbus specifications and standards are: Foundation™ Fieldbus 31.25kbit/s Physical Layer Profile Specification, document FF-816, IEC 61158-2: 1993 and ISA-S50.02-1992 for 31.25kbit/s fieldbus systems.



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MTL5995 FIELDBUS POWER SUPPLY

31.25kbit/s fieldbus



The MTL5995 provides a pair of plug-in fieldbus connections. The MTL5995-PS is recommended for new fieldbus installations.

SPECIFICATION

OUTPUT

Voltage

19V±2%
<2Ω dc impedance

Design current

0 to 350mA,

Current limit

>370mA

Output ripple

Complies with clause 22.6.2 of the fieldbus standards† for output current >10mA.

Internal termination

Selected by a switch in the base of the unit.

INPUT

Supply voltage

20 to 30V dc -20°C to +60°C

Power requirement, with 350mA output load

420mA typical at 24V
370mA typical at 30V
520mA typical at 20V

Power dissipation within unit, with 350mA output load

3.4W typical at 24V
4.5W maximum at 30V

Note: To allow adequate heat dissipation under all likely thermal conditions, it is recommended that the MTL5995-PS is installed on DIN-rail with 10mm clearance from any adjacent unit. 10mm DIN-rail module spacers (part no. MS010) are available from MTL for this purpose.

LED indicator

Green: one provided for power indication

Isolation

250V rms between fieldbus and power supply terminals

Location of units

Safe area

Terminals

Accommodate conductors with cross-section of 0.14 to 2.5mm², stranded or single-core

Mounting

On 35mm (top hat) rail to EN 50022-35 x 7.5; BS 5584;
35 x 27 x 7.3 DIN 46277

Ambient temperature limits

-20 to +60°C (-6°F to +140°F) operating
-40 to +80°C (-40°F to +176°F) storage

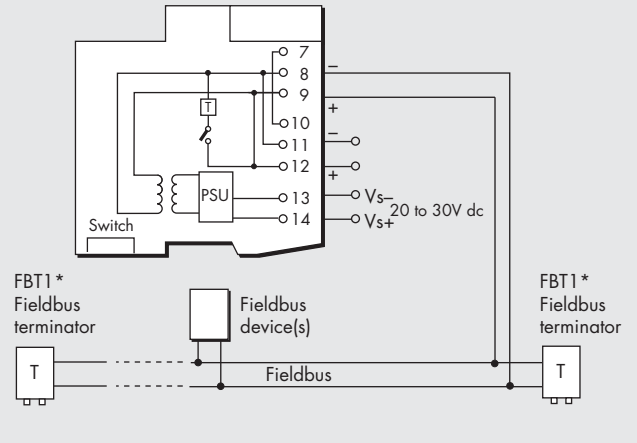
Humidity

5 to 95% relative humidity

Weight

110g approx

Safe or Division 2/Zone 2 hazardous area



Terminal	Function
7	Internally linked to 10
8 & 11	Fieldbus device(s) connection -ve
9 & 12	Fieldbus device(s) connection +ve
10	Internally linked to 7
13	Supply -ve
14	Supply +ve

Note: Terminals 7 and 10 are linked internally to assist in the process of terminating cable screens.

SAFETY

Location of module

Safe area, Zone 2, IIC T4 hazardous area or Class 1, Div 2, Groups A, B, C, D T4 hazardous location.

Location of field wiring

Safe area, Zone 2, IIC T4 hazardous area or Class 1, Div 2, Groups A, B, C, D T4 hazardous area.

Field wiring protection

Normally non-arcing/Ex nA

CERTIFICATION

EUROPE (ATEX)

EN 50021 Ex II 3 G Ex nA IIC T4

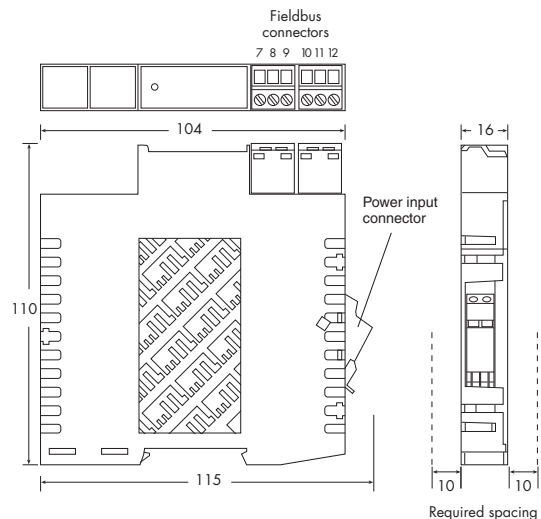
USA (FM)

Class No.3611 Class1, Div 2 Grps A-D

CANADA (CSA)

C22.2 No.213 Class1, Div 2 Grps A-D; Ex nA IIC T4

DIMENSIONS



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MTL5995-PS FIELDBUS POWER SUPPLY

31.25kbit/s fieldbus



The MTL5995-PS provides a single, secured, plug-in fieldbus connection and is recommended for new fieldbus installations.

SPECIFICATION

OUTPUT

Voltage

19V±2%
<2Ω dc impedance

Design current

0 to 350mA,

Current limit

>370mA

Output ripple

Complies with clause 22.6.2 of the fieldbus standards† for output current >10mA.

Internal termination

Selected by a switch in the base of the unit.

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LED indicator

Green: one provided for power indication

Isolation

250V rms between fieldbus and power supply terminals

Location of units

Safe area

Terminals

Accommodate conductors with cross-section of 0.14 to 1.5mm², stranded or single-core

Mounting

On 35mm (top hat) rail to EN 50022-35 x 7.5; BS 5584;

35 x 27 x 7.3 DIN 46277

Ambient temperature limits

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-40 to +80°C (-40°F to +176°F) storage

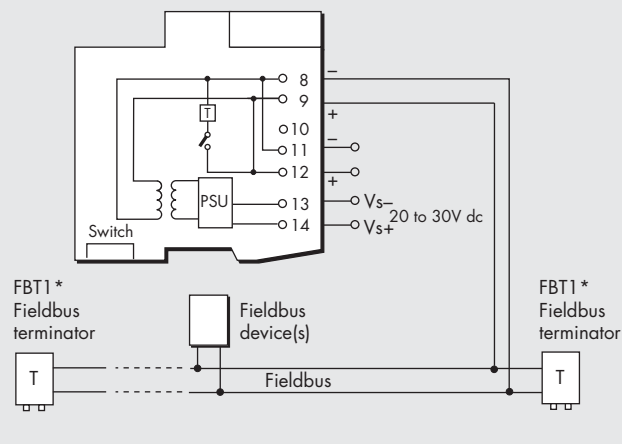
Humidity

5 to 95% relative humidity

Weight

110g approx

Safe or Division 2/Zone 2 hazardous area



Terminal	Function
8 & 11	Fieldbus device(s) connection -ve
9 & 12	Fieldbus device(s) connection +ve
10	Terminal for interconnecting cable screens
13	Supply -ve
14	Supply +ve

SAFETY

Location of module

Safe area, Zone 2, IIC T4 hazardous area

Location of field wiring

Safe area, Zone 2, IIC T4 hazardous area

Field wiring protection

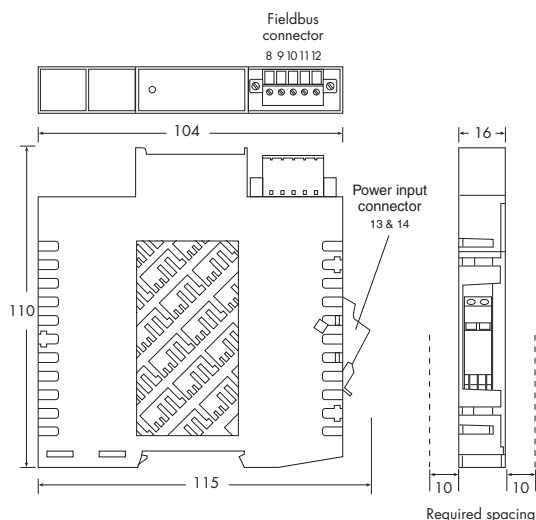
Normally non-arcing/Ex nA

CERTIFICATION

EUROPE (ATEX)

IEC 60079-15 Ex II 3 G Ex nA IIC T4

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