INTERFACE PROTECTION SYSTEM UNIT

COMPLIANT WITH
VDE-AR-N 4105 and VDE V 0126-1-1
application guides

Lovato electric

ENERGY AND AUTOMATION

INTERFACE PROTECTION SYSTEM UNIT
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Order code	Rated voltage Control	Rated voltage Auxiliary	Qty per pkg	Wt
	[V]	[V]	n°	[kg]
Three-phase systems with or without neutral. Dual threshold minimum and maximum voltage and frequency protection. R.O.C.O.F and Vector shift. Modular type with two relay outputs.				
PMVF80	230VAC 400VAC	100...240VAC/ 110...250VDC	1	0.580

Voltage threshold

Type of protection	V threshold P≤ 50kW	Tripping time P≤ 50kW	V threshold P> 50kW	Tripping time P> 50kW
U max U >>	1.15Un	0.1s	1.25Un	0.1s
U max U >	1.10Un	0.1s	1.10Un	0.1s
U min U <	0.80Un	0.1s	0.80Un	1.0s
U min U <<	OFF	0.1s	0.45Un	0.3s

Frequency threshold

Type of protection	Threshold (Hz) P≤ 50kW	Tripping time P≤ 50kW	Threshold (Hz) P> 50kW	Tripping time P> 50kW
f max f >>	OFF	0.1s	OFF	0.1s
f max f >	51.5	0.1s	51.5	0.1s
f min f <	47.5	0.1s	47.5	0.1s
f min f <<	OFF	0.1s	OFF	0.1s

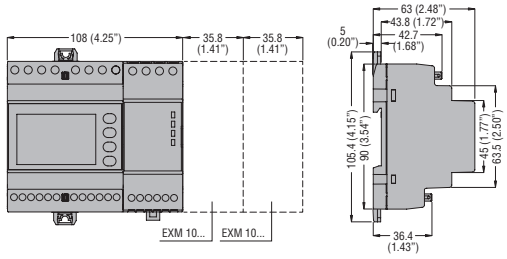
Loss of mains thresholds (islanding detection)	Default	Validation time (cycles)	Delay (s)
R.O.C.O.F (rate of change of frequency)	2Hz/s	0.50s (25)	0.00s
Vector shift	OFF	0.50s (25)	0.00s

EXPANSION MODULES AND GSM MODEM

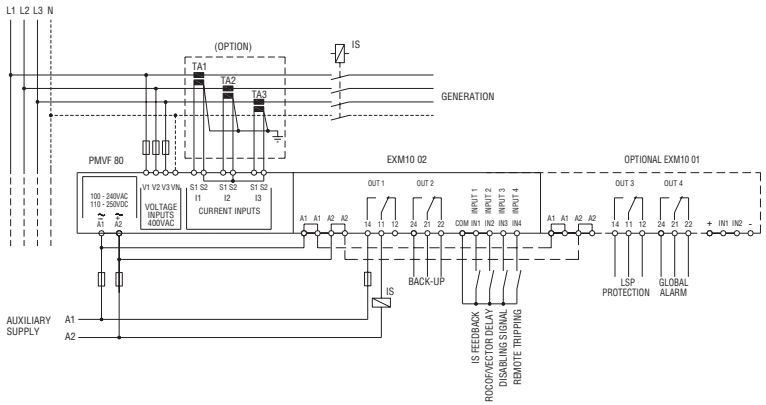
Order codes	Description
Communication ports.	
EXM1010	Opto-isolated USB interface
EXM1011	Opto-isolated RS232 interface
EXM1012	Opto-isolated RS485 interface
EXM1013	Opto-isolated Ethernet interface
EXM1018	IEC/EN 61850 interface
Inputs and outputs.	
EXM1001	2 digital opto-isolated inputs and 2 relay outputs 5A 250VAC

Order codes	Description
Modem.	
EXCGSM01	Remote control and monitoring GSM modem via SMS

DIMENSIONS [mm (in)]



WIRING DIAGRAMS



General characteristics

The PMVF80 device has been designed as an Interface Protection (IP) in accordance with VDE-AR-N 4105 and VDE V 0126-1-1 application guides. It is used when a local generating system is connected in parallel with the electric utility.
The controls refer to limits of voltage and frequency monitoring.
In the case when either the voltage or the frequency are out of admissible limits, the IP must step in by de-energising a relay output so that the interface switch (IS) trips.
PMVF 80 is equipped with 4 inputs having the following functions:
- IS status feedback
- R.O.C.O.F or Vector shift delay
- Disabling signal
- Remote tripping (forced IS opening, independent of voltage and frequency values).

Also, there are 2 relay outputs for:
- IS opening and closing
- Backup device opening (programmable: retentive normally energised, retentive normally de-energised or adjustable pulse).

The backup device consists of a signal contemporary or delayed respect to the IS opening command, transmitted only if the IS failed and did not complete the disconnection.
PMVF80 also has 2 additional relay outputs to configure as:
- Autonomous signalling in case of phase power unbalance (LSP), only if three CTs are also installed
- Programmable alarm.

Operational characteristics

- Auxiliary voltage: 100...240VAC/110...250VDC
- Voltage inputs range: 50-50000VAC
- Relay outputs: 250VAC 5A (AC1) / 30VDC 5A
- Relay can be password protected to prevent parameters being altered
- 4 digital inputs
- Current inputs (optional): via CTs with selectable /5A or /1A secondary
- Programmable rated voltage, programmable voltage and frequency thresholds and delays
- Support of EXM series communications modules (USB, RS232, RS485, Ethernet)
- Modular housing: 6 modules
- Parameter configuration and remote control (only with comunication expansion module) with software Synergy and Xpress
- Degree of protection: IP40 on front; IP20 on terminals
- Predisposed for IEC/EN 61850 signal supervision using expansion or external module
- Event log (128 events with time reference):
  - interface protection trip events;
  - password interaction events;
  - commands execution;
  - system events.

Reference standards

Compliant with standards: VDE-AR-N 4105 and VDE V 0126-1-1 application guides, IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4.

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