

### Presentation



Phaseo ABL8MEM/ABL7RM (Modular)



Phaseo ABL8REM/ABL7RP (Optimum)



Phaseo ABL8RP/ABL8WP (Universal)

The Phaseo electronic switch mode power supply offer is designed to provide the DC voltage necessary for the PLC and automation system equipment control circuits.

■ Phaseo industrial regulated switch mode power supplies are available in 3 ranges: ABL8MEM/ABL7RM (Modular), ABL8REM/ABL7RP (Optimum), and ABL8RP/ABL8WP (Universal).

■ Phaseo switch mode power supplies are fully electronic and their output voltage is regulated. The use of electronics makes it possible to significantly improve the performance of these power supplies, which offer:

- Compact dimensions
- Integrated overload, short-circuit, overvoltage, and undervoltage protection (1)
- Wide input voltage range for the ABL8RP/ABL8WP (Universal) range
- High degree of output voltage stability
- Efficiency
- Diagnostics via LEDs on the front panel or remote diagnostics via relay contact for the ABL8RP/ABL8WP (Universal) range

■ Phaseo power supplies deliver a stabilized  $\text{---}$  output voltage that is precise to 3%, whatever the load from a  $\sim$  line supply, within the following ranges:

- 100 to 240 V  $\sim$  for phase-to-neutral (N-L1) or phase-to-phase (L1-L2) connections for the ABL8MEM/ABL7RM (Modular) and ABL8REM/ABL7RP (Optimum) ranges
- 85 to 550 V  $\sim$  for phase-to-neutral (N-L1) or phase-to-phase (L1-L2) connections for the ABL8RP/ABL8WP (Universal) range
- 360 to 550 V  $\sim$  for 3-phase connections (L1-L2-L3) for the ABL8RP/ABL8WP (Universal) range

■ They comply with IEC standards and are UL, CSA, TÜV, and C-Tick certified for industrial use. The inclusion of overload and short-circuit protection makes downstream protection unnecessary if discrimination is not required. To achieve discrimination, it is advisable to use discriminating electronic downstream protection modules.

■ Phaseo power supplies incorporate:

- An output voltage adjustment potentiometer to help compensate for any line voltage drops in installations with long cable runs
- Direct mounting on 35 mm (1.37 in.),  $\perp$  rails (optional for the ABL1REM/1RPM range) and 75 mm (2.95 in.)  $\perp$  rails (for the ABL8REM/ABL7RP (Optimum) range)

#### Phaseo ABL8MEM/ABL7RM (Modular)

■ The ABL8MEM/ABL7RM (Modular) range meets all the needs of simple automation systems with power ratings from 7 to 60 W and an output voltage of 5 V  $\text{---}$ , 12 V  $\text{---}$ , or 24 V  $\text{---}$ .

- The shape and compact nature of its casing mean that it can be mounted directly on a panel in a modular distribution panel (by means of retractable fixing lugs) or on a  $\perp$  rail in a cabinet.
- Wires can exit at the top or bottom of the unit as required (except on the **ABL7RM24025** model).

#### Phaseo ABL8REM/ABL7RP (Optimum)

■ The ABL8REM/ABL7RP (Optimum) range is the low-cost solution for applications supplied with 12 V  $\text{---}$ , 24 V  $\text{---}$ , or 48 V  $\text{---}$  and requiring currents between 3 and 5 A.

- The ABL8REM/ABL7RP (Optimum) range of Phaseo power supplies delivers a voltage that can give the PLC logic states. In the event of an overload the power supply protection trips; when the overload has disappeared, the power supply reverts to its nominal state.
- Since the ABL8REM/ABL7RP (Optimum) power supplies do not have PFC (power factor correction), they do not meet the requirements of standard IEC/EN 61000-3-2 (except models **ABL7RP1205** and **ABL7RP4803**).

#### Phaseo ABL8RP/ABL8WP (Universal)

■ The ABL8RP/ABL8WP (Universal) range covers power ratings from 72 to 960W in 24 V  $\text{---}$  and adapts to the majority of power distribution networks used throughout the world. The same power supply can thus be connected phase-to-neutral (N-L1) or phase-to-phase for line supplies ranging from 100 V  $\sim$  to 500 V  $\sim$  nominal. This ranges offers:

- Diagnostic functions (local or remote)
- User choice of operating mode in the event of an overload (current limiting or stop)
- Function modules to ensure continuity of service:
  - Buffer module and Battery check modules for protection against microbreaks or prolonged outages
  - Redundancy module for paralleling and redundancy functions
  - Protection modules for discriminating protection against application overloads
- A power reserve (boost function) for absorbing the transient current peaks required by the application

■ With the ABL8RP/ABL8WP (Universal) power supplies, it is possible to meet the need for auxiliary voltage (5 V  $\text{---}$  to 15 V  $\text{---}$ ) using  $\text{---}/\text{---}$  converter modules.

■ The incorporation of a PFC (power factor correction) input filter reduces harmonic pollution to a minimum level across the entire ABL8RP/ABL8WP (Universal) range, ensuring compliance with the requirements of standard IEC/EN 61000-3-2.

(1) The inclusion of overload and short-circuit protection makes downstream protection unnecessary if discrimination is not required.

### Characteristics of the 24 V $\overline{\text{---}}$ operating voltage

The permissible tolerances for the operating voltage are listed in publications IEC/EN 61131-2 and DIN 19240.

For a nominal voltage  $U_n$  of 24 V  $\overline{\text{---}}$ , the extreme operating values range from -15% to +20% of the voltage  $U_n$ , whatever the supply fluctuations in the range -10% to +6% (defined by standard IEC 38) with load variations of 0 to 100% of nominal current  $I_n$ .

The 24 V  $\overline{\text{---}}$  Phaseo power supplies are designed to provide an output voltage within these ranges.

It may be necessary to use a voltage measurement relay to detect when the normal voltage limits are being surpassed and to deal with the consequences of this. The ABL8RP/ABL8WP (Universal) range has integrated voltage detection.

### Recommendations for use of the 24 V $\overline{\text{---}}$ voltage

The Phaseo power supplies can be used to supply protection extra low voltage (PELV) or safety extra low voltage (SELV) control circuits in compliance with standard IEC/EN 60364-4-41.

They have the following characteristics:

- Double insulation between the input circuit (connected to the line supply) and the low voltage output circuit via an integrated isolation transformer
- Internal device limiting the output voltage to less than 60 V

### Harmonic pollution (power factor)

The current drawn by a power supply is not sinusoidal. This leads to the generation of harmonic currents that pollute the distribution network.

European standard IEC/EN 61000-3-2 limits the harmonic currents produced by power supplies.

This standard covers all devices between 75 and 1000 W, drawing up to 16 A per phase, and connected directly to the public distribution network. Devices connected downstream of a private, low voltage, general transformer are therefore excluded. Regulated switch mode supplies always consume harmonic currents; it is therefore recommended that a filter circuit (power factor correction or PFC) is added to comply with standard IEC/EN 61000-3-2.

Phaseo ABL8RP/8WP (Universal), ABL1RPM12083, ABL1RPM24042, and ABL1REM24042 power supplies conform to IEC/EN 61000-3-2 and can therefore be connected directly to public distribution networks.

Since Phaseo ABL8MEM240●●, ABL7RM24025, ABL1REM12050, and ABL1REM24025 power supplies have power ratings that are less than 75 W, they are not subject to the requirements of standard IEC/EN 61000-3-2.

They can therefore be connected directly to public distribution networks.

Phaseo ABL8REM, ABL1REM24062, ABL1RPM24062, ABL1REM24100, and ABL1RPM24100 power supplies must only be connected downstream of a private, low voltage, general transformer.