

MVR-200 series

Medium Voltage Relay



The MVR-200 series combines reliable protection, control and measuring functionality in a single device for medium and high voltage applications.

It meets IEC 60870-5-101/103/104 and IEC 61850 communication standards, including GOOSE messaging.

The flexible hardware design lets you add or exchange modules on-site, minimising service or repair times.

The MVR-200 is available with a 4-channel arc flash protection module, preventing severe damage to staff or equipment in the event of an arc flash incident.

The MVR-200 wide-frequency tracking algorithm ensures stable measurement and protection from 6 to 75 Hz in variable frequency applications. For example, in marine applications and in critical power applications where generators are running in island mode.

In addition to comprehensive protection, the MVR-200 provides unique control functionality, saving space, time and money for additional devices:

- Voltage control for transformers (tap changers)
- Active synchroniser for generators with additional synch-check (ANSI 25)

Main features

- Programmable logic
- Fast and easy commissioning and service with front communication port and intuitive software
- Password-protected user levels
- Individual voltage and current harmonics up to 31st
- RS-485 Modbus RTU communication
- IEC 60870-5-104/103/101 communication
- IEC 61850 communication and GOOSE
- On-site replaceable spare part modules
- Class 0.5 power and energy measurement (Class 0.2S optional)
- Conformal Coating available for all devices
- Marine type approval by major class societies

The MVR-200 line has achieved marine type approval by most approval societies, making it ideal for marine, offshore and land-based applications.



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		Feeder					Transformer				Busbar	Motor					Generator	
		F201	F205	F210	F215	F255	T215	T216	T256	T257	V211	M210	M215	M255	M257	G215	G257	
		Feeder Protection	Directional Feeder Protection	Feeder Protection	Directional Feeder Protection	Directional Feeder Protection	2-winding Transformer Protection	2-winding Transformer Protection	2-winding Transformer Protection	3-winding Transformer Protection	Busbar Protection	Motor Protection	Motor Protection	Motor Protection	Motor Protection	Generator Protection	Generator Protection	
Measuring																		
AC Current Measuring		5-ph	5-ph	5-ph	5-ph	5-ph	5-ph	2 × 5-ph	2 × 5-ph	2 × 5-ph	--	5-ph	5-ph	5-ph	2 × 5-ph	5-ph	2 × 5-ph	
AC Voltage Measuring		--	4-ph	--	4-ph	4-ph	4-ph	--	--	4-ph	4-ph	--	4-ph	4-ph	4-ph	4-ph	4-ph	
Number of Option Slots		0	0	4	3	11	3	2	10	9	5	4	3	11	9	3	9	
Protection Functions	ANSI																	
Underspeed	14											X	X	X	X			
(Sensitive) Earth fault protection stages INST, DT or IDMT	50N/51N(S)	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
100% stator Earth fault protection	64F3															X	X	
Auto-reclose	79		X	X	X	X								X	X	X	X	
Breaker failure protection	50BF	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Cable-end differential protection	87		X	X	X	X	X	X	X	X		X	X	X	X	X	X	
Cold-load pick-up block	68	X	X	X	X	X												
Current transformer supervision	60L	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
Current unbalance/broken conductor protection stages INST, DT or IDMT	46 /R/L	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
Directional (sensitive) residual over-current protection stages DT or IDMT	67N		X		X	X	X			X			X	X	X	X	X	
Directional three-phase over-current protection stages DT or IDMT	67		X		X	X	X			X			X	X	X	X	X	
Fault locator	21FL		X		X	X												
Frequency protection stages	81O/U		X		X	X				X	X		X	X	X	X	X	
Fuse failure	60		X		X	X	X			X	X		X	X	X	X	X	
Harmonic over-current protection/inrush blocking stages INST, DT or IDMT	50H/51H/68	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
Inadvertent energizing	50/27																X	
Intermittent earth fault	67NT				X	X												
Load jam monitor	51M											X	X	X	X			
Loss of field	40															X	X	
Machine thermal overload protection	49M											X	X	X	X	X	X	
Motor or generator differential protection, 2-winding	87M/G														X		X	
Motor start-up supervision element	48											X	X	X	X			
Over-excitation protection	24						X			X						X	X	
Over-voltage protection stages INST, DT or IDMT	59		X		X	X	X			X	X		X	X	X	X	X	
Positive/negative sequence under-/over-voltage protection stages INST, DT or IDMT	27P/47/59P		X		X	X	X				X		X	X	X	X	X	
Power factor	55												X	X	X	X	X	
Programmable stage	99			X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Rate of change of frequency	81R		X		X	X				X	X		X	X	X	X	X	
Residual voltage protection stages INST, DT or IDMT	59N		X		X	X	X			X	X		X	X	X	X	X	
Restart inhibit/frequent starts	66											X	X	X	X			
Restricted earth fault protection (low-imp)	87N		X	X	X	X	X	X	X	X		X	X	X	X	X	X	
Reverse-/under-/over-power protection stages INDT, DT or IDMT	32		X		X	X				X			X	X	X	X	X	
Switch onto fault logic		X	X	X	X	X	X	X	X	X								
Synchrocheck	25		X		X	X				X	X					X	X	
Thermal overload protection (line)	49L	X	X	X	X	X												
Three-phase over-current protection stages INST, DT or IDMT	50/51	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
Transformer thermal overload protection	49T							X	X	X								
Transformer, motor or generator differential protection, 2 winding	87T/G/M							X	X	X								
Under-current monitor	37											X	X	X	X			
Under-impedance protection	21						X			X						X	X	
Under-voltage protection stages INST, DT or IDMT	27		X		X	X	X			X	X		X	X	X	X	X	
Vector jump/surge	78				X	X					X					X	X	
Voltage controlled/dependent over-current protection	51V															X	X	
Voltage memory			X	X	X	X				X			X	X	X	X	X	

Options

I/O Extension

Extension Module Option B

Additional 8 x isolated digital inputs (2 groups),
10 to 200 V DC

Extension Module Option C

Additional 5 x NO digital outputs, 220Vac / 3A or
220Vdc / 0.3 A

Extension Module Option D

Arc Flash protection 4-channels*

Extension Module Option I

Additional 4 x Analogue outputs 0-20 mA, 1 x
Analogue input 0-20 mA

Other optional features

Increased measuring accuracy Class 0.2S

Active synchronizer using relay outputs for
speed/voltage control

AVR control (Tap changer)

Selection of motor types: synchronous/asyn-
chronous/synchronous with excitation

Conformal Coating

Note: Some of these features are not available for
all products in the series. Contact your sales
representative for more details.

Communication Interface

Extension Module Option L

RS232 interface + Serial fiber Plastic - Plastic
(PP)

Extension Module Option M

RS232 interface + Serial fiber Plastic - Glass
(PG)

Extension Module Option N

RS232 interface + Serial fiber Glass - Plastic
(GP)

Extension Module Option O

RS232 interface + Serial fiber Glass - Glass (GG)

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* Not approved for marine.



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