

## MTL 9491-PS

### 12V DC Intrinsically Safe Power Supply

- **Isolated power supply**
- **Zone 2 & Division 2 mountable**
- **DIN-rail or backplane mounting**
- **ATEX / IECEx certified**
- **FM / FMC approved**
- **200mA @ 10.9V DC - Ex ia IIB Groups C, D output**
- **400mA @ 11.8V DC - Ex ib IIB output**
- **Power over Ethernet option**
- **Multiple outputs achieved by ganging 9491-PS modules using 24V DC power distribution backplane**



**The 9491-PS Power Supply** is the preferred method for supplying the 9460-ET range of intrinsically safe Ethernet modules and is based on an isolating power supply. It takes a 24V DC safe area / Zone 2 / Division 2 supply and produces an intrinsically safe, 12V DC nominal output capable of powering the Ethernet modules mounted in a Zone 1/ Division 1 hazardous area. The 9491-PS may be mounted in a safe area, Zone 2 or Division 2 hazardous area.

Each 9491-PS can power a single Ethernet module. In order to provide multiple outputs required for several Ethernet modules, the 9491-PS power supply module is ganged up to the required number of ways, either DIN-rail mounted or using the power distribution backplane to simplify the 24VDC input connection to the modules.

**The 9491-PS module has LED power indication** for both input and output along with internal current limiting and electronic auto-reset circuit breaker action to protect the module in the event of its output being short circuited or overloaded. This also minimises the power dissipation during the fault to a negligible level, thus improving reliability.

The output can be from either the Ex ia IIB Group C, D or Ex ib IIB output connectors depending upon application. The 'ib' IIB output provides a higher useable output power where the Gas Group and Zone allows.

# 12V DC intrinsically safe power supply

October 2016

## SPECIFICATION

See also System Specification

### POWER INPUT

#### Separately powered

#### Input voltage

24V DC (20–30V)

#### Input current

350mA

#### Input protection

Fuse + supply reversal diode

#### Connectors (see dimension drawing)

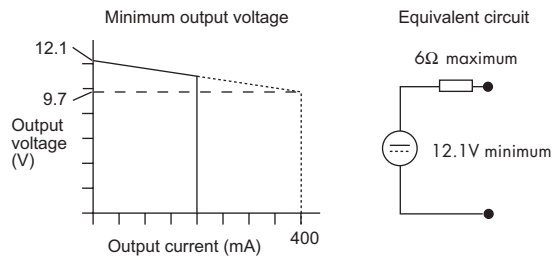
DIN rail mounting: screw terminals – capacity 2.5mm<sup>2</sup> stranded or single core

Backplane mounting: multipin connector

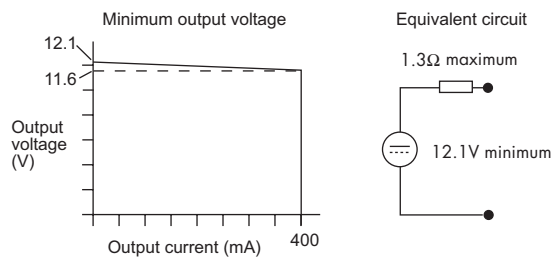
### POWER OUTPUT

[Ex ia] output (pins 1 & 3)

Graph shows normal working range & total available range



[Ex ib] output (pins 5 & 6)



### Connectors

9491-PS is supplied with two IS output connectors. Capacity 2.5mm<sup>2</sup> stranded or single core (When using crimp ferrules for the IS connectors the metal tube length should be 12mm and the wire trim length 14mm.)

### ISOLATION

#### Isolation - input to output

Um = 253V rms

### SAFETY

#### Location of module

Safe area, Zone 2, Division 2

#### Location of field wiring

[Ex ia] output

Zone 0, IIB hazardous area or Class 1, Div 1, Groups C, D hazardous location

[Ex ib] output

Zone 1, IIB hazardous area

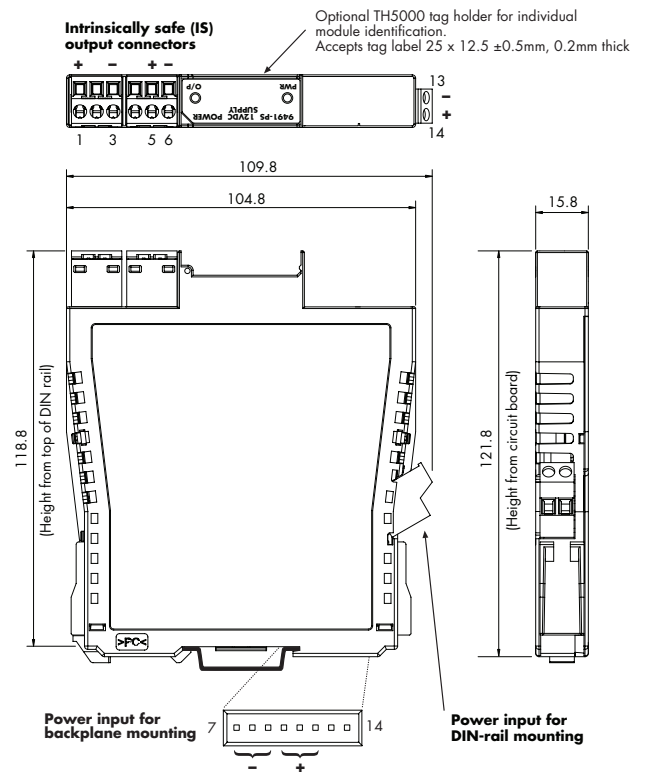
#### Certification Code

See approvals

#### Safety description

See certificate

## DIMENSIONS (mm)



## MECHANICAL

### Mounting

DIN rail or power distribution backplane

### Dimensions

See diagram

### Weight

130 g

## ENVIRONMENTAL

### Ambient temp

Operating 0°C to +70°C

Storage -20°C to +70°C

### Relative Humidity

5 to 95% RH (non-condensing)

### Ingress Protection

Select enclosure to suit application, see certificate for information

## LED INDICATORS

	OFF	Flash	ON
<b>Pwr (green)</b>	24V power fail	N/A	24V power OK
<b>IS (green)</b>	IS power fail	output overload or short circuit present	IS power OK



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# MTL 9492-PS-PLUS

## 12V DC intrinsically safe power supply

- Isolated power supply
- Zone 2 mountable
- DIN-rail or backplane mounting
- ATEX / IECEx certified
- 480mA @ 10.00V DC - Ex ia IIB
- 550mA @ 11.90V DC - Ex ib IIB output
- Power over Ethernet option
- Multiple outputs achieved by ganging 9492-PS-PLUS modules using 24V DC power distribution backplane
- Wide operating temperature  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$



The MTL 9492-PS-PLUS power supply is the preferred method for supplying the 9460-ET series of intrinsically safe ethernet modules and is based on an isolating power supply. It takes a 24V DC safe area / Zone 2 supply and produces an intrinsically safe, 12V DC nominal output capable of powering the ethernet modules mounted in a Zone 1 hazardous area. The 9492-PS-PLUS may be mounted in a safe area or Zone 2 hazardous area.

Each 9492-PS-PLUS can power a single ethernet module. In order to provide multiple outputs required for several ethernet modules, the 9492-PS-PLUS power supply module is ganged up to the required number of ways, either DIN-rail mounted or using the power distribution backplane to simplify the 24VDC input connection to the modules.

The 9492-PS-PLUS module has LED power indication for both input and output along with internal current limiting and electronic auto-reset circuit breaker action to protect the module in the event of its output being short circuited or overloaded. This also minimises the power dissipation during the fault to a negligible level, thus improving reliability.

The output can be from either the Ex ia IIB or Ex ib IIB output connectors depending upon application. The 'ib' IIB output provides a higher useable output power where the Gas Group and Zone allows.

# 12V DC intrinsically safe power supply

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## SPECIFICATION

See also System Specification

### POWER INPUT

Separately powered

#### Input voltage

24V DC (20–30V)

#### Input current

390mA

### Input protection

Fuse + supply reversal diode

### Connectors (see dimension drawing)

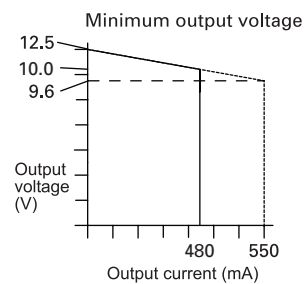
DIN rail mounting: screw terminals – capacity 2.5mm<sup>2</sup> stranded or single core

Backplane mounting: multipin connector

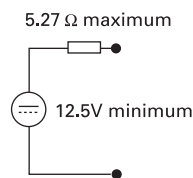
### POWER OUTPUT

#### [Ex ia] output (pins 1 & 3)

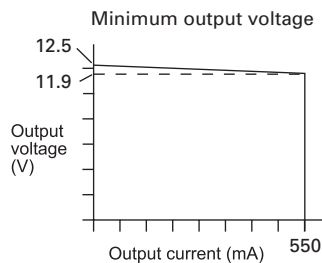
Graph shows normal working range & total available range



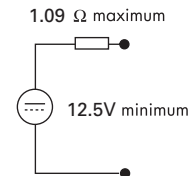
#### Equivalent circuit



#### [Ex ib] output (pins 5 & 6)



#### Equivalent circuit



### Connectors

9492-PS-PLUS is supplied with two IS output connectors.

Capacity 2.5mm<sup>2</sup> stranded or single core

(When using crimp ferrules for the IS connectors the metal tube length should be 12mm and the wire trim length 14mm.)

### ISOLATION

Isolation - input to output

Um = 253V rms

### SAFETY

#### Location of module

Safe area, Zone 2

#### Location of field wiring

##### [Ex ia] output

Zone 0, IIB hazardous area

##### [Ex ib] output

Zone 1, IIB hazardous area



Powering Business Worldwide

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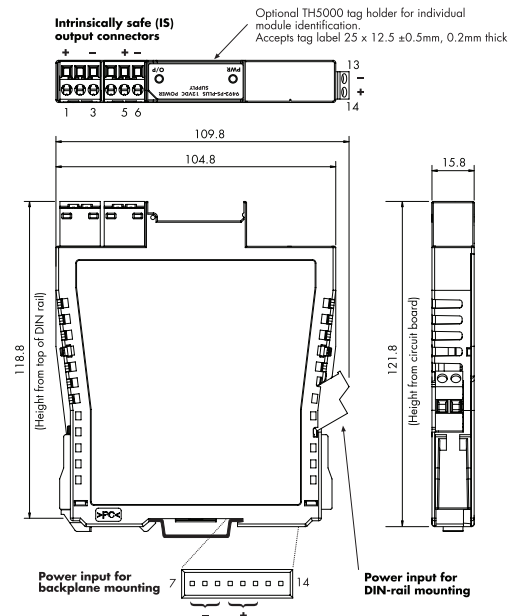
### Certification Code

See approvals

### Safety description

See certificate

## DIMENSIONS (mm)



## MECHANICAL

### Mounting

DIN rail

Please contact Eaton MTL product line for 'backplane' option

### Dimensions

See diagram

### Weight

130 g

## ENVIRONMENTAL

### Ambient temp

Operating –40°C to +70°C

Storage –40°C to +70°C

### Relative Humidity

5 to 95% RH (non-condensing)

### Ingress Protection

Select enclosure to suit application, see certificate for information

## LED INDICATORS

	OFF	Flash	ON
Pwr (green)	24V power fail	N/A	24V power OK
IS (green)	IS power fail	output overload or short circuit present	IS power OK

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# MTL 9493-PS-XXX

## Intrinsically safe power supply

- Isolated power supply
- Zone 2 mountable
- DIN-rail or backplane mounting
- ATEX / IECEx certified
- Range of Ex ia output voltages available
- Power over Ethernet option
- Multiple outputs achieved by ganging 9493-PS-XXX modules using 24V DC power distribution backplane



**The 9493-PS-XXX Power Supply is a general purpose Intrinsically Safe power supply unit.** It takes a 24V DC safe area or Zone 2 supply and produces an Intrinsically Safe output available in a range of different DC voltages. The 9493-PS-XXX may be mounted in a safe area or Zone 2 hazardous area.

**In order to provide multiple outputs as required, the 9493-PS-XXX power supply module is ganged up to the required number of ways,** either DIN-rail mounted or using the power distribution backplane to simplify the 24VDC input connection to the modules.

**The 9493-PS-XXX power supply module has LED power indication** for both input and output along with internal current limiting and electronic auto-reset circuit breaker action to protect the module in the event of its output being short-circuited or overloaded.

This also minimizes the power dissipation during the fault to a negligible level, thus improving reliability.

**The output is Ex ia certified for Group I, IIA, IIB or IIC,** depending on model to suit different applications.

# 9493-PS-XXX

## Intrinsically safe power supply

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### SPECIFICATION

See also System Specification

#### 9493-PS-B5

##### Power input

##### Input Voltage

24V DC (20-30V)

##### Input Current @ 24V

83mA

##### Power output

##### [Ex ia IIB] Output (pins 1 & 3)

Nominal Output Voltage

4.8V ... 5.2V

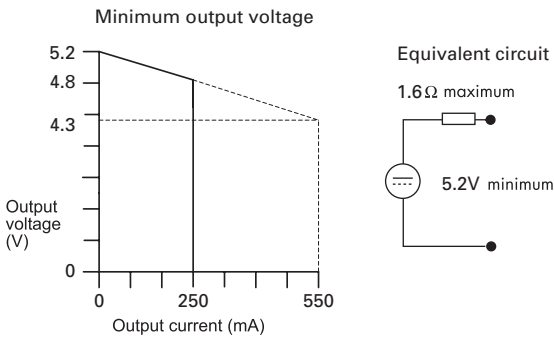
Nominal Output Current

250mA (Max 550mA)

##### U<sub>o</sub>

5.4V

Graph shows normal working range & total available range



#### 9493-PS-C6

##### Power input

##### Input Voltage

24V DC (20-30V)

##### Input Current @ 24V

122mA

##### Power output

##### [Ex ia IIC] Output (pins 1 & 3)

Nominal Output Voltage

5.7V ... 6.7V

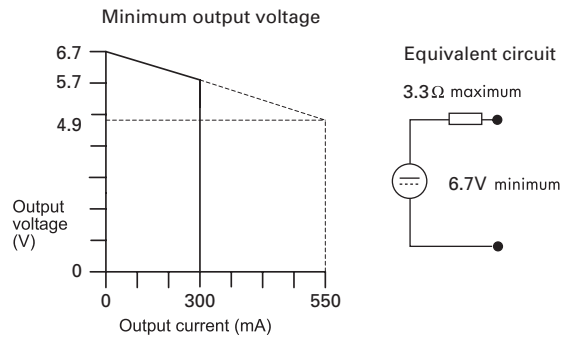
Nominal Output Current

300mA (Max 550mA)

##### U<sub>o</sub>

7V

Graph shows normal working range & total available range



#### 9493-PS-C5

##### Power input

##### Input Voltage

24V DC (20-30V)

##### Input Current @ 24V

61mA

##### Power output

##### [Ex ia IIC] Output (pins 1 & 3)

Nominal Output Voltage

4.8V ... 5.2V

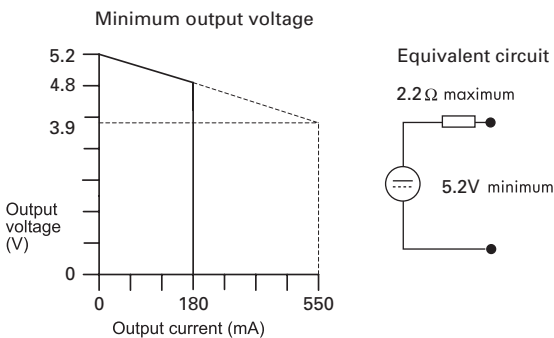
Nominal Output Current

180mA (Max 550mA)

##### U<sub>o</sub>

5.4V

Graph shows normal working range & total available range



#### 9493-PS-C9

##### Power input

##### Input Voltage

24V DC (20-30V)

##### Input Current @ 24V

165mA

##### Power output

##### [Ex ia IIC] Output (pins 1 & 3)

Nominal Output Voltage

8.4V ... 9.7V

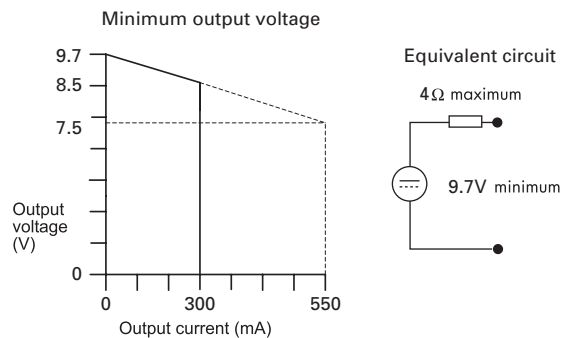
Nominal Output Current

300mA (Max 550mA)

##### U<sub>o</sub>

10V

Graph shows normal working range & total available range



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Intrinsically safe power supply

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**SPECIFICATION (continued)**

See also System Specification

**9493-PS-C11**

**Power input**

**Input Voltage**

24V DC (20-30V)

**Input Current @ 24V**

196mA

**Power output**

**[Ex ia IIC] Output (pins 1 & 3)**

Nominal Output Voltage

9.9V ... 11.7V

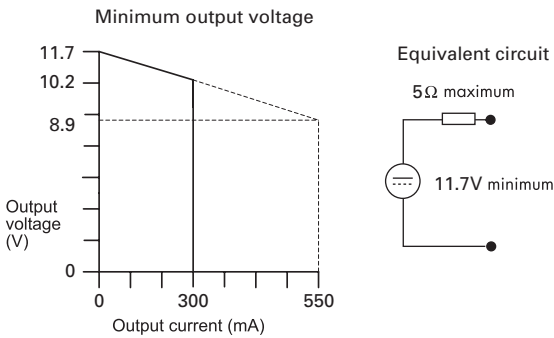
Nominal Output Current

300mA (Max 550mA)

**U<sub>o</sub>**

12V

Graph shows normal working range & total available range



**9493-PS-B14**

**Power input**

**Input Voltage**

24V DC (20-30V)

**Input Current @ 24V**

201mA

**Power output**

**[Ex ia IIB] Output (pins 1 & 3)**

Nominal Output Voltage

12.4V ... 14.7V

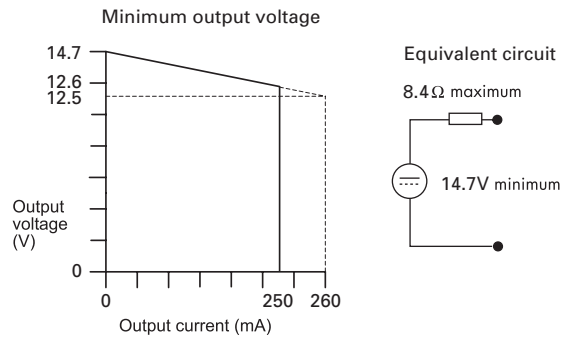
Nominal Output Current

250mA (Max 260mA)

**U<sub>o</sub>**

15V

Graph shows normal working range & total available range



**9493-PS-C12**

**Power input**

**Input Voltage**

24V DC (20-30V)

**Input Current @ 24V**

175mA

**Power output**

**[Ex ia IIC] Output (pins 1 & 3)**

Nominal Output Voltage

10.8V ... 12.7V

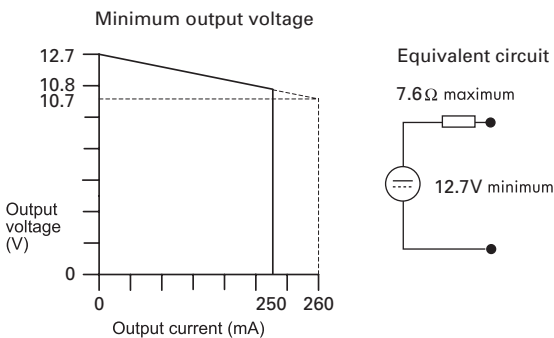
Nominal Output Current

250mA (Max 260mA)

**U<sub>o</sub>**

13V

Graph shows normal working range & total available range



**9493-PS-C14**

**Power input**

**Input Voltage**

24V DC (20-30V)

**Input Current @ 24V**

104mA

**Power output**

**[Ex ia IIC] Output (pins 1 & 3)**

Nominal Output Voltage

12.4V ... 14.7V

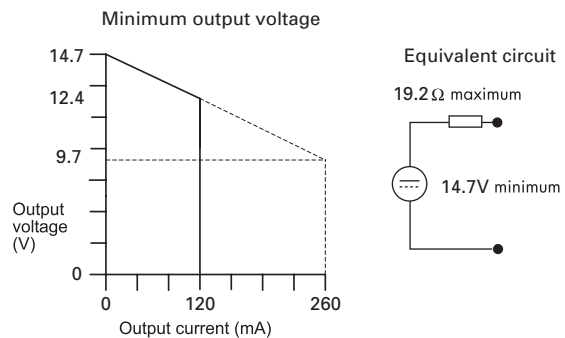
Nominal Output Current

120mA (Max 260mA)

**U<sub>o</sub>**

15V

Graph shows normal working range & total available range



9493-PS-XXX  
Intrinsically safe power supply

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**SPECIFICATION (continued)**

See also System Specification

**9493-PS-B17**

**Power input**

**Input Voltage**

24V DC (20-30V)

**Input Current @ 24V**

163mA

**Power output**

**[Ex ia IIB] Output (pins 1 & 3)**

Nominal Output Voltage

15.0V ... 17.7V

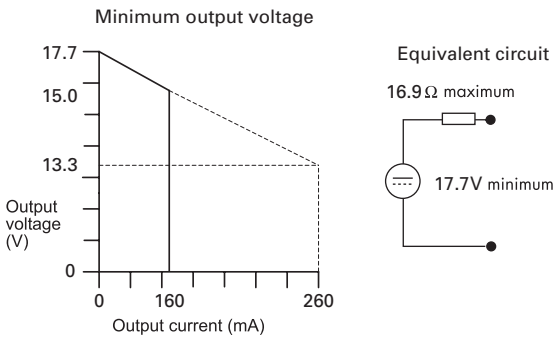
Nominal Output Current

160mA (Max 260mA)

**U<sub>o</sub>**

18V

Graph shows normal working range & total available range



**Standard stock range**

P/N	Gas Group	U <sub>o</sub>	Nominal output voltage	Nominal output current
9493-PS-C5	IIC	5.4V	4.8V ... 5.2V	180mA
9493-PS-B5	IIB	5.4V	4.8V ... 5.2V	250mA
9493-PS-C6	IIC	7V	5.7V ... 6.7V	300mA
9493-PS-C9	IIC	10V	8.4V ... 9.7V	300mA
9493-PS-C11	IIC	12V	9.9V ... 11.7V	300mA
9493-PS-C12	IIC	13V	10.8V ... 12.7V	250mA
9493-PS-C14	IIC	15V	12.4V ... 14.7V	120mA
9493-PS-B14	IIB	15V	12.4V ... 14.7V	250mA
9493-PS-C17	IIC	18V	15.0V ... 17.7V	60mA
9493-PS-B17	IIB	18V	15.0V ... 17.7V	160mA

**NOTE:** More variants outside the Standard Stock Range can be ordered, subject to an MOQ. Please contact MTL product line for further details.

**9493-PS-C17**

**Power input**

**Input Voltage**

24V DC (20-30V)

**Input Current @ 24V**

74mA

**Power output**

**[Ex ia IIC] Output (pins 1 & 3)**

Nominal Output Voltage

15.0V ... 17.7V

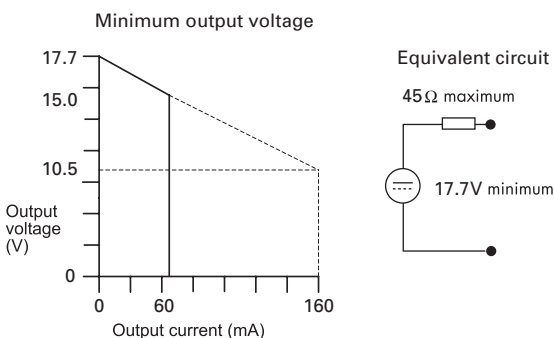
Nominal Output Current

60mA (Max 160mA)

**U<sub>o</sub>**

18V

Graph shows normal working range & total available range





# 9493-PS-XXX

## Intrinsically safe power supply

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### SPECIFICATION (continued)

#### Connectors

9493-PS-XXX is supplied with one IS output connectors.  
Capacity 2.5mm<sup>2</sup> stranded or single core  
(When using crimp ferrules for the IS connectors the metal tube length should be 12mm and the wire trim length 14mm.)

#### ISOLATION

Isolation - input to output  
Um = 253V rms

#### SAFETY

##### Location of module

Safe area, Zone 2

##### Location of field wiring

###### [Ex ia] output

Zone 0, (Gas group depends on model type)  
Model 9493-PS-CXX, IIC Hazardous area  
Model 9493-PS-BXX, IIB Hazardous area  
Model 9493-PS-AXX, IIA Hazardous area  
Model 9493-PS-MXX, Group 1 Mining

##### Certification Code

See approvals

##### Safety description

See certificate

### DIMENSIONS (mm)

#### MECHANICAL

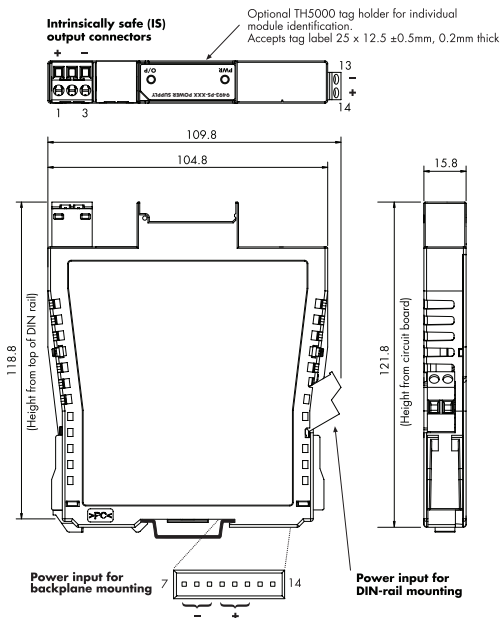
##### Mounting

DIN rail

Please contact Eaton MTL product line for 'backplane' option

##### Dimensions

See diagram



#### Weight

130 g

#### ENVIRONMENTAL

##### Ambient temp

Operating -40°C to +70°C  
Storage -40°C to +70°C

##### Relative Humidity

5 to 95% RH (non-condensing)

##### Ingress Protection

Select enclosure to suit application, see certificate for information

#### LED INDICATORS

	OFF	Flash	ON
Pwr (green)	24V power fail	N/A	24V power OK
IS (green)	IS power fail	output overload or short circuit present	IS power OK



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