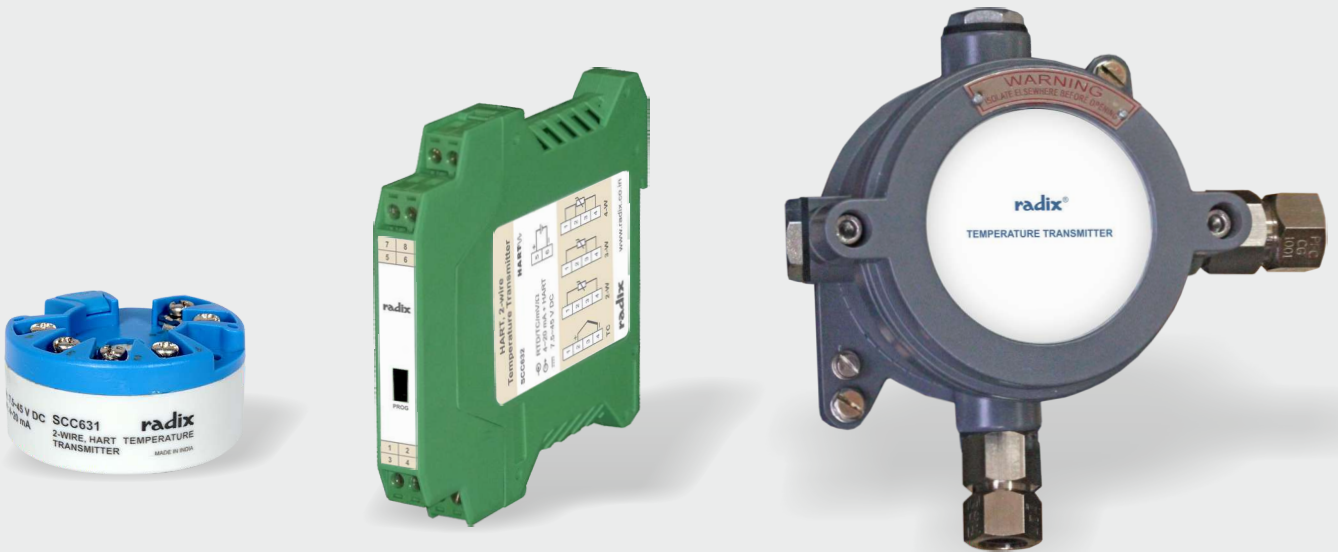


# 2-WIRE, ISOLATED TEMPERATURE TRANSMITTERS

Head Mount, Din Rail Mount, With & Without HART Protocol

# SCC6xx



2-wire, 4~20 mA Output



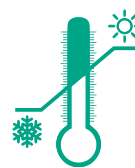
HART Communication Protocol



Response Time  
500 mS



User Programmable Ranges, Units & Input Types



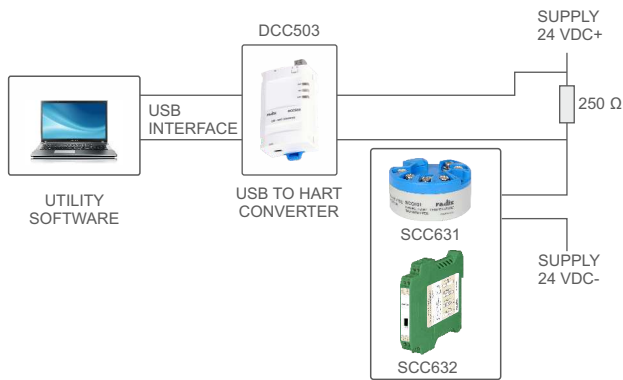
Wide Operating Temperature Range  
-20 ~ 85 °C

# 2-WIRE, ISOLATED TEMPERATURE TRANSMITTERS

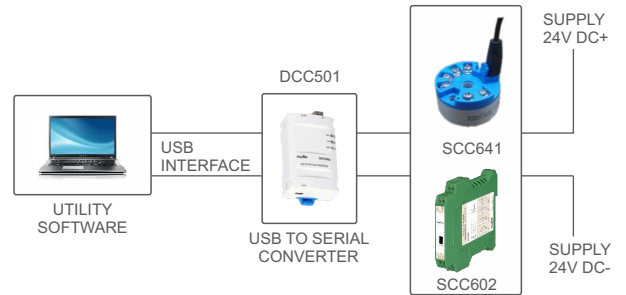
Head Mount, Din Rail Mount, With & Without HART Protocol

# SCC6XX

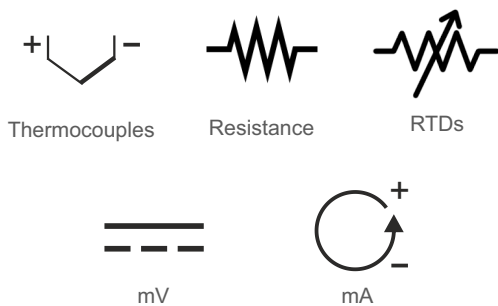
## PROGRAMMING OF INSTRUMENT VIA HART CONFIGURATOR



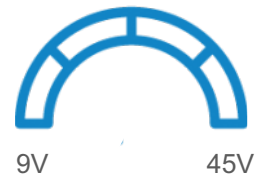
## PROGRAMMING OF INSTRUMENT VIA USB CONFIGURATOR



## UNIVERSAL INPUT : THERMOCOUPLES, RESISTANCE, RTDs, 0~500 mV, 4~20 mA



## WIDE SUPPLY VOLTAGE RANGE



## COMPACT



## FLAMEPROOF MOUNT : IN RTD HEAD / WALL / PIPE



# 2-WIRE, ISOLATED TEMPERATURE TRANSMITTERS

Head Mount, Din Rail Mount, With & Without HART Protocol

SCC6xx

## SPECIFICATIONS

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

Applicable to models SCC631, SCC641, SCC632, SCC602 unless specified otherwise

INPUT	
Input type	
Thermocouple	B, E, J, K, N, R, S, T
RTD	Pt100, Pt500, Pt1000, Cu53, Ni100, Ni500, Ni1000 (2-wire, 3-wire & 4-wire)
Resistance	0~400 Ω, 0~2000 Ω, 0~5000 Ω
Linear voltage	-10~75 mV, -100~100 mV, -100~500 mV
Linear current	4~20 mA (when 4~20 mA input given then RTD 4-wire input not available)
Range limits	See Table 1
RTD excitation	0.250 mA (0.1 mA for 0~2000 Ω)
Cold junction compensation	Automatic (for thermocouples)
Underranging	3.8 mA
Overranging	Linear upto 22.0 mA
SENSOR BREAK DETECTION	
Preset output	Upscale ~ 22.0 mA
	Downscale ~ 3.8 mA
OUTPUT	
Output signal	4~20 mA
Load	Max (V power supply - 9V) / 0.0208A
Resolution	0.3 μA
Response time	Approx 500 ms
Switch on delay	≤ 5s
Input/output relation	TC : Temperature linear
	RTD : Temperature linear
	Voltage : Linear
	Resistance : Linear
Input/output isolation	1500 VAC, 1 minute
ACCURACY	
Accuracy	See Table 1
Temperature coefficient of accuracy	See Table 1
Lead resistance effect	
Pt100, 3-wire	<0.1 °C upto 50 Ω individual lead resistance (balanced)
Supply voltage effect	± 0.001% of span / V
Supply ripple effect, 50/60hz, 5 Vp - p	± 0.005% of span
Long term stability	≤ 0.05% / year
CJC error	± 0.5 °C
Common-mode rejection ratio (CMRR)	>120db
POWER SUPPLY	
Supply voltage	9 to 45 V DC
Reverse polarity	Protected
ENVIRONMENTAL CONDITIONS	
Ambient, storage	-40 to 85 °C (-40 to 185 °F)
Ambient, operation	-20 ~ 85 °C
Relative humidity	0 ~ 95%

# 2-WIRE, ISOLATED TEMPERATURE TRANSMITTERS

Head Mount, Din Rail Mount, With & Without HART Protocol

SCC6xx

## SPECIFICATIONS

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

Applicable to models SCC631, SCC641, SCC632, SCC602 unless specified otherwise

PROGRAMMABLE PARAMETERS	
List of parameters	Range
	Unit
	Sensor break detection
	Offset for PV
	Input type (in SCC602, SCC641)
HART COMMUNICATION (SCC631, SCC632 only)	
HART revision	HART 5, HART 7
HART commands	All generic HART commands
Number of instruments in multidrop mode	7
HART parameters configured via HART interface	Range
	Unit
	Damp value
	HART short address
	HART long address
	Tag
Radix make PC based HART programmer	DCC503 + software utility
Radix make handheld HART programmer	HHC201
Note : DCC503/HHC201 can be used for input selection, calibration and additional parameters configuration	
ENCLOSURE - DIN RAIL (SCC632, SCC602)	
Dimensions	100(H) x 12.5(W) x 114(D) mm See Fig 4
Material	Nylon 6 (PA66)
Protection	IP20
Weight	Approx. 90g
ENCLOSURE - HEAD MOUNTED (SCC631, SCC641)	
Dimensions	44 x 22.5 mm See Fig 5
Material	
	Body PC
	Cover ABS
Suitable head	DIN B-head or larger
Connection	2.5 mm <sup>2</sup> , AWG 14 single/stranded wires
Protection	IP00
Weight	40 grams
ENCLOSURE - FLAMEPROOF	
Dimensions	142(H) x 84(D) mm See Fig 6
Material	Light Alloy (LM6)
Protection	IP66 as per IS/IEC:60529-2009
Cable gland	Two 1/2" NPT cable entry
Certification	IS/IEC:60079-1-2007 for gas groups IIA & IIB

# 2-WIRE, ISOLATED TEMPERATURE TRANSMITTERS

Head Mount, Din Rail Mount, With & Without HART Protocol

SCC6xx

**TABLE 1**

SENSOR / INPUT	RANGE LIMITS		MINIMUM SPAN (°C)	ACCURACY AT 25 °C (°C / EU)	TEMPERATURE COEFFICIENT OF ACCURACY
	LOW SCALE	HIGH SCALE			
Pt - 6% Rh / Pt - 30% Rh (B)	400 °C	1820 °C	500 °C	± 2.0 °C or 0.08% of span	1.25 µV + 0.007 % of reading per °C
Chromel / Constantan (E)	-200 °C	1000 °C	50 °C	± 0.5 °C or 0.08% of span	1.25 µV + 0.007 % of reading per °C
Iron / Constantan (J)	-210 °C	1200 °C	50 °C	± 0.5 °C or 0.08% of span	1.25 µV + 0.007 % of reading per °C
Chromel / Alumel (K)	-200 °C	1372 °C	50 °C	± 0.5 °C or 0.08% of span	1.25 µV + 0.007 % of reading per °C
Nicrosil / Nisil (N)	-200 °C	1300 °C	50 °C	± 1 °C or 0.08% of span	1.25 µV + 0.007 % of reading per °C
Pt / Pt - 13% Rh (R)	0 °C	1768 °C	500 °C	± 2 °C or 0.08% of span	1.25 µV + 0.007 % of reading per °C
Pt / Pt - 10% Rh (S)	0 °C	1768 °C	500 °C	± 2 °C or 0.08% of span	1.25 µV + 0.007 % of reading per °C
Copper / Constantan (T)	-200 °C	400 °C	50 °C	± 0.5 °C or 0.08% of span	1.25 µV + 0.007 % of reading per °C
Pt100 *	-200 °C	850 °C	10 °C	± 0.2 °C or 0.08% of span	0.003 % of span per °C
Pt500 *	-200 °C	250 °C	10 °C	± 0.5 °C or 0.20% of span	0.007 % of span per °C
Pt1000 *	-200 °C	250 °C	10 °C	± 0.3 °C or 0.12% of span	0.036 % of span per °C
Ni100 (6180ppm/K) *	-60 °C	180 °C	10 °C	± 0.2 °C or 0.08% of span	0.003 % of span per °C
Ni500 (6180ppm/K) *	-60 °C	180 °C	10 °C	± 0.5 °C or 0.20% of span	0.007 % of span per °C
Ni1000 (6180ppm/K) *	-60 °C	150 °C	10 °C	± 0.3 °C or 0.12% of span	0.036 % of span per °C
Cu53 *	-50 °C	150 °C	10 °C	± 0.2 °C or 0.08% of span	0.003 % of span per °C
0 to 400 Ω *	0 Ω	400 Ω	10 Ω	± 0.1 Ω or 0.08% of span	0.003 % of span per °C
0 to 2000 Ω *	0 Ω	2000 Ω	20 Ω	± 1.5 Ω or 0.12% of span	0.007 % of span per °C
0 to 5000 Ω *	0 Ω	5000 Ω	100 Ω	± 7.5 Ω or 0.20% of span	0.036 % of span per °C
-10 to 75 mV	-10 mV	75 mV	5 mV	± 20 µV or 0.08% of span	0.006 % of span per °C
-100 to 100 mV	-100 mV	100 mV	5 mV	± 20 µV or 0.08% of span	0.006 % of span per °C
-100 to 500 mV	-100 mV	500 mV	6 mV	± 30 µV or 0.08% of span	0.006 % of span per °C
4~20 mA	4 mA	20 mA	16 µA	± 20 µV or 0.08% of span	0.007 % of span per °C

\* Accuracy specified is for 2, 3 and 4-wire RTD & resistance inputs. For 2-wire, lead resistance is taken as '0' ohms.

# 2-WIRE, ISOLATED TEMPERATURE TRANSMITTERS

Head Mount, Din Rail Mount, With & Without HART Protocol

SCC6xx

## ELECTRICAL CONNECTIONS

Fig 1 : Head mount - SCC631/SCC641

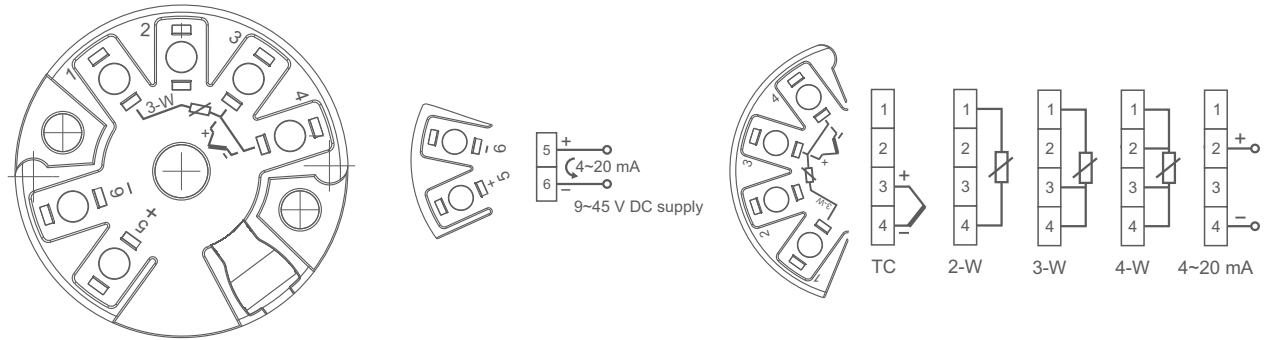


Fig 2 : Din rail mount - SCC602

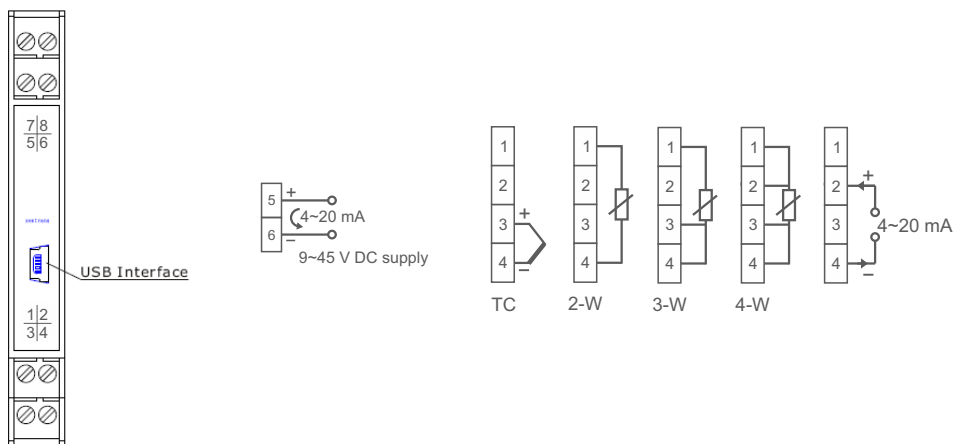
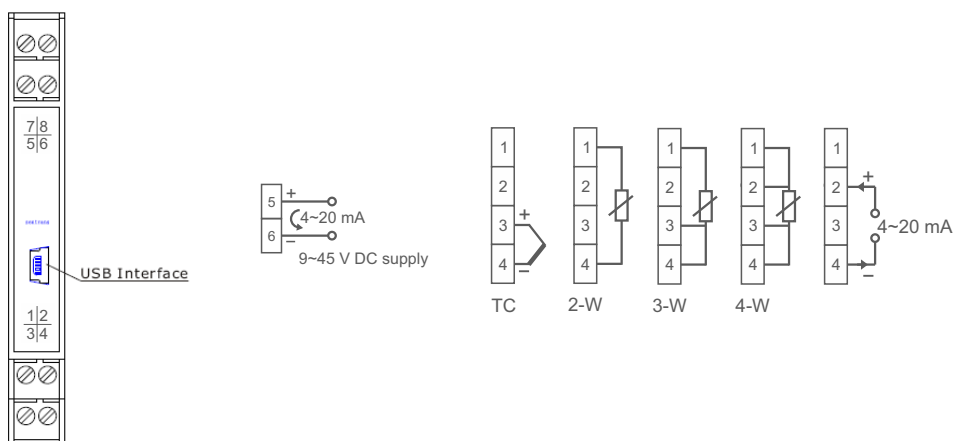


Fig 3 : Din rail mount - SCC632



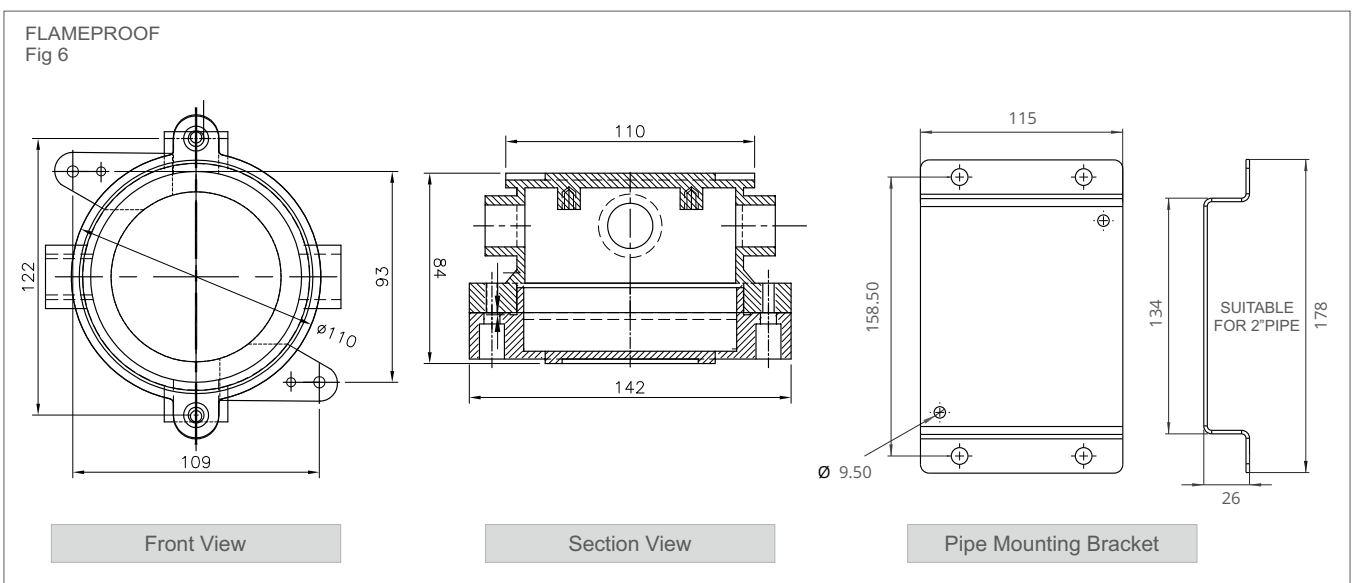
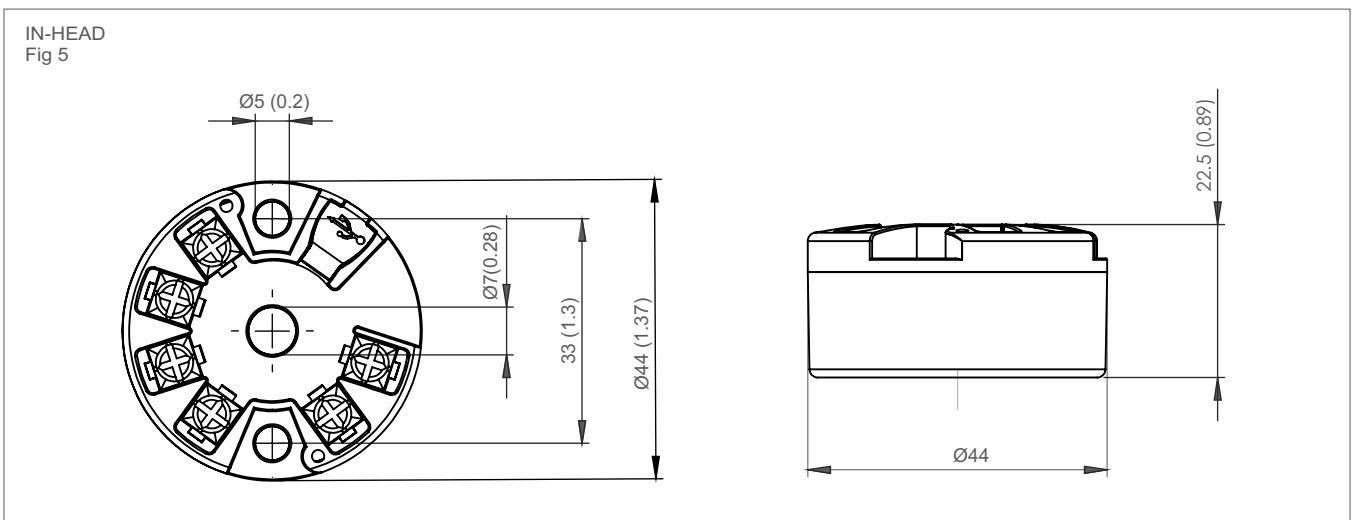
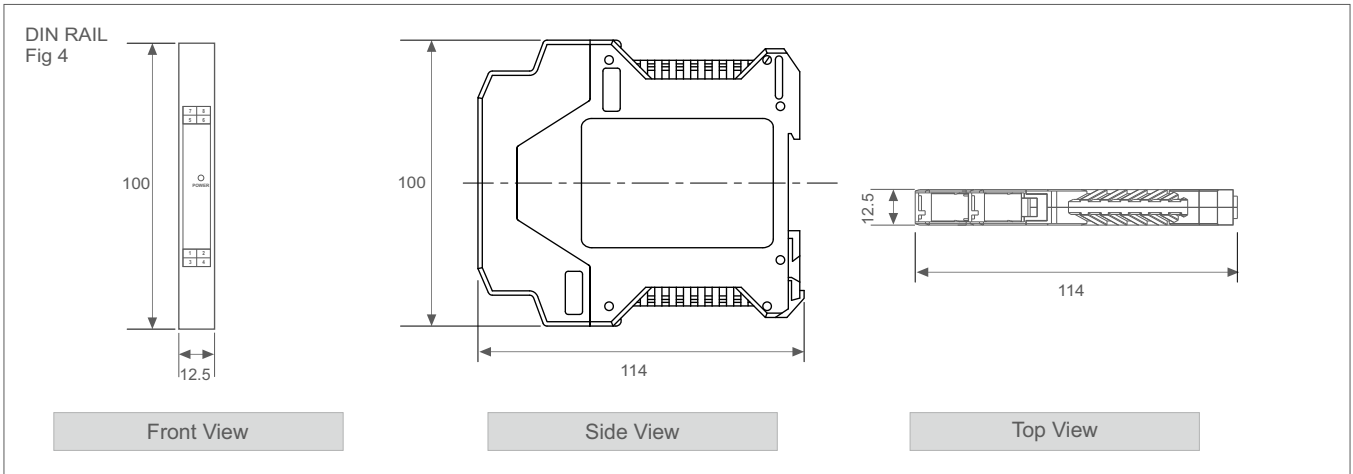
**HART**

# 2-WIRE, ISOLATED TEMPERATURE TRANSMITTERS

Head Mount, Din Rail Mount, With & Without HART Protocol

# SCC6xx

## DIMENSIONS mm



# 2-WIRE, ISOLATED TEMPERATURE TRANSMITTERS

Head Mount, Din Rail Mount, With & Without HART Protocol

# SCC6xx

## FEATURES SUMMARY

- Universal settings with HART protocol for various input signals
- 2-wire technology, 4~20 mA analog output
- High accuracy over total ambient temperature range
- Optical isolation
- An internal temperature sensor for active temperature compensation
- Wide supply voltage range
- User programmable measurement range settings
- Configuration with HART/USB interface
- Simple and user friendly utility software

## ORDERING INFORMATION

### SCC631, SCC641 - HEAD MOUNT TRANSMITTERS

CODE	SPECIFICATIONS	1
<b>2281</b>	SCC631 (With HART)	
<b>2295</b>	SCC641	
1	<b>Enclosure</b>	
	Head Mount	1
	Flameproof - Surface Mount	2
	Flameproof - Pipe Mount	3

CODE-1

**Order Code Format : XXXX-X**

Example

SCC631, Head mount  
2281-1

### Default Parameters (If customer has not specified different values)

Input type : Pt100, 3-wire  
Range : 0~150 °C  
Sensor break : Upscale, 22mA

If user wishes to program the input and range, user must purchase separately the USB to serial converter DCC501 or USB to HART Converter DCC503.

### ACCESSORIES & CONVERTERS (To be purchased separately)

DETAILS	MODEL	RADIX PART NO. / ORDER CODE
Handheld HART Programmer - Radix make	HHC201	2826
USB to Serial Converter - Radix make	DCC501	2555 0
USB to HART Converter (For SCC631, SCC632) - Radix make	DCC503	2556
Utility Software	-	2794

ENQUIRIES

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Gauges: gauges@radix.co.in • + 91 8591305907  
Automation: automation@radix.co.in • + 91 9320997925  
Level: level@radix.co.in • + 91 9324936358  
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