Room Condition Monitor RCM 880 for Engine Rooms

Humidity, temperature and pressure



RCM 880



Multisensor E03 for RCM 880

Room condition monitor RCM 880

- Simultaneous monitoring of humidity, temperature and pressure in the engine room
- Transmission of the measured values via 3 channel analog output (e.g. 4...20 mA)
- Mechanically rugged construction for years of use in engine rooms on ships
- Optionally with integrated galvanic isolation
  → Resistant to electromagnetic interference
- Easy mechanical and electrical installation
- Low maintenance and calibration intervals
- Permanent monitoring of the operating status guarantees a safe and reliable operation
- EU-RO marine type approval, classified for use in the engine room

Digital multi sensor E03

- One measuring point for humidity, temperature and pressure
- Excellent accuracy over the full measuring range including temperature dependence and hysteresis
- Easy recalibration through integrated memory for digital zero point and slope adjustment
- Replaceable filter protects against dust and dirt
- Safe and compact electrical connection via M12 plug
- Very high vibration resistance for reliable and long-lasting operation



Monitoring of the measured values directly in the engine control room

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Why room condition monitoring?

Legal requirements

Emission standards (Tier III emission control and Emission Control Areas)
Requirements for ambient conditions (e.g. food storage)

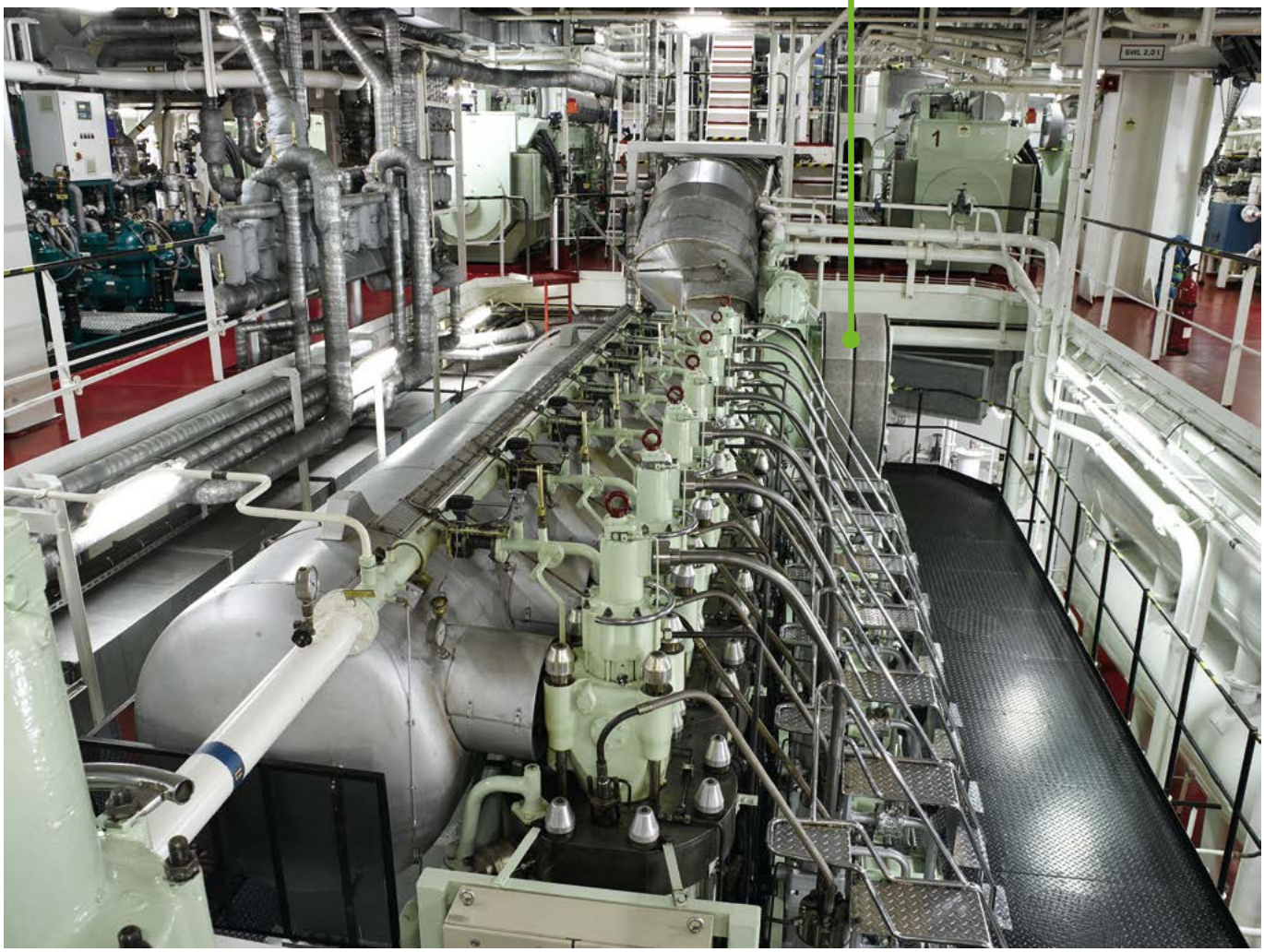
Engine control

The possibility for ship owners to make a reliable performance evaluation, including ISO correction, engine diagnostics and condition-based maintenance (CBM)
Efficiency maximization of engines in different climatic conditions

Control of air conditioning systems

For efficient control of the air conditioning system in any situation

Air intake ship engine



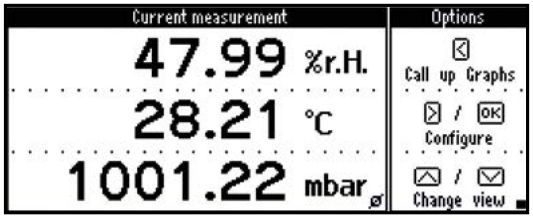
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RCM 880 in detail

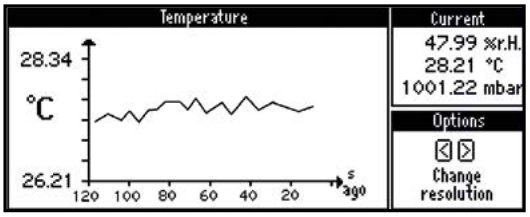


Simple and intuitive to use

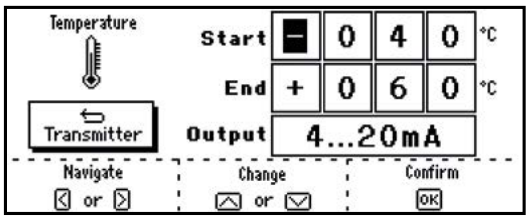
- Graphical trend display of all process parameters
- Self-explanatory operation
- Large matrix LCD with backlight
- Dirt-proof keyboard – Use in dusty or oily environments
- Selectable languages: German and English



Current values



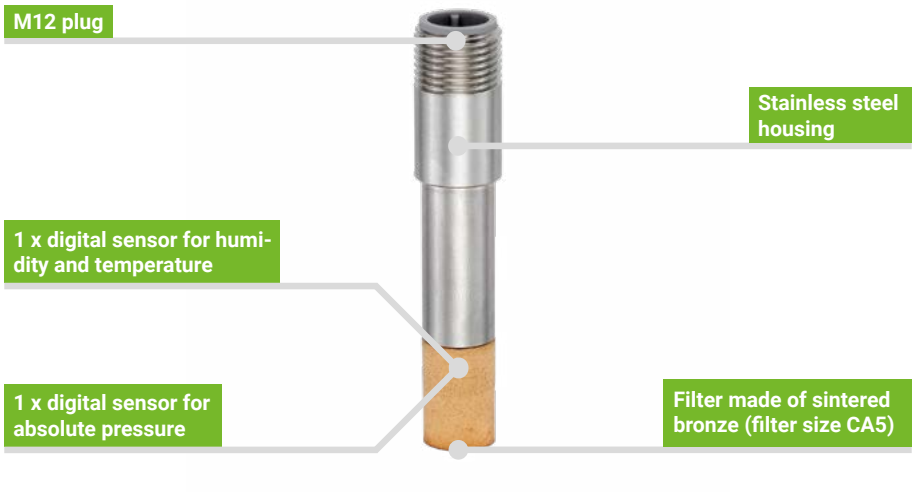
Graphical trend



Temperature output settings

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Multi sensor E03 in detail



More than “just products“ – We deliver solutions

Products for the shipbuilding industry have to work reliably and precisely under rough conditions. Strong vibrations, shocks, high temperature fluctuations and the salty moist sea air put the products to the test on a daily basis. It is therefore particularly important to focus on high-quality and safe products – Made in Germany.

Why SIKA?

The measurement and monitoring of various parameters is a daily and especially important part of the work on the ship: increase the efficiency and machine availability, prevent imminent damage, protect against failures and reduce high repair costs. SIKA develops proven products for leading engine manufactures, tailored for the special needs of the marine sector and that for more than 80 years.

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Room condition monitor RCM 880
Technical data

Technical data		
Version	Wall mounting	
Dimensions (W x H x D) → Housing with mounting plate	170 mm x 150 mm x 35 mm	6.693" x 5.906" x 1.378"
Display		
→ Type	Dot matrix graphic display	
→ Backlight	Yes (adjustable)	
→ Size (W x H)	83 mm x 33 mm	3.268" x 1.300"
→ Resolution	256 x 100 Pixel	
Indication accuracy	0.01	
Operating elements	5 capacitive keys	
Measuring rate	1 s	
Ambient temperature	-20…70 °C	-4…158 °F
Storage temperature	-20…70 °C	-4…158 °F
Degree of protection EN 60529	IP65, plug & cable connected	
Approvals		
EU RO Mutual Recognition Type Approval Certificate (Covers: ABS, BV, CCS, CRS, DNV, IRS, KR, LR, ClassNK, PRS, RINA, RS)		

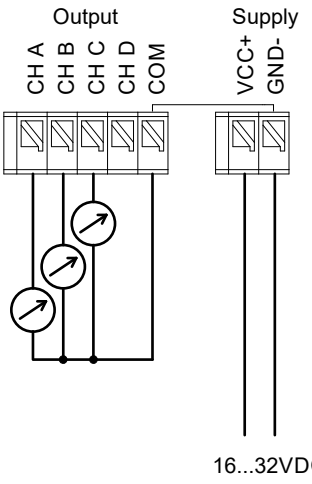
Electrical data				
Power supply	24 VDC (16…32 V)			
Current consumption	<100 mA			
Input				
Measuring element	Digital Multi sensor for humidity, temperature and pressure			
Accuracy	See technical data multi sensor type E03			
Electrical connection	4-pin plug connector M12 x 1			
Output				
Number of channels **Signals**	3 0…20 mA or 4…20 mA or 0…10 V or 0…5 V			
Measuring range				
→ Humidity	0…100 % RH			
→ Temperature	-40…85 °C		-40…185 °F	
→ Pressure	300…1200 mbar abs.			
Accuracy	16 bit / ±0.1 % of range ±1 digit @ 25 °C		16 bit / ±0.1 % of range ±1 digit @ 77 °F	
Signal error	**4…20 mA**	**0…20 mA**	**0…10 V**	**0…5 V**
→ Error Analog/Digital Converter	0 mA	0 mA	0 V	0 V
→ General error	<3.5 mA	0 mA	0 V	0 V
→ Underrange	3.8 mA	0 mA	0 V	0 V
→ Overrange	20.5 mA	20.5 mA	10 V	5 V
→ Sensor error	>21 mA	>21 mA	0 V	0 V
Electrical connection	Cable gland M16 x 1.5 (cable outer diameter 5…10 mm) Spring clamp terminal: cable cross section 0.2…1.5 mm² (without wire ferrule) cable cross section 0.25…1 mm² (with wire ferrule)			
Load				
→ Current output	Max. 500 Ω			
→ Voltage output	Min. 1.5 kΩ			

Electrical data galvanic isolation module (optional)	
Power supply	24 VDC (16…32 V)
Current consumption	<100 mA
Reverse polarity protection	yes (power supply)
Isolation test voltage	1000 VDC

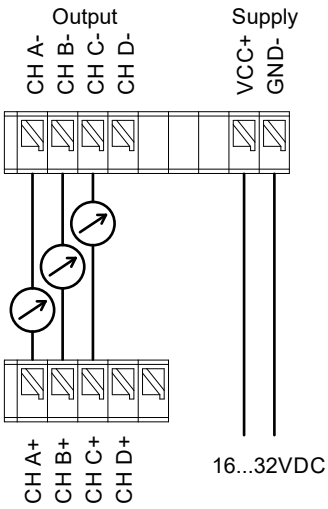
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Wiring diagram

Room condition monitor RCM 880



Room condition monitor RCM 880 with galvanic isolation module



Multi sensor type E03
Technical data

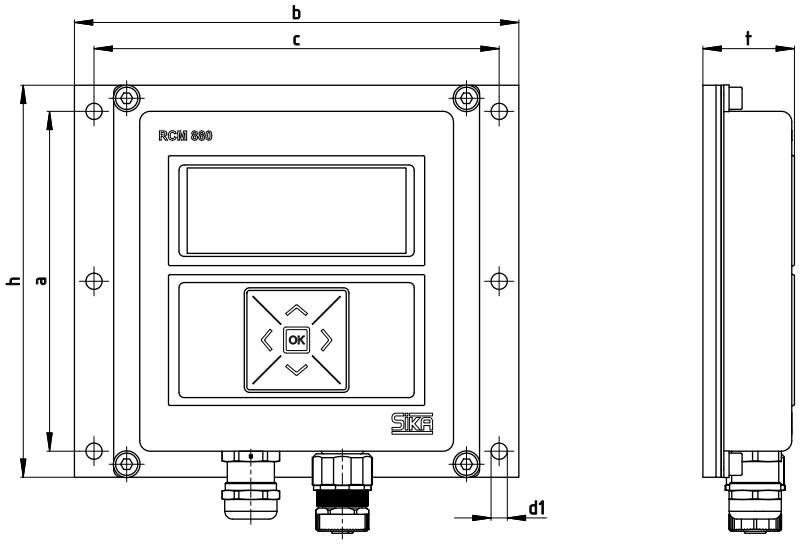
Technical data		
Type	On site multi sensor for humidity, temperature and pressure	
Measuring range		
→ Humidity	0…100 % RH	
→ Temperature	-40…85 °C	40...185 °F
→ Pressure	300…1200 mbar abs.	
Measuring medium	Ambient air (non-aggressive gases)	
Sensor length	75 mm	2.953 "
Sensor diameter	10 mm	0.394 "
Process connection	without	
Nominal pressure	N/A (atmospheric pressure)	
Ambient temperature	-40…85 °C	-40...185 °F
Storage temperature	-40…85 °C	-40...185 °F
Degree of protection EN 60529	IP40	

Electrical data		
Measuring element	1 x digital sensor for humidity and temperature 1 x digital sensor for absolute pressure	
Measuring insert	Not interchangeable / filter cap changeable	
Accuracy		
→ Humidity	±2.5 % RH @ 10...90 % RH, 20...60 °C (typ.)	±2.5 % RH @ 10...90 % RH, 68...140 °F (typ.)
→ Temperature	±0.3 K	
→ Pressure	±1.0 mbar @ 950...1050 mbar (typ.)	
Electrical connection	4-pin plug connector M12 x 1	

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Dimensions and materials

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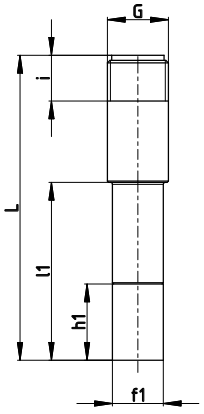


Dimensions [mm]						
Type	**b**	**h**	**a**	**c**	**d1**	**t**
RCM 880	170	150	130	155	Ø 6.2	35

Dimensions [inch]						
Type	**b**	**h**	**a**	**c**	**d1**	**t**
RCM 880	6.693	5.906	5.118	6.102	Ø 0.244	1.378

Materials	
Not in contact with medium	
Housing	Powder-coated steel, glass front window
Mounting plate	Aluminium, black anodized

Multi sensor type E03



Dimensions [mm]						
Typ	**L**	**l1**	**i**	**h1**	**G**	**f1**
E03	75	38	9	15	M12x1	Ø 10

Dimensions [inch]						
Type	**L**	**l1**	**i**	**h1**	**G**	**f1**
E03	2.953	1.496	0.354	0.591	M12x1	Ø 0.394

Materials	
In contact with media	
Immersion tube	Stainless steel 1.4571
Filter cap	Sintered bronze (filter size CA5)

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Article numbers

Order code	
Type	
Room condition monitor type 880	880TPHXMU10
Room condition monitor type 880 with int. galvanic isolation module	880TPHXMU20
Set consisting of RCM type 880 and multi sensor type E03	880TPHXMU1SET1
Set consisting of RCM type 880 with int. galvanic isolation module and multi sensor type E03	880TPHXMU2SET1
Multi sensor type E03 for room condition monitor type 880	W103E030380X00

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