



PD 781 Ex Operator Interface

FEATURES

- Ex version of PD 681 Operator Interface
- Backlit Graphics 33x200 pixels LCD Display
- 28 Key Membrane click-switch Keyboard
- Red and Green LED indicators
- Acoustic Alarm
- Digital I/O Channel
- P-NET communication via RS485
- P-NET communication via Light-Link
- Panel mounting Sealed to IP65
- See PD 681 Data for more information

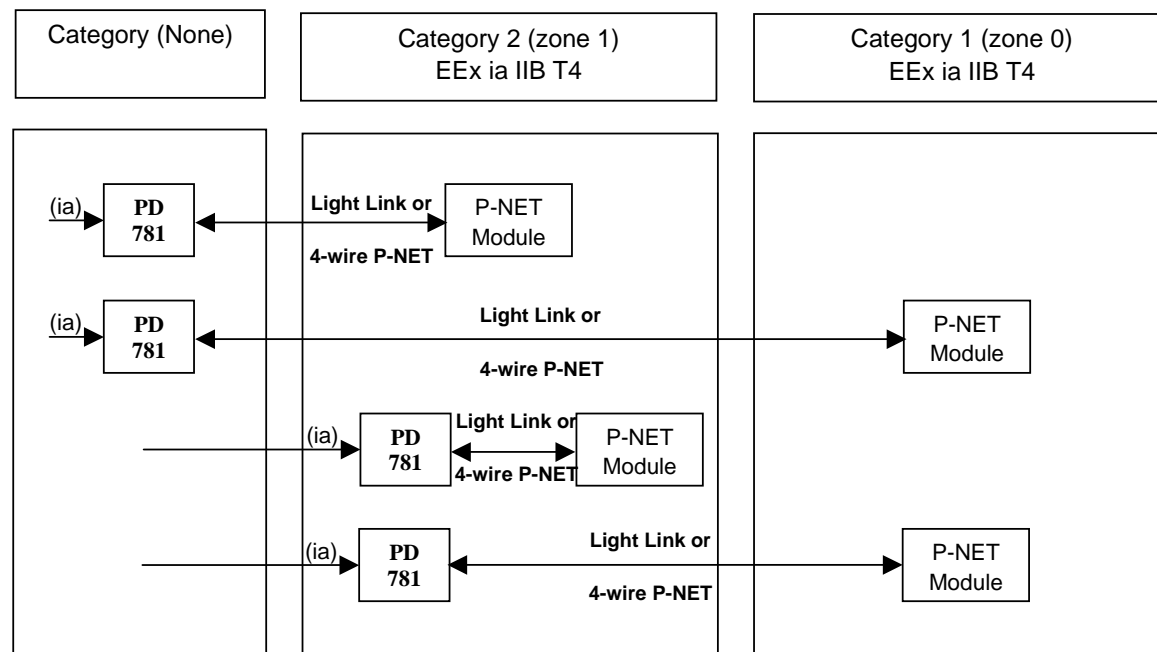


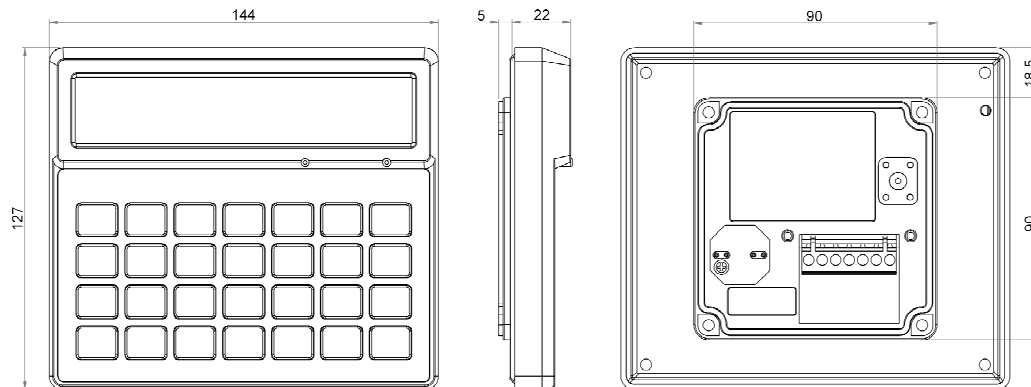
APPLICATION

The PD 781 is a P-NET slave module, which is designed as an input and display module for Ex environments.

The module is EEx ia IIB T4 approved for category 2.

Installation guide showing approved configurations:



Scale drawing (in mm):

Case: Black Noryl GFN3, **Display:** Non-reflecting Glass, **Keyboard Overlay:** Polyester

Specifications:**Power Supply**

Nominal input voltage	$U_{nom} = 12 \text{ V}$
Minimum input voltage	$U_{min} = 10 \text{ V}$

Ex-Data:

Maximum input voltage	$U_i = 13.9 \text{ V}$	Input inductance	$L_i = 10 \mu\text{H}$
Maximum input current	$I_i = 470 \text{ mA}$	Input capacitance	$C_i = 1350 \text{ nF}$
Maximum input power	$P_i = 2.8 \text{ W}$		

Ambient temperature:

Operation	-25°C to $+65^\circ\text{C}$
Storage	-25°C to $+70^\circ\text{C}$

Approvals:

EEx ia IIB T4

PTB 05 ATEX 2042

Ex:

PD 781 is approved in compliance with the **Ex standard EN50020** (EEx ia IIB T4).

EMC:

PD 781 is approved in compliance with the **EMC-directive no 89/336/EEC**.

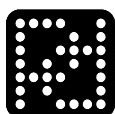
Test limits are determined by the generic standards:

EN 61000-6-3:2001 and **EN 61000-6-4:2001** for emission

EN 61000-6-1:2001 and **EN 61000-6-2:1999** for immunity.

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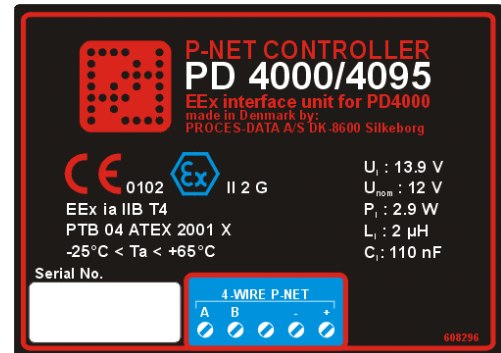
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User manual for PD 4000/4095 EEx P-NET Controller

FEATURES:

- Voltage supplied through intrinsically safe connection
- P-NET communication via intrinsically safe connection

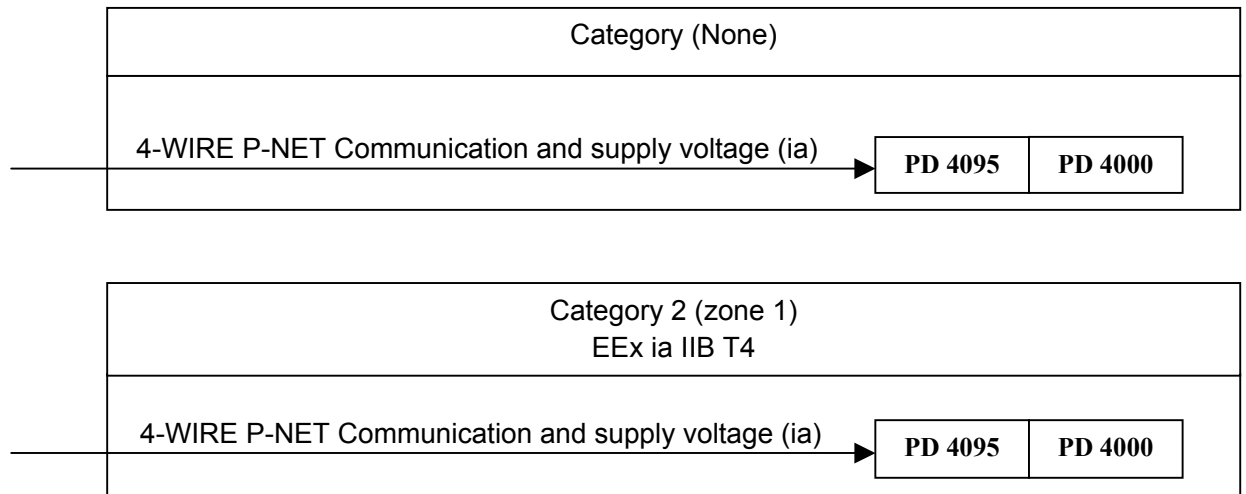


APPLICATION:

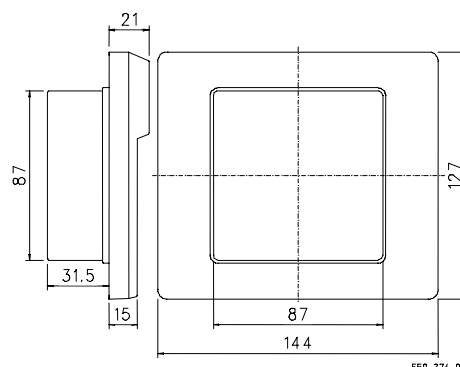
The PD 4095 module is an intrinsically safe power supply unit and a 4-WIRE P-NET interface designed to be used within EX environments as a supply unit for the PD 4000. The module has EEx ia IIB T4 approval.

4-WIRE P-NET is an inexpensive and practical solution because a common cable can be used for both the communication facilities and the supply voltage.

The figures below are an installation guide showing permitted configurations.



SCALE DRAWING (in mm):



SPECIFICATIONS:



Intrinsically safe (EEx(ia)) Input:

Nominal input voltage	$U_{nom} = 12 \text{ V}$
Nominal current (PD 4095 + PD 4000)	$I_{nom} = 80 \text{ mA}$
Maximum input voltage	$U_i = 13.9 \text{ V}$
Maximum input power	$P_i = 2.9 \text{ W}$
Maximum internal capacitance	$C_i = 110 \text{ nF}$
Maximum internal inductance	$L_i = 2 \text{ } \mu\text{H}$

Ambient temperature:

Operation	-25 °C to + 65 °C
Storage	-25 °C to + 65 °C

APPROVALS:

 0102  II 2 G
EEx ia IIB T4
PTB 04 ATEX 2001 X

EEx:

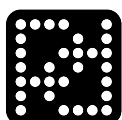
The complete PD 4095 module is approved in compliance with the **EX standard EN50020** (intrinsic safety 'i').

EMC:

The PD 4095 is approved in compliance with the **EMC-directive no 89/336/EEC**.
 Test limits are determined by the generic standards **EN 50081-1** for emission and **EN 50082-2** for immunity.

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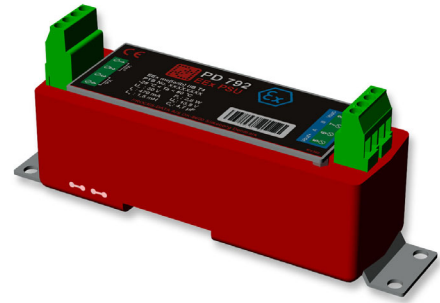
User manual for PD 791 EX Power Supply

FEATURES

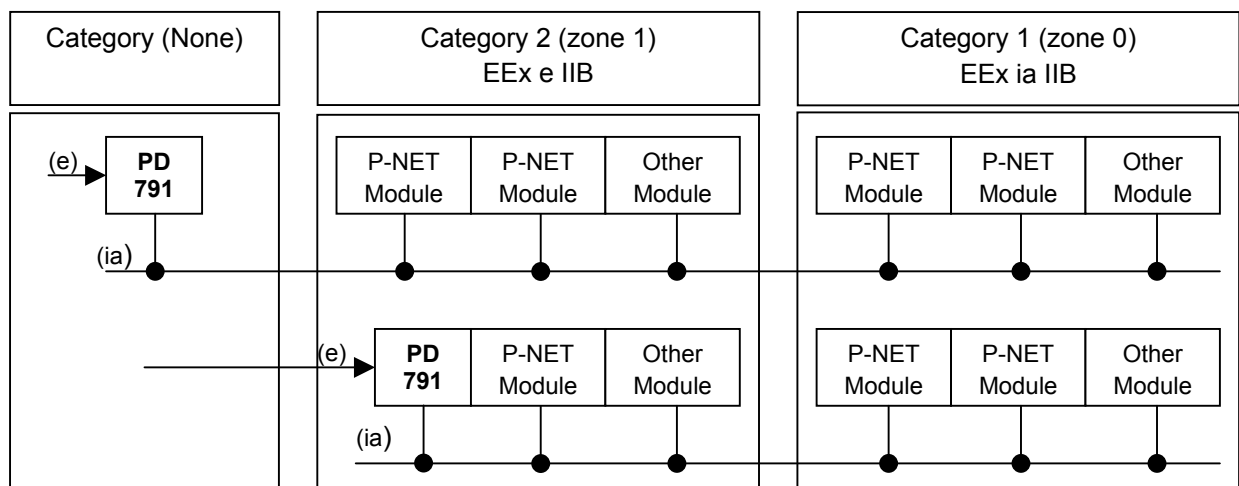
PD 791 is a power supply for intrinsically safe P-NET modules. It has a galvanically separated, increased safety input and an intrinsically safe output.

APPLICATION

The power supply module is designed for EX environments. It has a limited voltage, current and power output to supply intrinsically safe P-NET modules.



Installation guide showing allowed power supply line:

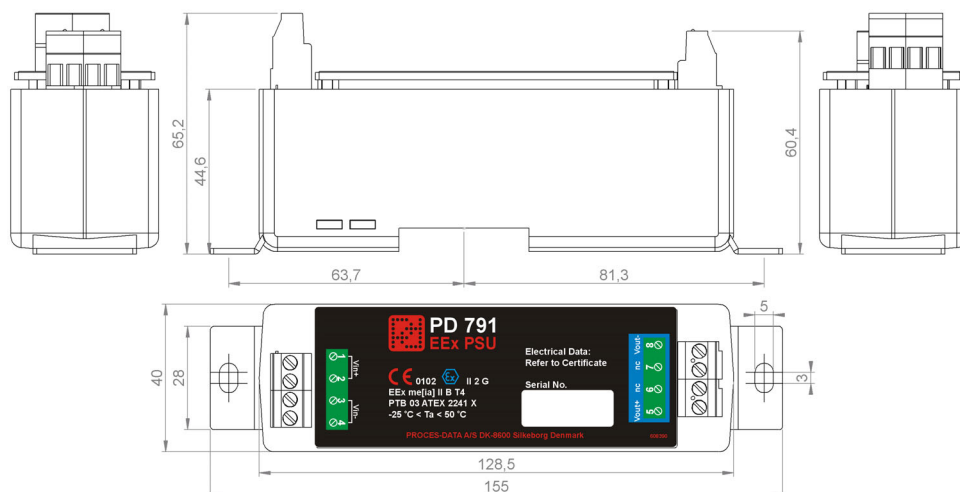


INSTALLATION

The module must be placed within an IP 54 enclosure. It dissipates heat through the aluminium chassis and should be bolted through the chassis holes onto a heat-conducting surface.

Choose a set of maximum C_0 and L_0 in the specifications that fits your equipment and cables.

SCALE DRAWING (in mm):



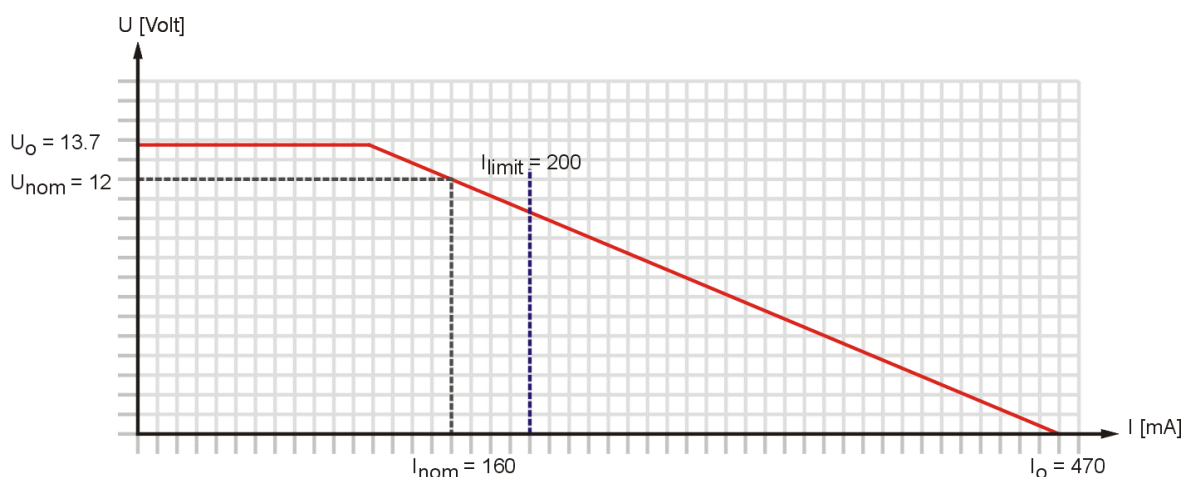
SPECIFICATIONS:



Increased safety (EEx(e)) Input:		Intrinsically safe output (EEx(ia)):	
Nominal input voltage	$U_{nom} = 24 \text{ V}$	Nominal output current	$I_{nom} = 160 \text{ mA}$
Minimum input voltage	$U_{min} = 22 \text{ V}$	Open circuit voltage	$U_o = 13.7 \text{ V}$
Maximum input voltage	$U_{max} = 30 \text{ V}$	Short circuit current	$I_o = 470 \text{ mA}$
Fuse (not replaceable)	1 A quick acting	Maximum power	$P_o = 2.7 \text{ W}$

Max reactive load:	Set 1	Set 2	Set 3	Set 4
Inductance L_0 [mH]	0.9	0.5	0.2	0.1
Capacitance C_0 [μF]	2.1	3.0	4.6	5.0

Operating temperature: -25 °C to + 50 °C

Storage temperature: -25 °C to + 70 °C

I-U characteristic for intrinsically safe output (EEx(ia)):**APPROVALS:**

 **0102**  **II 2 G**
EEx me[ia] II B T4
PTB 03 ATEX 2241 X

The power supply module is approved in compliance with: **EN50028** (encapsulated 'm').
 The Increased safety (EEx(e)) input is in compliance with: **EN50019** (increased safety 'e').
 The Intrinsically safe output (EEx(ia)) in compliance with: **EN50020** (intrinsic safety 'i').

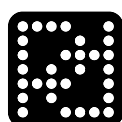
EMC:

The modules are in compliance with the **EMC-directive no 89/336/EEC**.

Test limits are determined by the generic standards **EN 50081-1** for emission and **EN 61000-6-2** for immunity.

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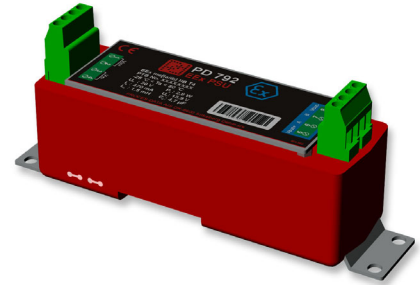
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User manual for PD 792 EX Power Supply

FEATURES

PD 792 is a power supply for intrinsically safe P-NET modules. It has a galvanically separated, increased safety input and an intrinsically safe output.

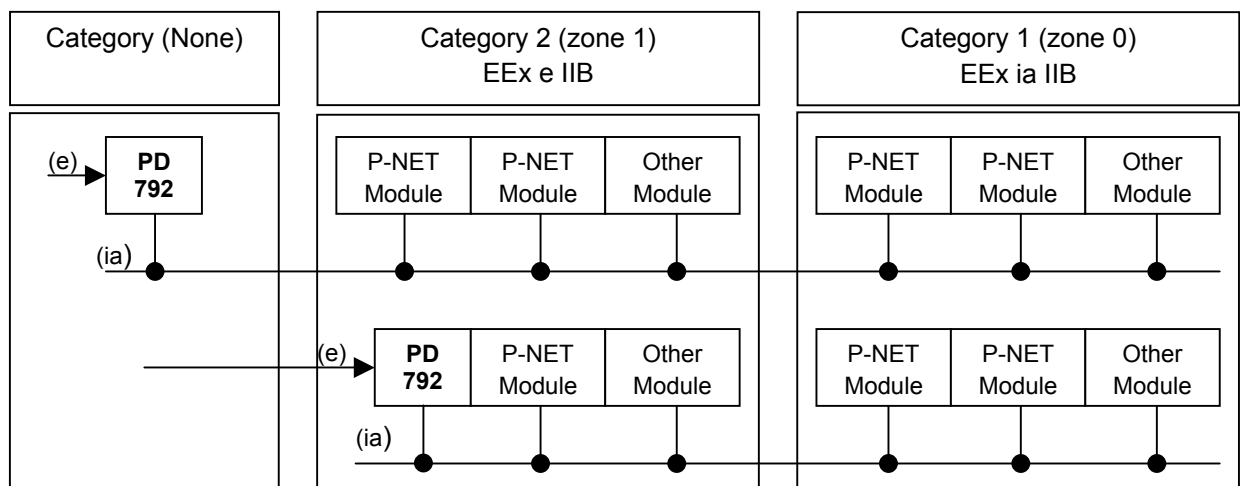
The module is also a gateway between the P-NET Light-Link interface and the P-NET 4-wire interface at the intrinsically safe output.



APPLICATION

The power supply module is designed for EX environments. It has a limited voltage, current and power output to supply intrinsically safe P-NET modules.

Installation guide showing allowed power supply line and P-NET 4-wire configurations:



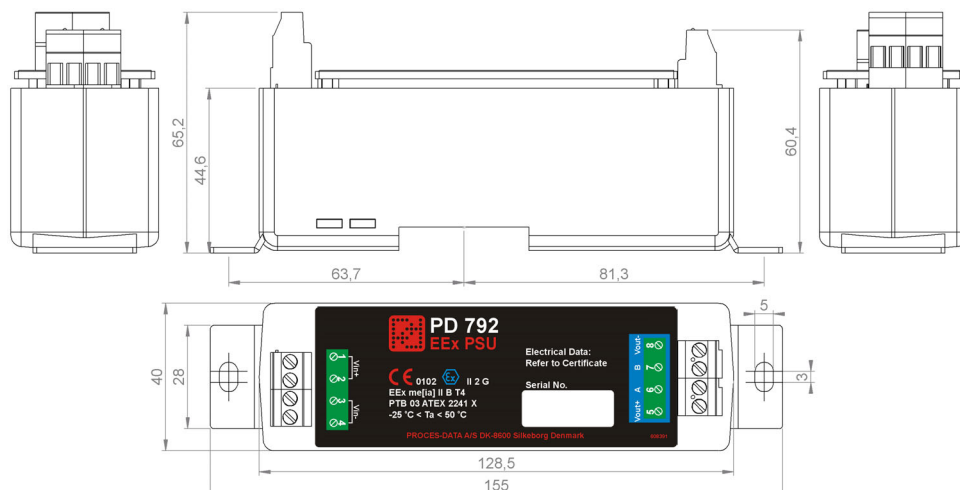
INSTALLATION

The module must be placed within an IP 54 enclosure. It dissipates heat through the aluminium chassis and should be bolted through the chassis holes onto a heat-conducting surface.

When mounted on a DIN rail, the P-NET Light-Link will be aligned with other modules on the same rail.

Choose a set of maximum C_0 and L_0 in the specifications that fits your equipment and cables.

SCALE DRAWING (in mm):

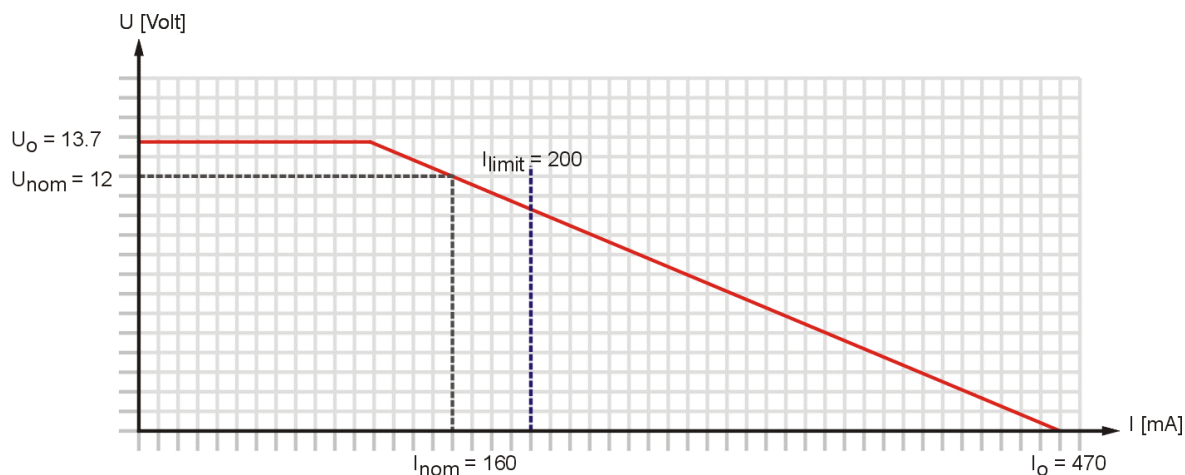




SPECIFICATIONS:

Increased safety (EEx(e)) Input:		Intrinsically safe output (EEx(ia)):	
Nominal input voltage	$U_{nom} = 24 \text{ V}$	Nominal output current	$I_{nom} = 160 \text{ mA}$
Minimum input voltage	$U_{min} = 22 \text{ V}$	Open circuit voltage	$U_o = 13.7 \text{ V}$
Maximum input voltage	$U_{max} = 30 \text{ V}$	Short circuit current	$I_o = 470 \text{ mA}$
Fuse (not replaceable)	1 A quick acting	Maximum power	$P_o = 2.7 \text{ W}$

Max reactive load:	Set 1	Set 2	Set 3	Set 4
Inductance L_0 [mH]	0.9	0.5	0.2	0.1
Capacitance C_0 [μF]	2.0	2.9	4.5	4.9

Operating temperature: -25°C to $+50^\circ\text{C}$ Storage temperature: -25°C to $+70^\circ\text{C}$

I-U characteristic for intrinsically safe output (EEx(ia)):**APPROVALS:**

 **1020**  **II 2 G**
EEx me[ia] II B T4
PTB 03 ATEX 2241 X

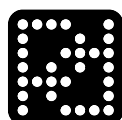
The power supply module is approved in compliance with: **EN50028** (encapsulated 'm').
 The Increased safety (EEx(e)) input is in compliance with: **EN50019** (increased safety 'e').
 The Intrinsically safe output (EEx(ia)) in compliance with: **EN50020** (intrinsic safety 'i').

EMC:

The modules are in compliance with the **EMC-directive no 89/336/EEC**.
 Test limits are determined by the generic standards **EN 50081-1** for emission and **EN 61000-6-2** for immunity.

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