



Measuring transducer CON50

absolute humidity g/m³
relative humidity %rh
water content g/kg dry air
enthalpy kJ/kg dry air
dew-point °C
wet-temperature °C



Description

The measuring transducer CON50 calculates the physical dimensions mentioned above by means of two input signals. These input signals may be connected with the measuring transducer as wet- and dry-temperature or as temperature and relative humidity. In the eeprom of the measuring transducer the specific formulas of absolute humidity, relative humidity, water content, enthalpy, dew-point and of the wet-temperature are stored. One of these physical dimensions can be received at output 1 by suitable adjustment of the DIP-switch. Supplementary output 2 is occupied by a temperature signal. Other input or output signals e.g. output 1 = dew-point and output 2 = enthalpy are available on demand.

Technical data

power supply 24V ±15% 48 50Hz
power consumption 3VA approx.
ambient temperature 0...+50°C
storage temperature -20...+70°C
ambient humidity 10...95%rh

Input

relative humidity 0..100%rh
or wet temperature 0...+50°C
and (dry) temperature 0...+50°C
measuring current (passive input) 2x about 1,8mA
load for current input 100 Ohm
input resistance at U_E >100 kOhm

Measuring transducer CON50 passive input

input	output	power	item no.
2xPt100	2x0(2)..10VDC	24VAC	52.600
2xPt100	2x0(4)..20mA	24VAC	52.602

Possible passive sensors

Humidity sensors			
TFG80H duct design	item no.	44700450	
TFG120 room design	item no.	45700450	
Psychrometers			
FEP1	item no.	54.001	

Measuring transducer CON50 active input

input	output	power	item no.
2x0..10VDC	2x0(2)..10VDC	24VAC	52.611
2x0..20mA	2x0(4)..20mA	24VAC	52.612

output1 transformed zones, switchable

absolute humidity 0 ... 20gH₂O/m³
..... or 0...100g H₂O/kg
relative humidity 0...100%rh
water content 0..20gH₂O/kg dry air
..... or 0...100gH₂O/kg dry air
enthalpy 0...80KJ/kg
dew-point 0...+80°C
wet-temperature 0...+50°C
output-signal 0(4)..20mA or 0(2)..10VDC
all output s in 3/4-wire system
accuracy (rel. humidity) <±2% of measuring range
accuracy (other dimensions) <1% of measuring range
resolution 0.1%

output 2

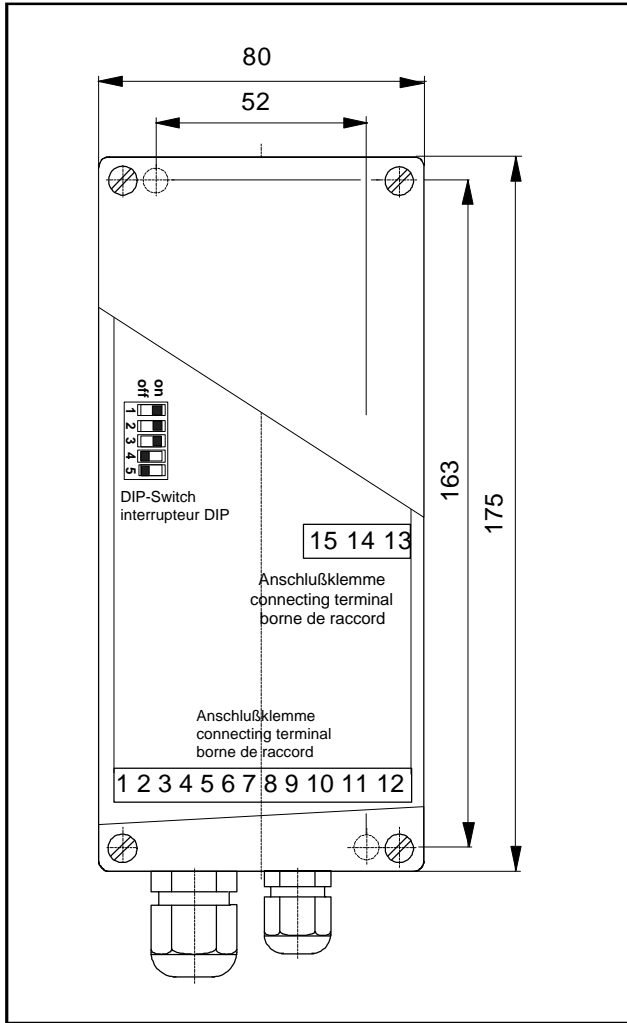
temperature measuring range 0...+50°C
output 2 0(4) 20mA or 0(2)..10VDC
all output s in 3/4-wire system
measuring accuracy <1% of measuring range
resolution 0.1%

case metal for direct mounting
electromagnetic compatibility EMC
immunity ref. EN 50 081-2
emission ref. EN 50 081-2
dimensions 175 x 80 x 57 mm
protection IP65
weight 0.7kg approx.

'reserve of technical modifications'

This information is based on our present state of knowledge and is intended to provide general notes on our products and their uses. It should not therefore be construed as guaranteeing specific properties of the products described or their suitability for a particular application. Any existing industrial property rights must be observed. The quality of our products is guaranteed under our General Conditions of Sale.
Edition: CON50_E Dec. 2001. This edition supersedes prior technical leaflets on this product.

dimensions diagram



switchable measuring ranges

physical dimension	measuring value 1	DIP-Switch reservation 1-3
dew-point	0..+80°C	on off
water content	0..20g/kg dry air	on off
water content	0..100g/kg dry air	on off
enthalpie	0..80kJ/kg	on off
relative humidity	0..100%rh	on off
absolute humidity	0..20g/m³	on off
absolute humidity	0..100g/m³	on off
wet-temperature	0..+50°C	on off

DIP-Switch 4 "on"= input 2x0..+50°C (e.g. psychrometer)
 DIP-Switch 4"off" = input 0..+50°C and 0..100%rh (e.g. TFG80H)
 DIP-Switch 5 "on"= output 0..10VDC resp. 0..20mA
 DIP-Switch 5 "off"= output 2..10VDC resp. 4..20mA

Example for CON50 with voltage output 0..10 VDC adjusted on enthalpy.

Attention

No warranty will be guaranteed when inner parts of the instrument, except DIP-switch, have been handled. Before changing the measuring ranges the instrument has to be made currentless.

connection diagram

inputs				outputs				power											
process temperature 0...50°C PT100 (TFG.) or dry-temperature 0...50°C (FEP3) psychrometer	1	2	3	rel humidity 0...100%rF 100...138.5 Ohm (TFG.) or wet-temperature 0...50°C (FEP3) psychrometer	4	5	6	7	8	process temperature or dry-temperature 0...50°C 0(2)...10VDC	9	10	measuring value 1 (acc.DIP-Switch-adjustment) 0(2)...10VDC	11	12	13	14	15	24VAC
+				+				+			+								

not galvanically disconnected negative pole = (common)

inputs				outputs				power										
process temperature 0...50°C 0...10VDC (TFG.) or dry-temperature 0...50°C 0...10VDC psychrometer	2	3	4	rel humidity 0...100%rF 0...10VDC (TFG.) or wet-temperature 0...50°C 0...10VDC psychrometer	5	6	7	8	9	10	process temperature or dry-temperature 0...50°C 0(2)...10VDC	11	12	measuring value 1 (acc.DIP-Switch-adjustment) 0(2)...10VDC	13	14	15	24VAC
+				+				+			+							

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CON50

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+				-				-			-							

not galvanically disconnected positive pole = (common)

inputs				outputs				power										
process temperature 0...50°C 0...20mA (TFG.) or dry-temperature 0...50°C 0...20mA psychrometer	2	3	4	rel humidity 0...100%rF 0...20mA (TFG.) or wet-temperature 0...50°C 0...20mA psychrometer	5	6	7	8	9	10	process temperature or dry-temperature 0...50°C 0(4)...20mA	11	12	measuring value 1 (acc.DIP-Switch-adjustment) 0(4)...20mA	13	14	15	24VAC
+				-				-			-							

not galvanically disconnected positive pole = (common)

EMC-instruction: use screened signal lines and connect the screening to earth !