

Medium Voltage Relay MVR-200 series



MVR-210 series



MVR-250 series

General description

The MVR-200 series provides optimal performance for medium- and high-voltage protection, control, measurement, and monitoring of applications.

The MVR is designed for use as stand-alone protection and measuring unit or as a component in larger applications, connected through IEC 61850 GOOSE messages in three-phase electrical power networks that require marine approval.

The MVR wide frequency tracking algorithm ensures stable measurement and protection from 6 to 75 Hz, where variable frequency is present, such as marine applications and generators running in island mode.

The MVR measures and calculates values for AC voltage, AC current, active/reactive power, power factor, frequency, THD and harmonics (up to 31st). All values can be seen on the display.

A 5 ms scan time ensures that faults are quickly registered.

A 64 samples/cycle fault record function measures data for up to 100 faults for 10 seconds each. This function can be configured to create records *before* the error, making it easier to understand the causes of the error and prevent it from re-occurring.

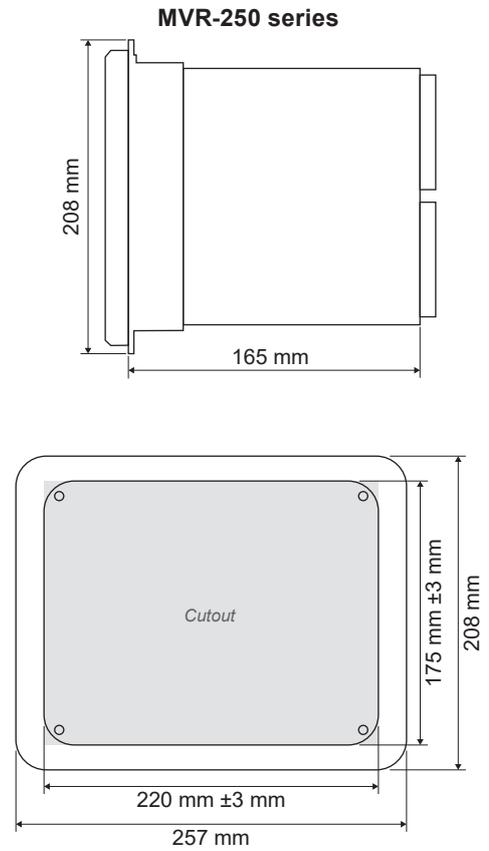
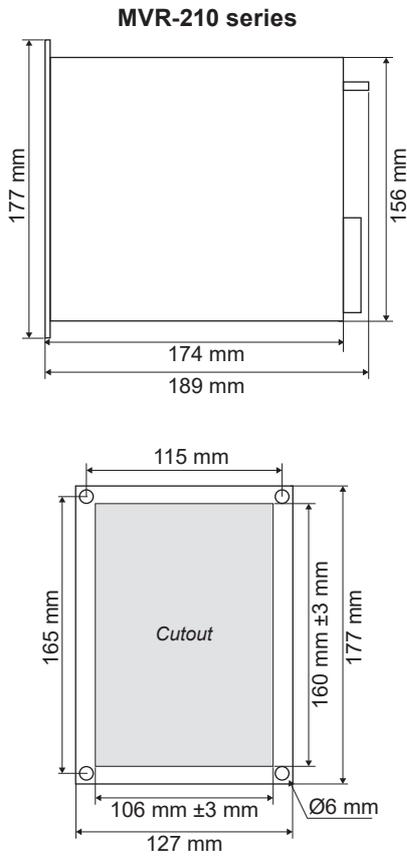
Series	Display	Free option slots
MVR-210	4" monochrome	3 to 5
MVR-250	7" colour	9 to 11

Main features

- Robust design for maritime usage
- Separate processors for HMI and communication
- Power supply selectable, 100-110V DC or 24-48V DC
- Programmable logic
- 6 to 75 Hz patented frequency-tracking algorithm
- Fast and easy-to-use software for setup and commissioning
- 64 samples/cycle
- Password-protected user levels
- Individual voltage and current harmonics up to 31st
- TCP/IP Ethernet
- Ethernet port on the front for easy commissioning and service
- RS-485 Modbus RTU communication
- IEC 60870-5-104/103/101 communication
- IEC 61850 communication, including HSR, PRT, PTP according to IEEE 1588, and GOOSE (GOOSE not available in MVR-F201 and MVR-F205)
- System fault (SF) output relay (watchdog)
- On-site replaceable spare part card(s)
- Class 0.55 power and energy measurement (0.25 optional, where available)
- Marine approval by major class societies: DNV/GL, LR, BV (other approvals upon request).

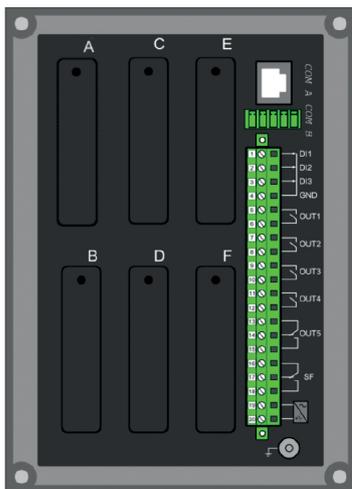
Dimensions and rear view

Dimensions

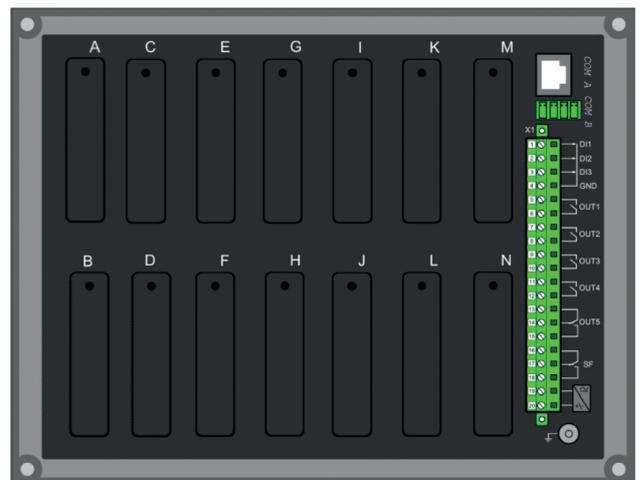


Rear view

MVR-20x and 21x series



MVR-25x series

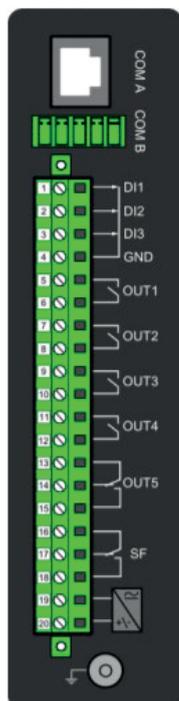


The views are shown with the microprocessor/IO module mounted. This is the only hardware that is mandatory.

- If current measurement is fitted, it is in slots B-D.
- If voltage measurement is fitted, it is in slot A.
- If differential current is fitted: AC current measurements are in slot A-C and B-D. MVR-20x and 21x series: AC voltage measurement is not available. MVR-25x series: AC voltage measurement is moved to slot E.
- All remaining slots are for options

Hardware modules (rear mounted)

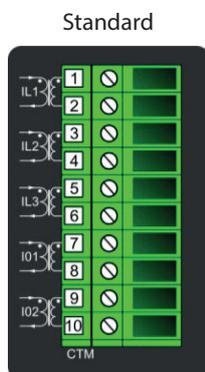
Processor



- Ethernet
- RS-485
- 3 x DI
- 5 x Relay out
- System Fail (watchdog)
- Power supply

AC current inputs

5 CT inputs



Ring Lug



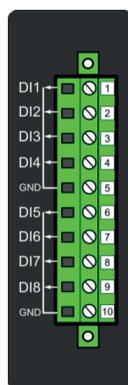
AC voltage inputs

4 voltage inputs



Digital in

8 x DI



Option B

Relay out

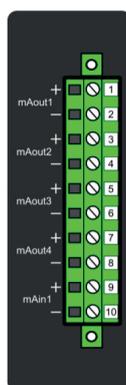
5 x relay



Option C

Analogue I/O

4 x Out / 1 x In



Option I

Ethernet

2 x 100 MB Fiber



Option J

Serial I/F

1 x RS232 / 1 x Fiber



Option L to O

AC current	25 A continuous / 100 A, 10 sec / 500 A, 1 sec
AC voltage	0.5 to 480 V RMS / 630 V RMS continuous
Power supply	L: 24/48 V DC +30/-25 % or H: 100 to 110 V DC +/- 10 %
Digital inputs	24, 110 or 220 V AC/DC (processor module), 10 to 200 V DC (option B) Pick-up threshold 20 V, 90 V or 180V (processor module) or 16 to 200 V adjustable (option B) Release threshold 10 V, 60 V or 120 V (processor module) or 10 to 200 V adjustable (option B)
Digital outputs	Processor module and option C: 220 V AC, 3 A or 220 V DC, 0.3 A. Max. continuous thermal rating 4 A @ 50 °C
Analogue I/O	0 to 24 mA

For further technical data, see the MVR-200 Data sheet, document number 4921240605.

Features

Feature	Machine/Motor				Generator		Transformer				Bus	Feeder				
	M210	M215	M255	M257	G215	G257	T215	T216	T256	T257	V211	F201	F205	F210	F215	F255
5 x AC current measurement	●	●	●		●		●					●	●	●	●	●
10 x AC current measurement (differential current included)				●		●		●	●	●						
4 x AC voltage measurement		●	●	●	●	●	●			●	●		●		●	●
3 x DI, 5 x relay output, 1 x System fault (Watchdog) output	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●
11 x DI, 10 x relay out, 1 x System fault (Watchdog) output													●			
HW Option B: 8 x Isolated (2 groups) digital inputs, 10 to 200 V DC	●	●	●	●	●	●	●	●	●	●	●			●	●	●
HW Option C: 5 x NO digital outputs, 220 V AC / 3 A or 220 V DC / 0.3 A	●	●	●	●	●	●	●	●	●	●	●			●	●	●
HW Option I: 5 x analogue outputs 0(4) to 24 mA out, 1 x mA in*	●	●	●	●	●	●	●	●	●	●	●			●	●	●
HW Option J: Double Fiber Ethernet interface**	●	●	●	●	●	●	●	●	●	●	●			●	●	●
HW Option L: RS 232 interface + Serial fiber Plastic - Plastic (PP)**	●	●	●	●	●	●	●	●	●	●	●			●	●	●
HW Option M: RS 232 interface + Serial fiber Plastic - Glass (PG)**	●	●	●	●	●	●	●	●	●	●	●			●	●	●
HW Option N: RS 232 interface + Serial fiber Glass - Plastic (GP)**	●	●	●	●	●	●	●	●	●	●	●			●	●	●
HW Option O: RS 232 interface + Serial fiber Glass - Glass (GG)**	●	●	●	●	●	●	●	●	●	●	●			●	●	●
SW Option: Measuring class 0.25 (0.55 standard)		●	●	●	●	●	●			●					●	●
SW Option: Selection between types: Synchronous/asynchronous/synchronous with excitation				●							●					
SW Option: Active synchronizer with relay outputs for speed/voltage control						●				●						
SW Option: AVR control (Tap changer)***										●						
Number of option slots	4	3	11	9	3	9	3	2	10	9	5	0	0	4	3	1

* Max. 2 modules per relay.

** Only one communication option per relay.

*** Requires hardware option I (1 analogue input).

For more information, please contact:

DEIF A/S · Frisenborgvej 33 · DK-7800 Skive · Denmark

Tel.: +45 9614 9614 · Fax: +45 9614 9615 · info@deif.com · www.deif.com