

# SCYLAR INT M

## CALCULATOR

**DIEHL**  
Metering



### APPLICATION

The calculator SCYLAR INT M is a two-channel calculator for measuring thermal energy in heating and cooling circuits. It includes the functions of two calculators. 2 independent energy measurements can be made in one housing at the same time. It is highly suitable in an industrial surrounding. Billing-relevant data can be calculated in the range of local heating and district heating with very high precision. Due to its variety of additional functions it is also very well prepared for future requirements.

### FEATURES

- ▶ Application for heating, cooling or climate calculator
- ▶ Calculator fulfills the needs of the EN 1434
- ▶ 4 Flow sensor inputs, include 2 for energy measurement
- ▶ 4 Temperature inputs, for 2- or 4- wire measuring
- ▶ 2 Analog inputs
- ▶ 4 Active analog outputs for 0/4 - 20mA
- ▶ 4 Pulse outputs
- ▶ 1 M-Bus interface
- ▶ 1 Optical interface
- ▶ 1 USB-interface
- ▶ 1 Relay output
- ▶ 4 Further slots for extension modules (2<sup>nd</sup> MBus .....
- ▶ 12 Due days
- ▶ Programmable interval memory
- ▶ All basic adjustment are selectable with the 4 buttons

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### GENERAL

SCYLAR INT M	
Type	mwz04
Calculator	Two channel heating or cooling calculator
Number of energy measurements	2 independent energy measurements in one housing
Approval	MID
Protection type	IP 65
Power supply	230 VAC
Volume pulse	kHz max. 10 <sup>1</sup>
Pulse value	p/l 0.0001 to 99999.9999 <sup>2</sup>
Temperature sensor	Pt 100 or Pt 500

<sup>1</sup>: depending on the type of pulse generator

<sup>2</sup>: depending of the flow sensor size

### BASIC FEATURES

SCYLAR INT M	
Environment class	C after EN 1434
Ambient temperature	°C 5 ... 55
Storage temperature	°C -25 ... +70
Environmental condition	mechanical: Class M1
Environmental condition	electro magnetic: Class E2

### TEMPERATURE-INPUTS

Input option for R0 and factors a and b. Thermo-electric offset compensation 24 Bit ADC.

SCYLAR INT M	
Temperature range	absolute °C -50 to +300
Temperature difference	absolute K $\Delta T$ min < 0.001 / $\Delta T$ max 350
Temperature measuring error	max °C $\leq \pm 0.04$
Accuracy $\Delta T$	typical K 0.005
Measurement cycle	sec 1
Temperature range	MID Approval °C 0 - 300
Temperature difference	MID Approval K $\Delta T$ min 3 / $\Delta T$ max 300 (Keeping of verification errors even at $\Delta t$ 1K)
Temperature sensor type	Pt 100 or Pt 500
Temperature measuring	2 or 4-wire up to 100 m sensor cable if 4-wire measuring

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### FLOW SENSOR-INPUT

Compatible with Reed-contact, Open Collector, Open Emitter, NAMUR, CMOS/TTL, Sharky 473, BR571, BR572.  
Trend identification with status signal or "Namur-steps".

SCYLAR INT M	
Measurement cycle	sec 1
max. Flow	m <sup>3</sup> /h 360 000 000
max. Power	MW 151 200 000
Pulse value	p/l 0.0001 to 99999.9999
Pulse width min	µs 50
Reed debounced	Hz ≤ 30
Open Collector	Hz ≤ 10 000
Open Emitter	Hz ≤ 10 000
CMOS/TTL	Hz ≤ 10 000
Namur	Hz without trend identification ≤ 200
Namur	Hz with trend identification ≤ 100
Active output sensor	Hz ≤ 10 000
Sensor supply	V / mA 8.2 ; 5.0/3.6

### 2 ANALOG-INPUT

e.g.: for pressure or humidity sensors

SCYLAR INT M	
Measurement accuracy	% ≤ 1
Input signal	mA 0(4)-20
Supply	mA 25 at Input signal 0 (4)- 20 mA
Input signal	V 0(2)-10
Supply	V 11 - 27 at Input signal 0 (2) - 10 mA

### 4 ACTIVE ANALOG-OUTPUTS

0/4 - 20 mA, galvanically isolated  
Power, Flow rate, VL, RL and ΔT

SCYLAR INT M	
Burden	Ω ≤ 500
Output current	mA 0 - 20
Output current	mA 4 - 20
Overstepping	mA 20 - 22

### 4 PULSE-OUTPUTS

galvanically isolated

SCYLAR INT M	
Switching frequency	max Hz 500
Input voltage	max V 40
Current	max mA 100

### 1 RELAY-OUTPUT

SCYLAR INT M	
Switching frequency	Hz ≤ 1
Input voltage	max V 40
Current	max A 1

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### COMMUNICATION-OUTPUT

SCYLAR INT M		
M-Bus interface *	1 piece	≤ 1 Unit Load
Optical interface *	1 piece	ZVEI
USB interface *	1 piece	USB 2.0
Extension slots *	4 piece	for optional moduls e.g.: 2 <sup>nd</sup> M-Bus,...

\* :

- Baud rate options: 300 to 9600 bauds
- Primary or secondary addressing
- Protocol selectable: M-Bus, EN 61107
- Answer telegram selectable

### POWER SUPPLY

SCYLAR INT M		
Power supply		230 VAC / 50 Hz <sup>+10%</sup> / <sup>-15%</sup>
Power supply on demand 1		110 VAC / 60 Hz <sup>+10%</sup> / <sup>-15%</sup>
Power supply on demand 2		24 VAC / 50 Hz <sup>+10%</sup> / <sup>-15%</sup>
Total input power max	VA	17.5

### DISPLAY

SCYLAR INT M	
Units energy	kWh - MWh - GWh - MJ - GJ - TJ - kBtu - MBtu - GBtu - MCal - Gcal - TCal
Units volumen	m <sup>3</sup> - l - US-Gal - Ft <sup>3</sup>
Units temperature	°C - °F - K
Total values	999999.999 - 9999999.99 - 99999999.9 - 999999999
Values displayed	Energy - Power - Volume - Flow rate - Temperature and more

graphic display 64x128 with plaintext menu and back light

### CHASSIS

SCYLAR INT M		
Protection class		IP65
Cable entry	4 piece	PG7 (max. 6 piece)
Cable entry	3 piece	PG11 (max. 6 piece)

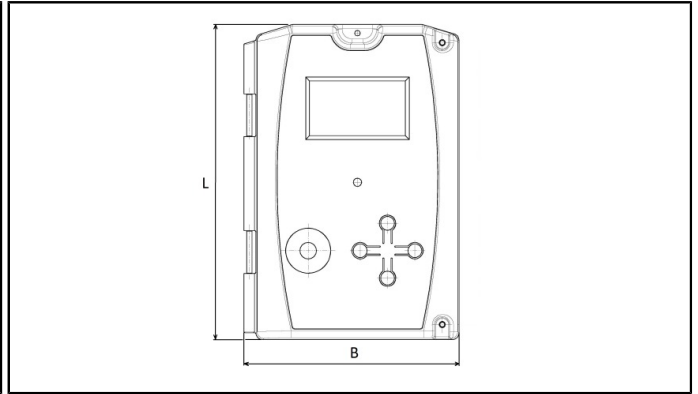
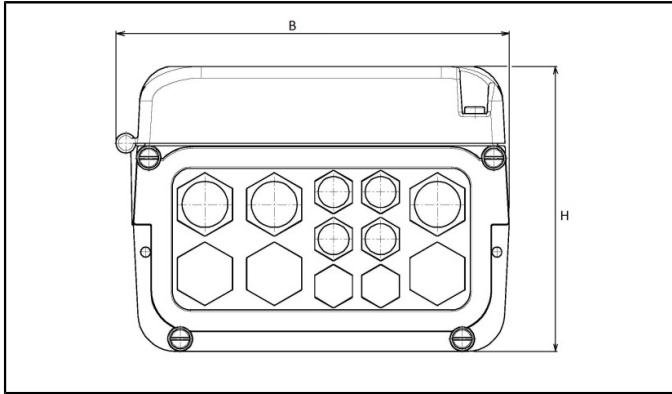
### DEVICE

SCYLAR INT M	
Tariff	8
Deadlines	12
Interval memory	60
Puffer battery	Lifetime without power supply > 6 years
Ambient class	C
Storage temperature	-25 ... +70 °C (battery lifetime: -10°C ... >3 years; -25°C ... >1 year)
Shielding	EMC
Calibrate change	simple separation from the upper part and lower part or simple removal of the connectors due to a plug system, removeable connection board with cable gland plate, DIN rail mounting of the housing
Measurement accuracy	EN 1434

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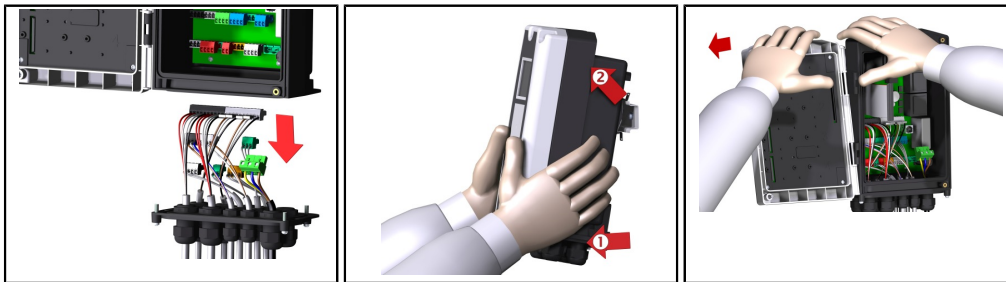
### DIMENSION



#### SCYLAR INT M

Overall length	L	mm	239.6
Width of calculator	B	mm	159
Height	H	mm	115

### VERIFICATION CHANGE



In case the calculator needs to be exchanged (e.g. after the end of the verification period) this can easily be done with just a few simple steps.

- .) The simple disconnection via the plug system,
- .) Removeable connecting plate,
- .) Top-hat rail fixing of the housing,
- .) or simple separation of the upper part from the lower part

enables a simple and fast exchange of the calculator.