

Conductivity Meter Type M3136

- ✓ 2 alarm contacts
- ✓ Temperature compensation to 120°C
- ✓ Commercially available conductivity cells with K-Factor 0.01, 0.1, 1.0 and 10 usable
- ✓ Signal output (current or voltage)
- ✓ Universal supply 20...253VAC/DC
- ✓ Modbus (optional)
- ✓ USB – logger (optional)
- ✓ Optical alarm contact
- ✓ Rail mounting 35mm



Technical description

The M3136 conductivity meter is suitable for water, waste water or pure water conditioning in continuous or batch-type operating modes, for liquid chromatography or for general chemical process monitoring.

Temperature coefficient of the cell is compensated either manually or automatically by an external Pt-100 platinum probe within the range of 0°C to 120°C.

Commercially available conductivity cells - K-factor 0.01, 0.1, 1.0 and 10 cover a dynamic range from 0.01µS to 20mS full scale. An internal synchronous rectifier eliminates the capacitive error currents induced by the cell cable.

Optionally, a galvanic isolated and in the range of 0...20mA programmable output signal for the conductivity signal or temperature is available. By an external 24V signal, the current output can be switched between conductivity- and temperature measuring.

Two floating limit or alarm contacts can be set over the entire range. Each is defined as a normally open or as a normally closed contact.

The conductivity meter M3136 uses a universal supply from 20 to 253VAC/DC.

Supply lines and all other lines, either from or to the conductivity meter, are protected by internal noise limiters against HF-noise.

Technical data

Measuring ranges:	0...2.000µS → (K = 0.1, K = 0.01) 0...20.00µS → (K = 10, K = 1.0, K = 0.1, K = 0.01) 0...200.0µS → (K = 10, K = 1.0, K = 0.1, K = 0.01) 0...2.000mS → (K = 10, K = 1.0, K = 0.1) 0...20.00mS → (K = 10, K = 1.0) 0...200.0mS → (K = 10)
Range display:	Displayed on easy to read LCD-Display
Display:	LCD-Display, 4-digit, 15mm height, color adjustable
Accuracy:	0.5%
Reproducibility:	<0.2%
Measuring frequency:	from 80Hz to 10kHz
Measuring amplitude:	70/150mV, conductive cell only
Step response:	Time between an conductivity change from 0% to 100% or reverse measured, between 10% and 90% = 4 seconds
Input protection:	Virtual zero, protected by diodes
Temperature compensation:	Manual from 0°C to 120°C, automatic by an external Pt-100 sensor, 2- or 3-wire connection. The unit calculates with 25°C when the Pt-100 sensor wires are broken.
Temperature slope:	0.00%/°C (without compensation) to 8.00%/°C
Conductivity of water:	The conductivity of water is measured and compensated.
Reference temperature:	25°C
Maximum length of cell cable:	Cable capacity is compensated automatically. The max. capacity must be <10nF.
Alarm contacts:	Two floating change-over contacts may be adjusted over the full range. Each can be defined as normally open or normally closed contact in the menu via the keys.
Status:	on easy to read LCD-Display
Hysteresis:	Adjustable, factory settings is ±5 digit
Contacts rating:	1A with resistiv load / 230VAC
Max. contact load:	100'000 operations at max. load
Max. contact lifecycle:	10'000'000 operations mechanically, without load
Option current output:	Programmable in the range of 0...20mA, galvanically isolated By an external 24V signal, the current output can be switched between conductivity- and temperature measuring. Conductivity measuring (terminal 14 & 15 open): Current output in depending of conductivity measuring Temperature measuring (terminal 14 = 0V, 15 = 24V): Current output in depending of temperature measuring
Max. load:	500Ω
Output impedance:	>1MΩ
Device settings:	Direct on the device, with push keys → see manual
Change options:	measuring ranges, cells K-factor, temperature slope, temperature, limit contacts: operating mode, hysteresis, status
Power supply:	20 to 253VAC or DC
Power supply load:	4.5W to 7.0W at 230VAC
CE-conformity:	Fulfilled
Terminals:	Plug-in screw terminals
Mounting:	35mm mounting rail, EN50022-35

Weight:	200g
Warranty:	2 years
Options:	<ul style="list-style-type: none"> - User-specified functions - Conductivity cell type M8836s and M8836si - USB-logger - Modbus (without I-Output)

Terminals

1	Supply voltage: AC~/DC(+)	9	Alarm contact 1: normally open	17	n.c.
2	Supply voltage: AC~/DC(-)	10	Alarm contact 2: change over	18	Pt-100 sensor: PE
3	Supply voltage: PE	11	Alarm contact 2: normally closed	19	Pt-100 sensor: sensor +
4	Signal output: PE	12	Alarm contact 2: normally open	20	Pt-100 sensor: sensor -
5	Signal output: Signal +	13	n.c.	21	Pt-100 sensor: sensor sense -
6	Signal output: Signal -	14	Switch signal for signal output (0V)	22	Conductivity cell: PE
7	Alarm contact 1: change over	15	Switch signal for signal output (24V)	23	Conductivity cell +
8	Alarm contact 1: normally closed	16	n.c.	24	Conductivity cell -

For Modbus versions:

4	Modbus RS485 – GND	5	Modbus RS485 – A	6	Modbus RS485 – B
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Ordering examples

Example 1:

- M3136-with Current (= with option signal output)
- Range: 0...2000µS
- Signal output: 50...500µS = 4...20mA
- Pt-100 temperature compensation activated

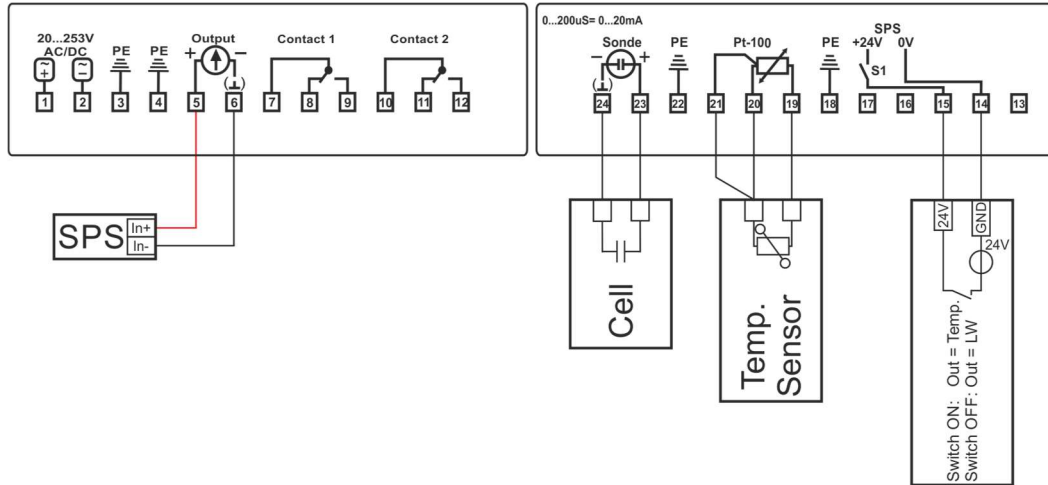
Example 2:

- M3136-with Current (= with option signal output)
- Range: 0...20.00µS
- Signal output: 0...20.00µS = 0...10VDC
- Pt-100 temperature compensation activated

Example 3:

- M3136-without Current (= without option signal output)
- Range: 0...20mS
- Pt-100 temperature compensation deactivated → temperature set to 25°

Wiring



Dimensions / Cut out dimensions

