

Product Description

The PISA11.CLASS2 is a DIN rail mountable DC/DC converter, which provides a floating, stabilized and galvanically separated SELV/PELV output voltage.

Intended Use

This device is designed for installation in an enclosure and is intended for commercial use, such as in industrial control, process control, monitoring and measurement equipment or the like. Do not use this device in equipment where malfunction may cause severe personal injury or threaten human life.

Installation Instructions

Install device in an enclosure providing protection against electrical, mechanical and fire hazards.

Install the device onto a DIN rail according to EN 60715 with the input terminals on the bottom of the device. Other mounting orientations require a reduction in output current.

Make sure that the wiring is correct by following all local and national codes. Use appropriate copper cables that are designed for a minimum operating temperature of 60°C for ambient temperatures up to +45°C, 75°C for ambient temperatures up to +60°C and 90°C for ambient temperatures up to +70°C. Ensure that all strands of a stranded wire enter the terminal connection.

Unused screw terminals should be securely tightened.

The device is designed for pollution degree 2 areas in controlled environments. No condensation or frost allowed.

The enclosure of the device provides a degree of protection of IP20.

The input can be powered from a regulated power supply or a similar DC source.

The input must be powered from a PELV or SELV source in order to maintain a SELV or PELV output. Check for correct input polarity. The device will not operate when the voltage is reversed.

A disconnecting means shall be provided for the input of the device.

The device is designed as "Class of Protection III" equipment according to IEC 61140.

The device is designed for convection cooling and does not require an external fan. Do not obstruct airflow and do not cover ventilation grid!

The device is designed for altitudes up to 6000m.

Keep the following minimum installation clearances: 40mm on top, 20mm on the bottom, min. 6.4mm left and right if the ambient temperature is above 60°C.

The PISA 11 is designed, tested, and approved for usage with Power Supplies providing DC 24V with up to 20A (480 Watt) without additional protection device for the PISA 11.

If the PISA 11 is used with other power sources, including batteries, direct DC mains operation or similar, which can provide continuous currents higher than 20A, an external fuse or circuit breaker shall be utilized. The fuse or circuit breaker shall comply to following ratings: max. 25A, slow acting, ≥30V DC voltage rating, ≥1kA breaking capacity. We recommend using an external fuse or circuit breaker with sufficiently breaking current to avoid a nuisance tripping of the circuit breaker when all outputs of the PISA 11 device are fully loaded.

The maximum surrounding air temperature is +70°C. The operational temperature is the same as the ambient or surrounding air temperature and is defined 2cm below the device.

The device is designed to operate in areas between 5% and 95% relative humidity.

Installation Instructions for Hazardous Location Areas

The device is suitable for use in Group II Category 3 (Zone 2) environments.

Classification: ATEX: EPS 11 ATEX 1 327 X, II 3G Ex ec nC IIC T4 Gc / IECEx EPS 22.0054X

WARNING EXPLOSION HAZARDS!

For non-standard mounting orientations, i.e. input terminals not on bottom, a reduction of output current is required (for details, please refer to datasheet PISA11.CLASS2). Substitution of components may impair suitability for this environment.

Do not disconnect the device or operate the voltage adjustment unless power has been switched off or the area is known to be non-hazardous. The signal-connector may not be used in hazardous location areas unless additional measures are met to avoid an unintended disconnection (e.g. an additional mechanical fixation).

A suitable enclosure must be provided for the end product which has a minimum protection of IP54 and fulfils the requirements of the EN 60079-7.

Functional Description

The output is electronically protected against no-load, overload and short circuit and can supply any kind of loads, including unlimited inductive loads and capacitive loads.

Do not apply return voltages from the load to the output terminals higher than 30V.

Do not parallel outputs for higher output currents.

Do not connect outputs in a series connection for higher output voltages. Do not connect batteries for charging purposes to the output of the device.

Synchronization of Multiple PISA Modules

If multiple PISA modules are used on the same power supply, it is recommended to connect the sync. bus of all modules together. If one unit shuts down due to the protection function of the input voltage protection circuit (safeguard), all other modules will shut down too. This avoids a false interpretation of which output channel caused the problem. If the sync. terminals are not linked, the module with the highest safeguard protection voltage level (caused by tolerances) would shut down first regardless whether the failure was caused by this module or not.

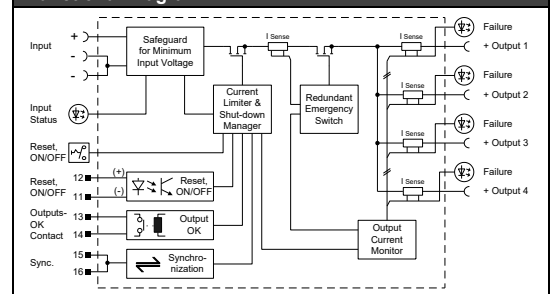
If the cause for the shutdown was an over-current of one individual channel, only this module will shut down and the other modules will stay on. In this case the sync. line has no impact on the other modules.

Technical Data

All values are typical figures specified at 24Vdc input voltage, 25°C ambient temperature and after a 5 minutes run-in time unless otherwise noted.

Input voltage	DC 24V	±25%
Required input voltage for turning-on of outputs	21.4Vdc	
Input current	15A	
Internal current consumption	43mA	
Outputs meet NEC CLASS 2		Yes
Voltage protection level	21.4V	Safeguard value
Output current per channel	3.7A at 24V, 3.2A at 28V	Below +70°C ambient
Total output current for all channels	14.8A at 24V, 12.8A at 28V	Below +70°C ambient
Tripping characteristics	see curve below	
Tripping delay	1s 10ms	At 7.4A channel current At short circuit
Load capacitance capability	58mF	Per channel with add. 1.9A resistive load
	58mF	For all channels in total with add. 1.9A resistive load
Power losses	1.0W	
Temperature range	-25 to +70°C	
Max. wire size (Iitz wire)	0.2-4mm²	For power terminals
Wire size AWG	AWG 20-10	For power terminals
Wire stripping length	7mm	For power terminals
Tightening torque	0.8Nm	For power terminals
Max. wire size (Iitz wire)	0.2-1.5mm²	For signal terminals
Wire size AWG	AWG 24-16	For signal terminals
Wire stripping length	6mm	For signal terminals
Tightening torque	0.35Nm	For signal terminals
Size (wxhxd)	45x75x91mm	Without DIN rail
Weight	120g	

Functional Diagram



Output Characteristic

