



wieland

wipos PSW

wipos PSW 24-20 | wipos PSW 48-10

Single, 2 or 3 phases / DC input switching power supply

Instruction manual

Dok.-Nr BA001402

Stand: 08/2025 (Rev. A)

NOTICE

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1 ABOUT THIS MANUAL

Please read this chapter carefully before using the user manual and the wipos power supply unit.

1.1 Function of this document

This user manual for the wipos power supply unit describes the device and its functions.

1.2 Scope and revision status

This installation manual applies to the wipos power supply units mentioned in this manual. The installation instructions for the product can be downloaded from the Wieland electronic catalogue. Always ensure you read the information for the most recent version in this installation manual. The version and revision level are displayed on the title page and in the footer.

1.3 Target group

The target group of this manual are planners, technicians, as well as employees in the assembly and service departments who plan and implement a remote control or remote maintenance solution.

1.4 Function and structure of this manual

This installation manual provides technical personnel with information on installing, operating and diagnosing wipos power supplies

Chapter 2, "Safety Instructions," p. 5, contains basic safety instructions. Read these instructions carefully and follow them.

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Information can also be found on our website <https://eshop.wieland-electric.com>.

1.5 Symbols and designations



The "DANGER" symbol indicates an immediate hazard. Failure to follow this symbol could result in serious injury or death. "DANGER" is used to warn of hazards that already exist at the time of the warning (e.g., hot surfaces, sharp edges, pinch points, etc.). This symbol is used only when there is a risk of injury!



The "WARNING" symbol indicates a potential hazard. Failure to follow this symbol could result in serious injury.



The "Caution" symbol indicates a potential hazard. Failure to follow this symbol could result in minor injury.

NOTICE

Notes on special features of the device.

The instructions indicate a potentially hazardous situation. Failure to follow this symbol may result in damage to the system or the system environment.

2 SAFETY INSTRUCTIONS

This chapter describes the safety instructions for you and the operators of the devices. Please read this chapter carefully before working with a wipos switching power supply.



General Safety Instructions

- All persons installing and commissioning wipos switching power supplies must have read and understood this manual.
- These persons must be familiar with all warnings, instructions, and requirements mentioned in this manual.
- Applicable local safety, protection, and installation requirements must be observed.
- The user is solely responsible for selecting the correct product and technical design in accordance with the relevant local regulations.

2.1 Qualified personnel

Installation, configuration for operation, commissioning, and maintenance of wipos switching power supplies may only be performed by qualified personnel.

Qualified persons:

- have completed appropriate technical training and
- have access to the wipos switching power supply installation instructions, which have been read and understood.

2.2 Intended use

Please observe the following instructions:

- The power supply unit may only be used in accordance with applicable international and national regulations, as well as any specific restrictions on the use of the power supply unit in specified applications and environments.
- To avoid injury and damage to the equipment, and to ensure that all relevant regulations have been observed, use only original accessories. Unauthorized modifications or the use of unauthorized accessories may damage the power supply unit. Unauthorized modifications or the use of unauthorized accessories may void the warranty.
- The power supply unit must not be opened.
- The maximum permissible voltage at the power supply connection must not be exceeded.
- Do not expose the power supply unit to extreme environmental conditions. Protect the power supply unit from dust, moisture, and high temperatures.

Any other use or modification to the device – even during assembly and installation – will void the warranty against Wieland Electric GmbH.

3 DECLARATION OF CONFORMITY

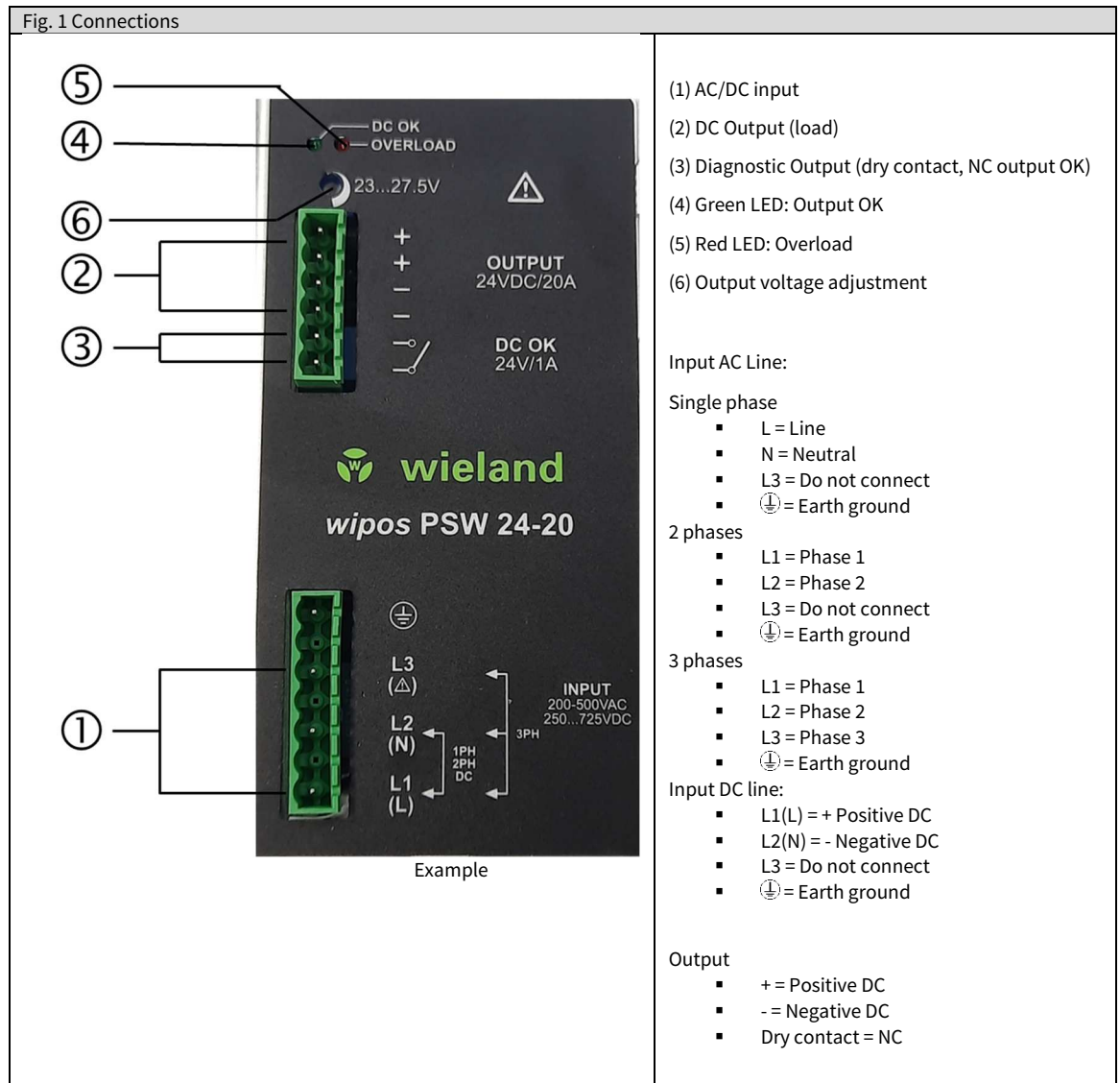
 wieland		Wieland Electric GmbH Brennerstraße 10-14, 96052 Bamberg, Germany Phone: +49 951 9324 0 Mail: info@wieland-electric.com			
This Declaration of Conformity is suitable to the European Standard EN45014 "General criteria for supplier's declaration of conformity". We declare under our sole responsibility that the device included in this box, has passed all processing inspections and the final test and it is in conformity with the product requirements, including all reference codes and supply specifications.					
ROHS compliance: The product respects the EC requirements related to ROHS substances, according to "Restriction of Hazardous Substances" as per document 2011/65/UE					
REACH compliance: The product respects the EC requirements related to REACH SVHC directive (EC) 1907/2006					
Note: All the reported information comes from our suppliers, Wieland Electric GmbH has not run any test to evaluate if the specific elements are present.					
All indicated devices are designed according to the latest Reference standards, if not expressly indicated through the official documents or files, they have been tested through our internal pre-compliance testing. Consult directly on www.nextys.com the reference standards applied to each model.					
Code wipos PSW 24-20 wipos PSW 48-10		Single, 2 or 3 phases with integrated PFC switching power supply IN 200 - 500Vac / OUT 24Vdc - 20A Single, 2 or 3 phases with integrated PFC switching power supply IN 200 - 500Vac / OUT 48Vdc - 10A			
Certifications and approvals				 IND.CONT.EQ.4 WX9	 
Reference standards		2014/35/EU (Low Voltage Directive) 2014/30/EU (EMC directive) EN61010-1 (Safety Standard) EN61010-2-201 (Safety Standard) UL508 (Certified - IND. CONT. EQ. 4WX9 file no. E356563) UL61010-1 (Certified - IND. CONT. EQ. 4WX9 file no. E356563) UL61010-2-201 (Certified - IND. CONT. EQ. 4WX9 file no. E356563) EN61000-6-2 (Generic immunity standard for industrial environments) - EN61000-4-2 (Electrostatic discharge immunity test) - EN61000-4-3 (Radiated, radio-frequency, electromagnetic field immunity test) - EN61000-4-4 (Electrical fast transient/burst immunity test) - EN61000-4-5 (Surge immunity test) - EN61000-4-6 (Immunity to conducted disturbances, induced by radio-frequency fields test) - EN61000-4-8 (Power frequency magnetic field immunity test) - EN61000-4-11 (Voltage dips, short interruptions and voltage immunity test) EN61000-6-4 (Generic emission standard for industrial environments) - EN55011 (CISPR11 - EMC)			

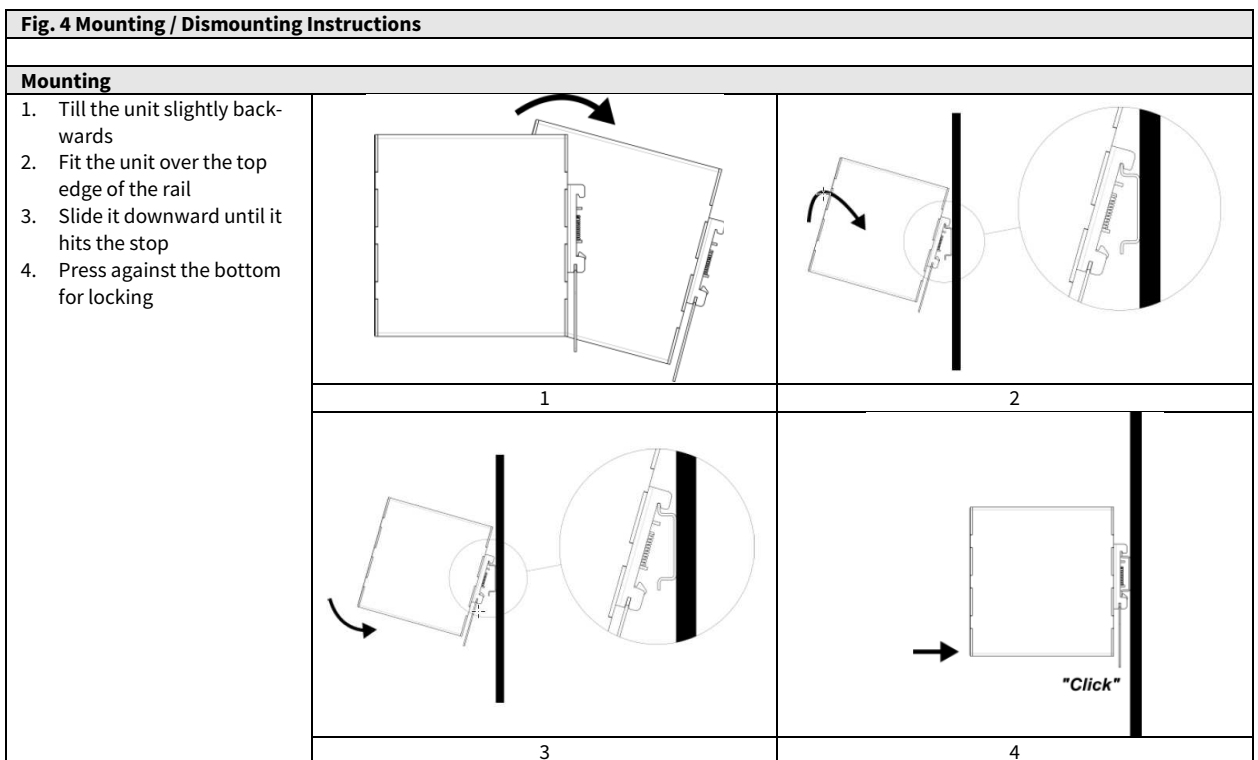
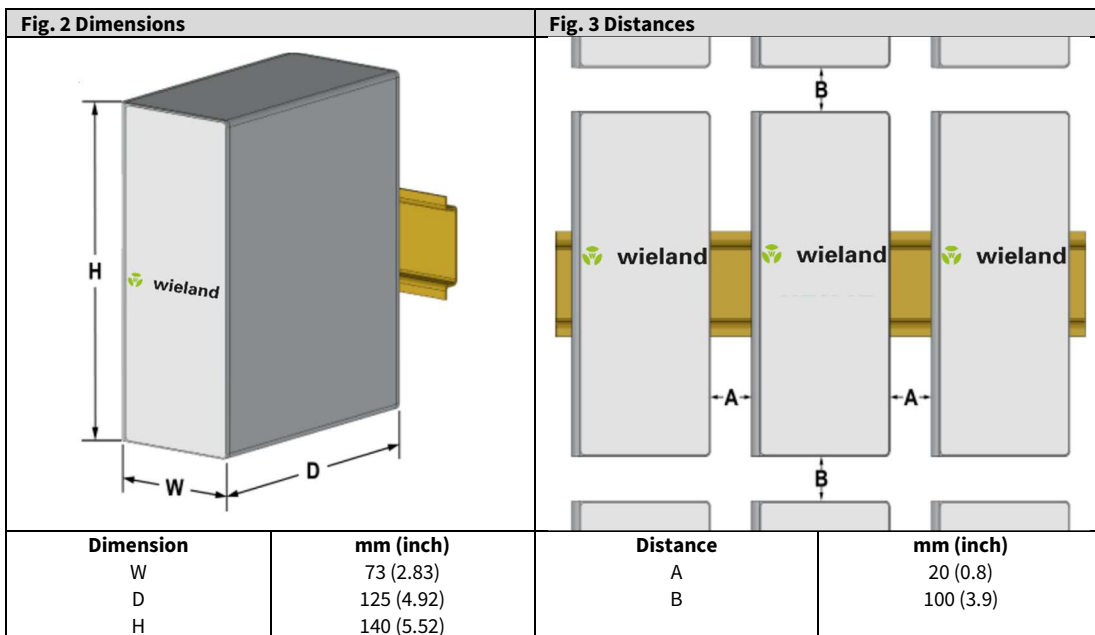
4 USER INSTRUCTION

1) Description: DIN rail mountable primary switched-mode power supply with 187...550Vac or 250...725Vdc input (UL not evaluated), suitable for single, 2 or 3 phases main line and DC line.
2) Installation: use DIN-rails according to EN60715. Installation should be made vertically (see Fig.4). For better device stability fix the rail to the wall close to the point where the device is to be mounted. In order to guarantee sufficient convection, we recommend observing a minimum distance to other modules (see Fig.3). The device is provided with a thermal protection; a limited air flow can cause the thermal protection tripping. The SMPS automatically restarts after cooling. To get normal operation reduce the temperature of the air surrounding the power supply, increase the ventilation or reduce the load (see Fig.8).
3) Connections: the device is equipped with pluggable screw terminals. To avoid sparks, do not connect or disconnect the connectors before having previously turned-off input power and waited for internal capacitors discharge (minimum 1 minute). In order to comply with UL certification, use appropriate copper cables of indicated cross section, designed for an operating temperatures > 85°C. Strip the connecting ends of the wires according to the indication and ensure that all strands of a stranded wire enter the terminal connection (see Fig.5).
4) Input protection: the device input is provided with varistors against overvoltage. Input isn't provided with internal fuses, thus an external short circuit/overcurrent protection must be provided by the end user (see Fig.6). For operation on a single phase, 2 or 3 phases system, a protection fuse on each phases must be provided. Surge protection: it is strongly recommended to provide external surge arresters (SPD) according to local regulations.
5) AC input connection: the device can be connected to single phase AC lines with U_{in} 230Vac and to 2 or 3 phases conductor of 3 phase lines with U_{in} 200...500Vac (see Fig.7). Ensure that the PE conductor is properly connected. Please connect first the PE.
6) DC input connection: connect L/L1 terminal to (+) positive pole, N/L2 terminal to (-) negative pole, L3 do not connect and  terminal to GND. Rated voltage 250...725Vdc (UL not evaluated). The device is also suitable for photovoltaic or wind turbine applications (see Fig.7).
7) Output connection: the device is suitable for SELV and PELV circuitry. U_{out} can be adjusted with a potentiometer to a wide range (see Fig.1). Check U_{out} before connecting the power supply to the load. With output voltage set to the max. value, the continuous [current x voltage] must not exceed the nominal power. If the output current exceeds 15A the load must be wired to the power supply using all the four poles of the output connector.
8) Parallel connection and redundancy: The power supplies can be connected in parallel to increase power. Since there is not a built-in current (load) sharing, an external active redundancy or active load sharing device to correctly balance the current between the devices shall be used. To achieve a near-correct current balance, it is recommended to set U_{out} uniformly (± 100 mV) on each unit, not to exceed 80% of the nominal load for each unit and to use symmetrical wiring to ensure uniform current distribution. For redundant connection, an external diode module (O-ring) device must be used (see accessory device). With regard to parallel wiring, both positive (+/+) and negative (-/-) poles shall always be used. This prevents the current flowing through only one device in the event of failure of one of the units, exceeding the 80% limit. In any case, it is recommended not to use more than two units connected in parallel for power and redundancy. In case more than two devices are needed, please contact technical support.
9) Output protection: the device is protected against overload (OL) / short circuit (SC) / overvoltage (OV) / over-temperature (OT). OL and SC: are controlled by a hiccup mode auto-reset protection with the following behaviour: OL behaviour: Max. OL = $I_n \times 1.4$ with constant output voltage for max 1s. If the current is $1.1 \geq I_n \geq 1.4$ the unit enters the OL protection and starts an ON/OFF cycle (hiccup mode). SC behaviour: The device supplies the indicated short circuit peak current for 150ms if the output current exceeds $I_n \times 1.5$ the device enters into a controlled ON/OFF cycles (hiccup mode). The output voltage drops to a voltage value depending on the impedance of the failed load circuit. Output OV circuit protection: the output is protected against potential OV due to internal malfunction or coming from the load for $U_{out} \geq U_{nom} \times 1.2 - 1.3$, depending on the model. OT protection: turns off the device if the internal temperature exceeds a safe limit. The device restarts automatically after cooling down. To recover to normal operation reduce air temperature surrounding the power supply, increase cooling or reduce load (see Fig.8).
10) Feeding DC motors: it is possible to feed DC motors considering that when a motor starts-up under effort its consumption is much higher than the nominal current and it can trigger overcurrent protection (see accessory device). NOTE: motors can generate high conducted noise on the DC line. Therefore, it is not recommended to feed on the same line motors and equipment sensitive to noise.
11) Operation with Battery: when a battery is connected in parallel to the Output for backup purposes (see accessory device).
12) Environmental: these products are IP20 (according to IEC 60529, not UL evaluated), and therefore chemicals / solvents, cleaning agents and other liquids must not be used.

13) Environment: These power supplies are SMPS for use in applications within a Pollution Degree 2, overvoltage category II environment (overvoltage category III according to EN50178). Do not use in wet area or subject to moisture. These products are designed for indoor use only.
14) Intended use: these are isolated devices suitable for SELV and PELV circuitry and are designed to be mounted on DIN rail and installed inside a protective enclosure. They are intended for general use such as in industrial control, communication, and instrumentation equipment. If the power supply is used in a way not specified in this manual, the protection provided by the equipment may be impaired. Don't use these devices in applications where malfunction may cause injury or death.
15) Radio interference: this is an electrical appliance according to EN55032, class A. They may cause radio interference in residential areas.

5 FIGURES





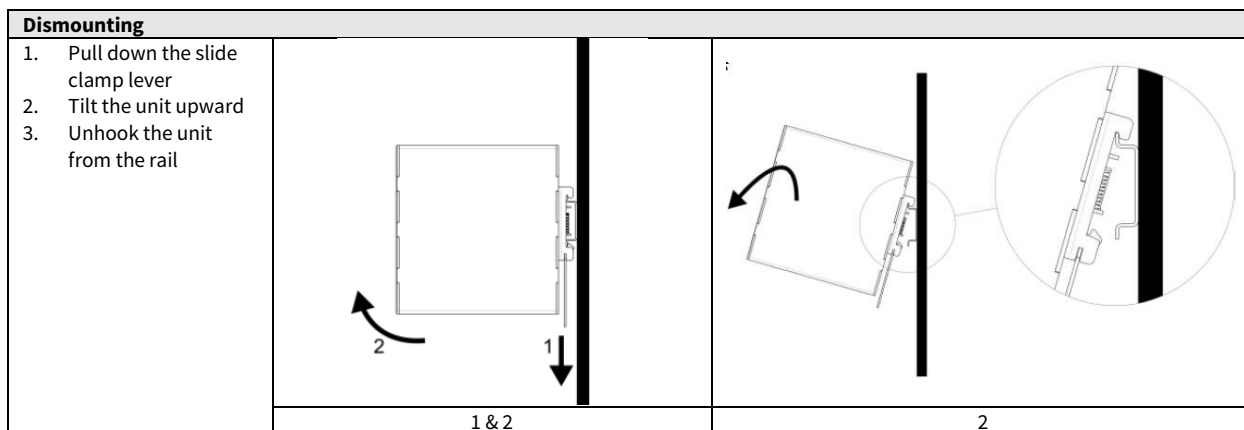


Fig. 5

Recommended connecting cable

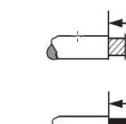
	Recommended tightening torque				Cable size (solid and stranded)		
	MFG	Nm	Lbf in		Nm	mm ²	AWG
	Dinkle	0.51	4.5		0.51	0.2 – 2.5	12-28
	ULO	0.51	4.5		0.51	0.2 – 2.5	12-28
	Anytek	0.57	5		0.57	0.34 – 2.5	12-24
	Deca	0.57	5		0.57	0.34 – 2.5	12-24
	Sauro	0.79	7		0.79	0.05 – 2.5	12-30
	Würth	0.57	5		0.57	0.2 – 3.3	12-24
					Stripping length 7-8 mm / 0.28-0.32 in		

Fig. 6

Input protection

In order to be UL compliant use Listed Cartridge nonrenewable (JDDZ) fuse Class CC 6AT 600Vac.

Fuse 6AT or MCB 6A C curve or 4A D curve.

For USA and Canada, use the fuse type closest to the European equivalent type.

Surge protection: it is strongly recommended to provide external surge arresters (SPD) according to local regulations.

Fig. 7

Input connections

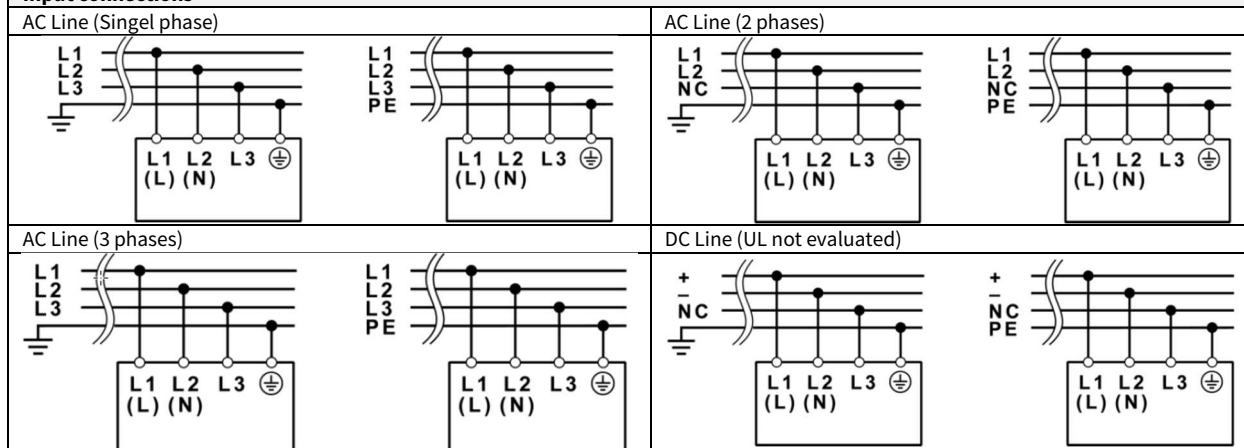


Fig. 8 Enviroment	
Operating temperature	Derating (UL not evaluated)
-40°C ... 70°C 5...95% r.H. non condensing UL Certified up to 45°C Overtemperature protection UL certified up to 2000m	– 10W /°C over 45°C

Note	
▪ Data may change without prior notice in order to improve the product ▪ Please refer to the latest version of the "Instruction Manual" for each product by visiting www.wieland-electric.com ▪	

6 SERVICE AND SUPPORT

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