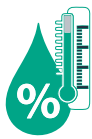


# HUMIDITY / TEMPERATURE / DEWPOINT TRANSMITTER

# SC804



Highly Accurate RH + T  
Measurement



User Programmable  
Range & Unit



Dual Row Display



RTD Pt100/Pt1000  
temperature measurement  
option available



Flameproof

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## ABOUT SC804

SC804 accurately measures humidity using capacitive sensor technology & temperature using band gap sensor technology or RTD.

It gives one or two, 2-wire, loop powered outputs, or 0~10V DC outputs that can be assigned to RH, T or Dewpoint using handheld configurator or PC based configurator. Temperature output can be analog output or resistance output from Class A RTD, Pt100 or Pt1000.

## APPLICATIONS

- Commercial buildings
- Outdoor temperature and relative humidity reference
- Greenhouses
- Swimming halls
- Storage rooms & cooling chambers
- Air economizers, Air quality

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## SPECIFICATIONS

All specifications at ambient of 25 °C, unless specified otherwise

INPUTS	
Integral sensor type	a. Smart sensor for RH and/or temperature
	b. i) Smart sensor for RH
	ii) RTD : Pt100 / Pt1000, Class A
INDICATION	
Display	Dual row LCD display
Digits	6-digit, 10.5 mm height
	7-digit, 6.94 mm height
Resolution	1 & 0.1 for RH (<100%RH), Temperature and Dewpoint
Backlight	Enable / Disable option
LED indication (if no display provided)	Green : Successful RH+T measurement
	Red : Sensor failure
OUTPUTS	
Analog output	4~20 mA, loop powered, load 800 Ω @ 24V DC
	0~10V DC, Load > 1K (0~1V DC, 0~5V DC outputs on request)
Resistance output	Two-wire resistance output for RTD sensor (Pt100 / Pt1000)
ACCURACY	
RH	± 2% RH, ± 3% RH, ± 4% RH
	See Fig 1, Table 1 and ordering information
Temperature	± 0.5 °C for bandgap temperature sensor,
	± 0.2 °C for RTD
Dewpoint	± 1 °C
ELECTRICAL CONNECTIONS	
Removable screw terminal block suitable for cable 14~22 AWG	
Torque	4kgf.cm / M2.5
Mounting orientation	Not position sensitive
PERFORMANCE	
Response time	RH - 8 seconds for $t_{63\%}$
	T - 5 to 30 seconds for $t_{63\%}$
Hysteresis	± 1 %RH
Repeatability	± 0.1 %RH & ± 0.1 °C
Long term drift (for RH+T sensor)	RH - <0.25 %RH/yr
	T - <0.02 °C/yr
Environment	Air & Neutral gas
Temperature effect on accuracy	± 0.5% of span / 25 °C
Supply voltage effect	± 0.002% of span / V
Supply ripple effect, 50/60 Hz, 5 Vp - p	± 0.005% of span

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## SPECIFICATIONS

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POWER SUPPLY		
4~20 mA loop powered models	8~30V DC, < 200 mW power consumption	
0~10V DC output models	18~30V AC/DC, < 1 W power consumption	
TEMPERATURE, HUMIDITY		
Parameter	Operating Range	Storage Range
RH	0~100 %RH	0~100 %RH non-condensing
Temperature & Dewpoint		
Without display	-40~50 °C (-40~122 °F)	-40~80 °C (-40~176 °F)
With display	-5~50 °C (23~122 °F)	-25~60 °C (-13~140 °F)
MECHANICAL		
Dimensions	See Fig 5, Fig 6	
Mounting	Wall mount / Duct mount	
Enclosure material	Light Alloy (LM6)	
Protection	IP66 as per IS/IEC:60529-2009	
Cable gland	Max three 1/2" NPT cable entries	
Certification	IS/IEC:60079-1-2007, for Gas Groups IIA & IIB	
Sensor housing material	Wall mount : SS304	
	Duct mount : SS304 with adjustable flange	
Sensor housing size	Wall mount : ø25 mm, length 50 mm	
	Duct mount : ø12 mm, length 300 mm	

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## ACCURACY OF RH & T

Fig 1

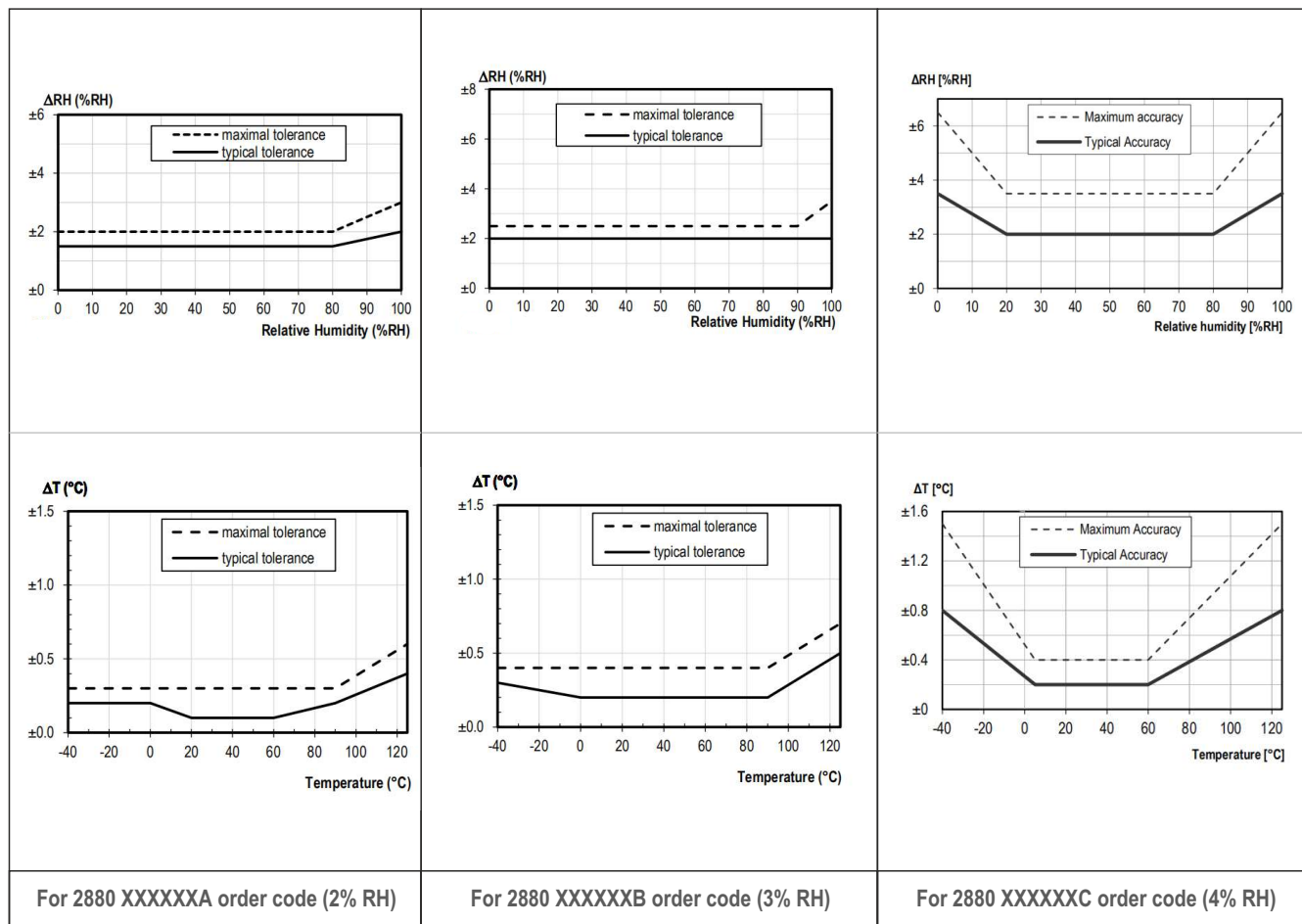


TABLE 1

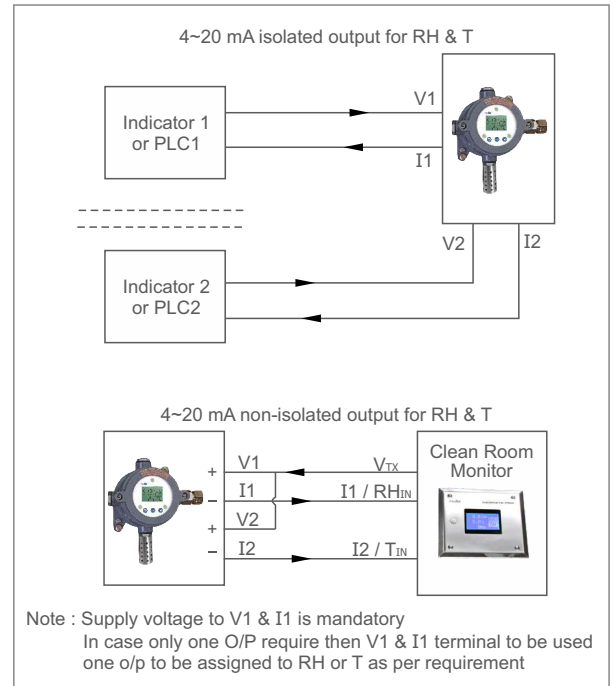
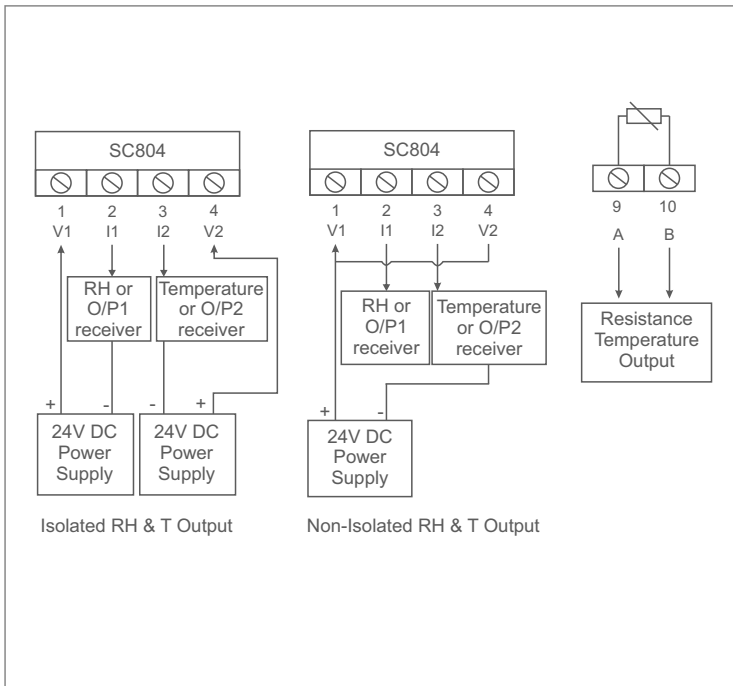
Sr. No.	Order Code	Accuracy
1	2% : 3016 xxxxxxA	±1.5% (10 to 90 %RH), ±3% (5 to 10%, 90 to 95 %RH)
2	3% : 3016 xxxxxxB	±2% (10 to 90 %RH), ±3% (5 to 10%, 90 to 95 %RH)
3	4% : 3016 xxxxxxC	±2% (20 to 80 %RH), ±4% (5 to 20%, 80 to 95 %RH)

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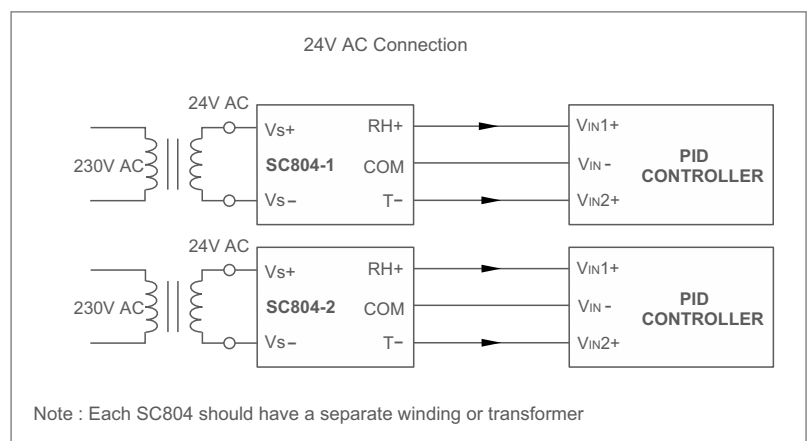
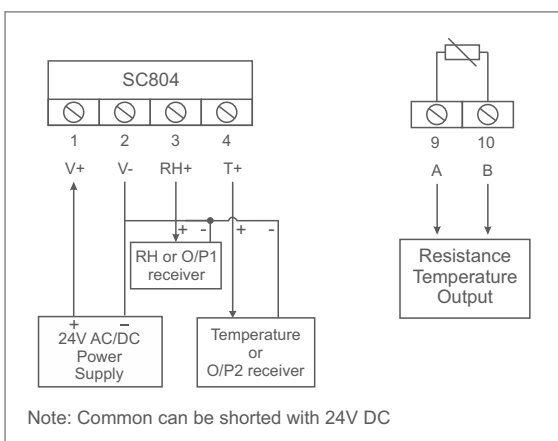
# SC804

## CONNECTION DIAGRAMS

### 4~20 mA loop powered output



### Voltage Output



# HUMIDITY / TEMPERATURE / DEWPOINT TRANSMITTER

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## DIMENSIONS mm

Fig 1 : Flameproof Wall Mount

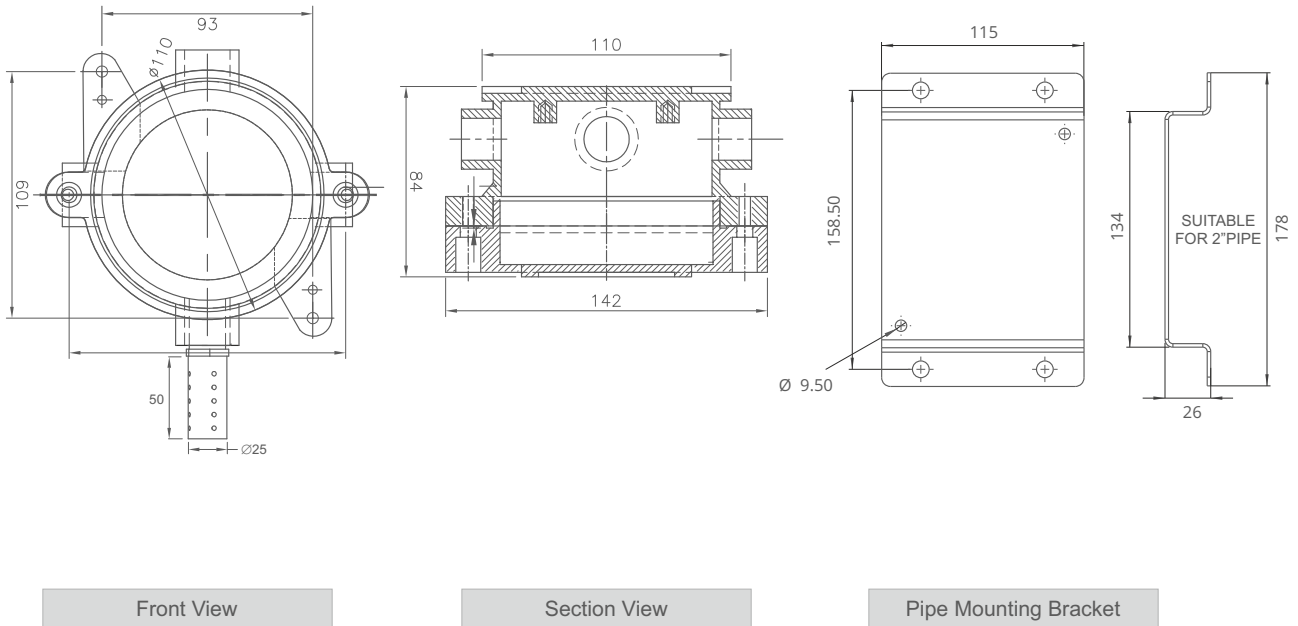
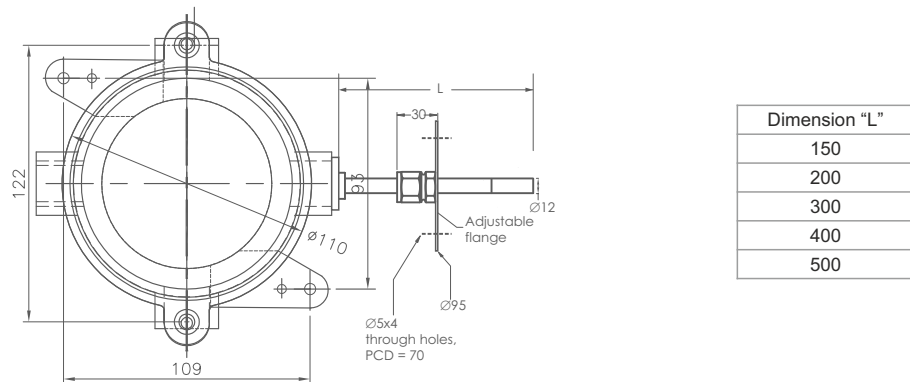


Fig 2 : Flameproof Duct Mount



# HUMIDITY / TEMPERATURE / DEWPOINT TRANSMITTER

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## FEATURES SUMMARY

- 2 x 2-wire, 4~20 mA or 0~10V DC outputs
- Any or both outputs can be assigned to RH or T or Dewpoint or specific derived physical quantity
- RH & T range selection, parameter configuration and calibration with
  - USB to serial converter (DCC501)
  - Handheld configurator (HHC202)
  - Inbuilt LCD and 3 keys
- Health / status (Heartbeat) LED
- Calculated physical quantities
  - Dewpoint
    - Absolute humidity
    - Heat index
  - Enthalpy
- High degree of protection against condensation & pollution
- Surface (Wall) and Duct
- Convenient installation with 2-part housing with fixed back and removable electronics
- Integral sensor



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## ORDERING INFORMATION

CODE	SPECIFICATIONS	1	2	3	4	5	6	7
<b>3016</b>								
	<b>Configuration</b>							
1	RH & Temperature	A						
	RH, Temperature & Dewpoint	B						
	RH, Temperature, Dewpoint, Absolute Humidity, Enthalpy, Heat Index, Air Density, etc.	C						
	<b>Mounting</b>							
2	Wall mount		1					
	Duct mount		2					
	<b>Temperature Measurement</b>							
3	Smart sensor (Bandgap)			A				
	RTD : Pt100			B				
	RTD : Pt1000			C				
	<b>LCD Display</b>							
4	None				1			
	Provided				2			
	<b>RH Output</b>							
5	4~20 mA loop powered					A		
	0~10V DC output					B		
	<b>Temperature Output</b>							
6	None						1	
	Analog output (will be same as RH output)						2	
	Pt100* resistance output						3	
	Pt1000* resistance output						4	
	<b>%RH Accuracy</b>							
7	2%							A
	3%							B
	4%							C

\* IEC 60751-95, Class A, RTD sensor

\* For other RTD resistance outputs, contact sales@radix.co.in

CODE -1-2-3-4-5-6-7

### CONFIGURATORS

Product	Model	Order Code
USB-to-Serial Converter	DCC501	2555 0
Handheld Configurator	HHC202	2863 1

Order Code Format : XXXX-X-X-X-X-X-X-X

Example

SC804, RH & Temperature, wall mount, Smart Sensor (Bandgap) 4~20 mA loop powered, %RH Accuracy : 4%,

3016-A-1-A-1-A-1-C

ENQUIRIES

**Instruments** : sales@radix.co.in • + 91 9324934061  
**Sensors** : sensors@radix.co.in • + 91 9321415829  
**Gauges** : gauges@radix.co.in • + 91 8591305907  
**Automation** : automation@radix.co.in • + 91 9320997925  
**Level** : level@radix.co.in • + 91 9324936358  
**Flow** : flow@radix.co.in • + 91 9324936358

**RADIX ELECTROSYSTEMS PVT LTD**  
 EL-135/136/137, Electronics Zone, TTC Indl. Area, MIDC, Mahape  
 Navi Mumbai - 400 710, India  
 + 91 9324934061 • sales@radix.co.in

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