

# MEASUREMENT TRANSDUCER FOR CO<sub>2</sub>, HUMIDITY AND TEMPERATURE – CF1



## THE COMPACT MEASUREMENT TRANSDUCER.

- Measures CO<sub>2</sub>, relative humidity, and temperature
- Hygromer® IN-1 humidity sensor
- Adjustable at 35 %RH or 80 %RH
- Scalable analog voltage or current outputs
- Single-relay output
- Small size
- Compatible with HW4 software
- Three programmable LEDs



**rotronic**

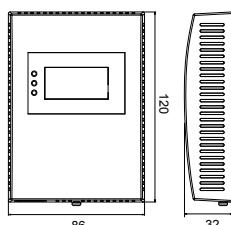
# TECHNICAL INFORMATION

The CF1 series is the latest development in reasonably-priced CO<sub>2</sub> measurement transducers with integrated humidity and temperature measurement. The unit has the proven Hygromer® IN1 sensor, and an unrivalled price-performance ratio. Its elegant design fits in perfectly in offices, living-rooms, public buildings, etc.

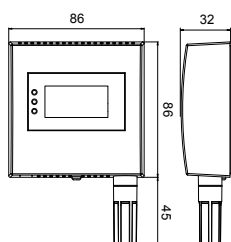
With the Rotronic SW21/HW4 software, altering the scaling is a simple matter, and the measurement transducer can be adjusted and calibrated in the humidity and CO<sub>2</sub> ranges.

## Dimensions (in mm)

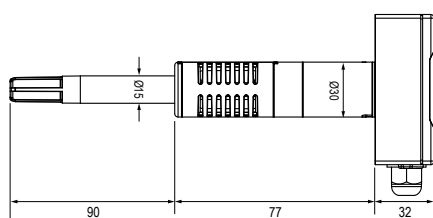
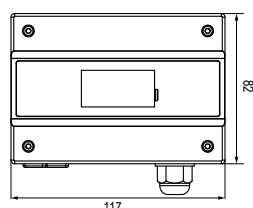
Type S



Type R



Type D



General Specifications	
Device type / Parameters	Humidity / temperature and CO <sub>2</sub>
Range of application	Electronics: 0 .. 50 °C Measuring range probe dependent 0 .. 100 %RH, non-condensing
Power supply	12..28 VAC / 15..40 VDC
Current Consumption	86.5 mA
Humidity measurement	
Humidity sensor	ROTRONIC Hygromer® IN1
Precision at 23 °C ± 5 K	<3 % RH (10..90 %RH)
Adjustment points	35, 80 %RH
Long-Term Stability	<1.5 %RH per year
Response time τ63	30s (63 % of a rise 35 .. 80 %RH) without filter
Temperature measurement	
Sensor	Thermistor
Standard temperature scaling	0...50 °C or 0..100 °F
Precision at 23 °C ± 5 K	± 0.3, ± 1 K type S with display
Response time τ63	4 s
CO <sub>2</sub> measurement	
Measurement principle	Infrared (NDIR)
Measurement range	0..2000 ppm or 0..5000 ppm
Precision at 23 °C ± 5 K	0 .. 2000 ppm ± 40 ppm ± 3 % of measured value 0 .. 5000 ppm ± 10 % of measured value
Adjustment points	400 ppm
Response time	<3 min diffusion time
Pressure dependence	+ 1.6 % of read-off per kPa
Analog outputs	
Number	3 analog outputs (1 for each parameter) The mA and V output is not exchangeable. It is always fixed as mA or V. CF132 is the current output, CF135 is the voltage output
Current output	4 .. 20 mA
Voltage output	0..1 V / 10V exchangeable via SW21/HW4 software
Load per output	V signal: ≥1kΩ/V; mA signal: ≤500 Ω
Relay	Exchangeable via software for each parameter max. switching voltage: 30 VDC / 125 VAC max. switching load: 1A at 30 VDC / 0.5A at 125 VAC min. switching load: 0.01 mA at 10 mV DC
Approval / Conformity	
RoHs conformity	Yes
CE / EMC	2014/30/EU / EN61000-6-1 / EN61000-6-2 EN61000-6-3 / EN61000-6-4
Housing / Mechanical parts	
Material	ABS
Dimensions	Type R: 131x86x32 (H,W,D) mm Type S: 120x86x32 (H,W,D) mm Type D: 82x117x32 (H,W,P) mm
IP protection class	Type S/R: IP 30 Type D: IP 65, without probe
Weight	Type R: approx. 115 g Type S: approx. 135 g Type D: approx. 220 g

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