

# MV5000FM, MV5000FR

Single parameter controller



User-friendly installation and operation as well as high function especially controller functions, data logger and field bus networking allow universal application. The controller series for front panel mounting features reliable processing of:

*pH value or redoxpotential or concentration (ISE) and temperature*

- MV5010FM
- MV5010FR

*Conductivity (2 electrodes cell) and temperature*

- MV5020FM
- MV5020FR

*Conductivity (4 electrodes cell) and temperature*

- MV5025FM
- MV5025FR

*Dissolved oxygen (amperometric) and temperature*

- MV5030FM
- MV5030FR

*Chlorine and temperature*

- MV5060FM
- MV5060FR

<b>Configuration</b>	directly in the device by 5 keys and display (plain text menu structure) or by means of the PC interface and corresponding configuration program DinModule
<b>Display</b>	graphic OLED, 128x64 pixel, self-luminous
<b>Output signal</b>	2 x 0(4)...20 mA or 0...5(10) V, isolated, resolution 12 bit
<b>Current output signal</b>	load $\leq 500 \Omega$ , accuracy $\leq 0.2 \%$
<b>Voltage output signal</b>	input resistance $\geq 2 \text{ k}\Omega$ , accuracy $\leq 0.2 \%$
<b>Relay outputs</b>	<ul style="list-style-type: none"> <li>▪ 2 limit or alarm contacts, two way contact, max. 250 V AC, 5 A</li> <li>▪ PID controller, bidirectional (pulse width modulation or analog output)</li> </ul> <i>additionally for MV50xxFR:</i> <ul style="list-style-type: none"> <li>▪ 1 fault relay, two way contact, max. 24 V DC, 1 A / 24 V AC, 0.3 A</li> </ul> <p>To prevent relay damage, the load circuit must be fused for the maximum permissible current. The cable cross-section (max. 2.5 mm<sup>2</sup>) must be adapted to the maximum output current (DIN VDE 0298 Part 4, 2013-06).</p>
<b>Hold/Flow input</b>	for connecting of a flow switch or usable as a standard hold input (configurable)
<b>Interface</b>	<ul style="list-style-type: none"> <li>▪ RS232 or USB, isolated</li> </ul> <i>additionally for MV50xxFM:</i> <ul style="list-style-type: none"> <li>▪ Modbus RTU for RS485</li> </ul>
<b>Power supply</b>	<ul style="list-style-type: none"> <li>▪ MV50xxFM, MV50xxFR: 100...240 V AC, approx. 9 VA</li> <li>▪ MV50xxFM-24V, MV50xxFR-24V: 18...36 V DC, approx. 9 VA</li> </ul>
<b>Fuse</b>	<ul style="list-style-type: none"> <li>▪ MV50xxFM, MV50xxFR: Fuse 5x20 mm; slow range; 1.6 A</li> <li>▪ MV50xxFM-24V, MV50xxFR-24V: Fuse 125 mA; slow range; 24 V DC</li> </ul>
<b>Ambient temperature</b>	-10...55 °C
<b>EMC</b>	EN 61326-1:2013, class B
<b>Safety test</b>	EN 61010-1:2010
<b>Enclosure</b>	Noryl (plastic), front panel mounting IP 63 (front side), with transparent front cover IP 65, IP 20 (back side)
<b>Dimension</b>	144x144x68 mm (WxHxD) cut out according DIN 43700: 138x138 mm (with transparent protective cover 140x140 mm)
<b>Connections</b>	<ul style="list-style-type: none"> <li>▪ mountable screw-terminals for wires cross section 0.2...2.5 mm<sup>2</sup></li> <li>▪ 3 pins stereo jack socket for stereo jack</li> </ul>

- **Accessory:**
  - DinModule                      PC software program for configuration and data transmission
  - Interface MV                    Interface cable 1.8 m for RS232 interface connection to MV5000
  - Interface MV USB                Interface cable 1.8 m for USB interface connection to MV5000

	Measuring range	Electrodes / Sensors
MV5010FM MV5010FR	<ul style="list-style-type: none"> <li>▪ pH -2.00...16.00</li> <li>▪ -2000...2000 mV</li> <li>▪ -10.0...130.0 °C (Pt 1000)*</li> </ul>	<ul style="list-style-type: none"> <li>▪ combination electrode</li> <li>▪ combination electrode with integrated temperature sensor</li> <li>▪ temperature sensor Pt 1000</li> </ul>
MV5020FM MV5020FR	<ul style="list-style-type: none"> <li>▪ 0...200.0 µS/cm, 0...2000 µS/cm</li> <li>▪ 0...20.00 mS/cm, 0...100.0 mS/cm</li> <li>▪ -10.0...130.0 °C (Pt 1000)*</li> <li>▪ Cell constant 0.1 cm<sup>-1</sup>: 20.00 µS, 200.0 µS</li> <li>▪ Cell constant 0.01 cm<sup>-1</sup>: 2.000 µS, 20.00 µS</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2 electrodes measuring cell with cell constant approx. 0.01, 0.1 or 1 cm<sup>-1</sup> and integrated temperature sensor Pt 1000</li> </ul>
MV5025FM MV5025FR	<ul style="list-style-type: none"> <li>▪ 0...200.0 µS/cm, 0...2000 µS/cm</li> <li>▪ 0...20.00 mS/cm, 0...500.0 mS/cm</li> <li>▪ calculated salinity 2...42 g/kg</li> <li>▪ -10.0...130.0 °C (Pt 1000)*</li> <li>▪ Cell constant 0.1 cm<sup>-1</sup>: 20.00 µS, 200.0 µS</li> <li>▪ Cell constant 0.01 cm<sup>-1</sup>: 2.000 µS, 20.00 µS</li> </ul>	<ul style="list-style-type: none"> <li>▪ 4 electrodes measuring cell with cell constant approx. 0.3 cm<sup>-1</sup> and integrated temperature sensor Pt 1000</li> <li>▪ 2 electrodes measuring cell with cell constant approx. 0.01 or 0.1 cm<sup>-1</sup> and integrated temperature sensor Pt 1000</li> </ul>
MV5030FM MV5030FR	<ul style="list-style-type: none"> <li>▪ 0...200.0 %</li> <li>▪ 0...20.00 mg/l</li> <li>▪ -10.0...130.0 °C (Pt 1000)*</li> </ul>	<ul style="list-style-type: none"> <li>▪ membrane covered amperometric oxygen sensor with integrated temperature sensor Pt 1000</li> </ul>
MV5060FM MV5060FR	<ul style="list-style-type: none"> <li>▪ Input 0(4)...20 mA</li> <li>▪ free programmable slope / concentration (i. e. 0...2.00 mg/l)</li> <li>▪ -10.0...130.0 °C (Pt 1000)*</li> </ul>	<ul style="list-style-type: none"> <li>▪ sensor with 2 wire output especially amperometric sensors for measurement of disinfectants (chlorine, chlorine dioxide, ozone) with integrated temperature sensor Pt 1000</li> </ul>

\* NTC or Pt 100 on request

- Type:
  - MV50xxFM, MV50xxFR 100...240 V AC, current output
  - MV50xxFM-U, MV50xxFR-U 100...240 V AC, voltage output
  - MV50xxFM-24V, MV50xxFR-24V 18...36 V DC, current output
  - MV50xxFM-U-24V, MV50xxFR-U-24V 18...36 V DC, voltage output

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