PROTECTION RELAY

INTERFACE PROTECTION SYSTEM UNIT COMPLIANT WITH G59/G99 (UK)

Lovato electric

ENERGY AND AUTOMATION

Protection relay

Interface protection system unit compliant with Engineering recommendation G59/G99 (ENA)

PMVF 70

Order code	Rated voltage Control	Rated voltage Auxiliary	Qty per pkg	Wt
	[V]	[V]	n°	[kg]
Three-phase/single-phase system with or without neutral in low and high voltage. Dual threshold minimum and maximum voltage and frequency protection, ROCOF and vector shift. Modular type.				
PMVF 70	230VAC 400VAC	100...240VAC/ 110...250VDC	1	0.470

Voltage threshold

Type of protection	Tripping threshold	Tripping time
Maximum voltage O/V ST.2	1.19Un	0.5s
Maximum voltage O/V ST.1	1.14Un	1s
Minimum voltage U/V ST.1	0.87Un	2.5s
Minimum voltage U/V ST.2	0.8Un	0.5s

Frequency threshold

Type of protection	Tripping threshold	Tripping time
Maximum frequency O/F ST.2	52Hz	0.5s
Maximum frequency O/F ST.1	51.5Hz	90s
Minimun frequency U/F ST.1	47.5Hz	20s
Minimun frequency U/F ST.2	47Hz	0.5s
Rate of change of frequency (ROCOF)	OFF	-
Vector shift	OFF	-

EXM10...

Order code	Description
EXPANSION MODULES FOR PMVF 70. Communication ports.	
EXM10 10	Opto-isolated USB interface
EXM10 11	Opto-isolated RS232 interface
EXM10 12	Opto-isolated RS485 interface
EXM10 13	Opto-isolated Ethernet interface
EXM10 18❶	IEC/EN 61850 interface
Inputs and outputs.	
EXM10 01	2 digital opto-isolated inputs and 2 relay outputs 5A 250VAC

❶ **IEC/EN 61850 protocol**
The EXM10 18 module will be made available only when the competent authorities have established the exact terms of the supervision and control of the specific commands.

General characteristics

PMVF 70 interface protection system (IP) unit has been developed according to the Engineering recommendation G59/G99 (ENA) prescriptions. Each is used when a local generating system is connected in parallel with the low and high voltage 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 device (IS) trips.
PMVF 70 is equipped with 4 inputs having the following functions:
- IS status feedback
- ROCOF/Vector shift delay
- Disabling signal
- Remote tripping (forced IS opening, independent of voltage and frequency values).

Also, there are two 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 with a 0.5s delay respect to the IS opening command, transmitted only if the IS failed and did not complete the disconnection.
PMVF 70 also has two additional relay outputs to configure as:
- Programmable alarm
- Autonomous signalling in case of phase power unbalance (LSP), only if three CTs are also installed.

Operational characteristics
- Auxiliary voltage: 100...240VAC/110...250VDC
- Voltage inputs:
  - 400VAC (three-phase connection)
  - 230VAC (single-phase connection)
- Relay outputs 5A 250VAC AC1 / 5A 30VDC
- Relay can be password protected to prevent parameters being altered
- 4 digital inputs
- Current inputs (optional): Use 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 module❶.**

Reference standards

Compliant with standards: Engineering recommendation G59/G99 (ENA), IEC/EN 60255-5, IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4.

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