

Intrinsically Safe 5 V Supply Module Model PSU1003

Characteristics:

General Description:

PSU1003 power supply is an intrinsically safe module potted as a sealed component in a 55 x 30 x 15 mm plastic enclosure with soldering pins for PCB mounting, the module can be installed in Hazardous Areas Zone 0 (20), Zone 1 (21), Zone 2 (22), Gas Group IIB or IIA temperature classification T4. Powered at about 12 V from the intrinsically safe PSD1001C supply module, it provides a stabilized 5 V, 160 mA supply with 500 V input/output isolation, short circuit and reverse input polarity protection, remote sensing and regulation.

Function:

Typical application is to power at 5 V, 160 mA intrinsically safe circuits implementing digital logic blocks, microcontroller operated peripherals like keyboards, encoders, logic solvers, LCD display units and transmitters.

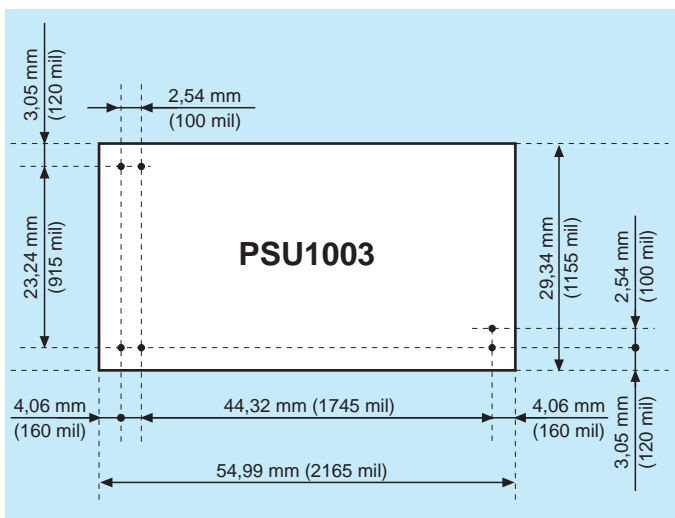
EMC:

Fully compliant with CE marking applicable requirements.

Features:

- High Output Capability for Powering Hazardous Areas Circuits.
- 500 V Input/Output Isolation.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- Short circuit proof highly stabilized output with remote sensing voltage regulation.
- Input reverse polarity protected.
- ATEX, UL & C-UL Certifications.
- High Reliability, SMD components.
- Rugged sealed construction suitable for installation in harsh environments.

PCB Drilling Dimensions



Technical Data:

Supply:

From PSD1001C supply module (nominal 19 V with 68 Ω series resistance).

Isolation (Test Voltage):

500 V Input/Output.

Output:

Voltage: 5 V \pm 3%.

Current: 0 to 160 mA.

Voltage regulation: \leq 0.2% for a 0 to 160 mA load change.

Compatibility:

CE CE mark compliant, conforms to 94/9/EC Atex Directive and to 89/336/CEE EMC Directive.

Environmental conditions:

Operating: Temperature limits -20 to + 60 °C, relative humidity max 90 % non condensing, up to 35 °C.

Storage: Temperature limits - 40 to + 80 °C.

Safety Description:

Ex II 1 G EEx ia IIB T4-U.
 $U_o/V_{oc} = 6,51$ V, $P_o/P_o = 1760$ mW, $C_o/C_a = 270$ μ F, at output pins O+ and O-, S+ and S-.
 $U_i/V_{max} = 24,2$ V, $I_i/I_{max} = 373$ mA, $P_i/P_i = 1760$ mW, $C_i/C_i = 0,36$ μ F, $L_i/L_i = 0$ μ H at input pins I+ and I-.

Approvals: applied for conforms to EN50014, EN50020.

Mounting:

Soldered on printed circuit board by connection pins.

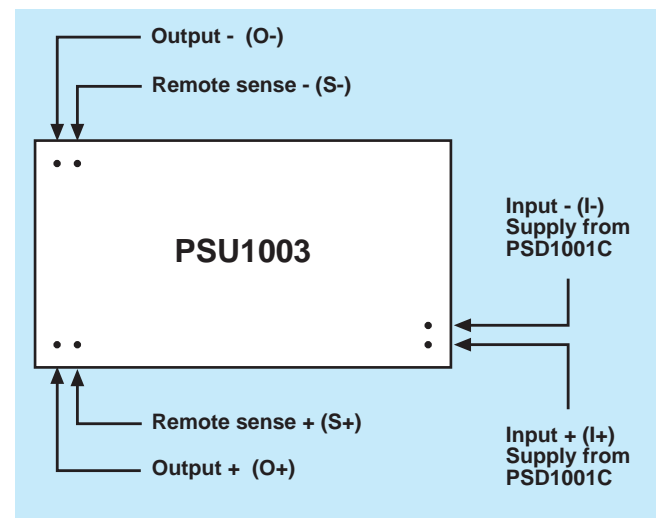
Weight: about 30 g.

Connection: By PCB soldering square pins 0.6 mm, length 7 mm (\varnothing 1 mm PCB drilling).

Location: Hazardous Areas Zone 0 (20), Zone 1 (21), Zone 2 (22). Gas group IIB or IIA, Temperature class T4.

Dimensions: Width 55 mm, Depth 30 mm, Height 15 mm.

Pin Assignment Top View:



Ordering Information:

Model: PSU1003

Parameters Table:

Safety Description	Maximum External Parameters		
	Group Cenelec	Co/Ca (μF)	
Pins O+, O-, S+, S- Uo/Voc = 6.51 V Po/Po = 1760 mW	IIB II A	270 700	
Pins I+ and I- Ui/Vmax = 24.2 V Ii/Imax = 373 mA Pi/Pi = 1760 mW Ci/Ci = 0.36 μF Li/Li = 0 μH	IIB II A		



NOTE for USA and Canada:

II B equal to Gas Groups C, D, E, F and G.

II A equal to Gas Groups D, E, F and G.

Function Diagram:

HAZARDOUS AREA / HAZARDOUS LOCATIONS
CLASS I, DIVISION 1 and CLASS II, DIVISION 1 or
CLASS I, Zone 0

SAFE AREA / NON HAZARDOUS LOCATIONS or
CLASS I, DIVISION 2, GROUPS A, B, C, D or
CLASS I, ZONE 2, GROUP IIC

Note: the possibility to power two modules with one single PSD1001C is limited by a total load of 5 V, 160 mA applied to the two units.

