

# Temperature Transmitter (Head Mount Type)

Model No. **KIT-TT10 Series**

**KINS**



**KIT-TT10 Series**



Universal head transmitter for resistance thermometers (RTD), thermocouples (TC), resistance, ( $\Omega$ ) voltage transmitters,

## Application areas

- Temperature Transmitter (Head Mount Type) with HART-protocol for converting various input signals into a scalable 4 to 20 mA analogue output signal
- Input
  - Resistance thermometer (RTD)
  - Thermocouple (TC)
  - Resistance transmitter ( $\Omega$ )
  - Voltage transmitter (mV)

## Performance

- 2 wire technology, 4 to 20mA analogue output
- High accuracy in total ambient temperature range
- Galvanic isolation(Excluded in case of KIT-TT12)
- An internal temperature sensor for active temperature compensation(For T/C)
- Wide voltage supply range
- Expanded resistance input (max 2K $\Omega$ )
- Expanded voltage input (max 2Kmv)

## Technical data

<b>Power supply</b>	
Supply voltage	7.5 to 45 VDC(without display) , polarity protected
<b>Output</b>	
Output signal	4 to 20 mA
Signal on alarm	Underranging Linear drop to 3.8 mA
	Overranging linear rise to 20.5 mA
	Sensor break; sensor open-circuit 3.6 mA
Load	max. $(V_{\text{power supply}} - 7.5 \text{ V}) / 0.022 \text{ A}$
Linearisation/transmission behaviour	Temperature linear, resistance linear, voltage linear
Galvanic isolation	U=2000V AC (input/output)

Pressure Gauge

Differential Pressure Gauge & Switch

Accessories of Pressure Gauge

Thermometer & Thermometer Switch

Thermocouple & RTD

Thermowell

Transmitter

Indicator etc.

Technical data

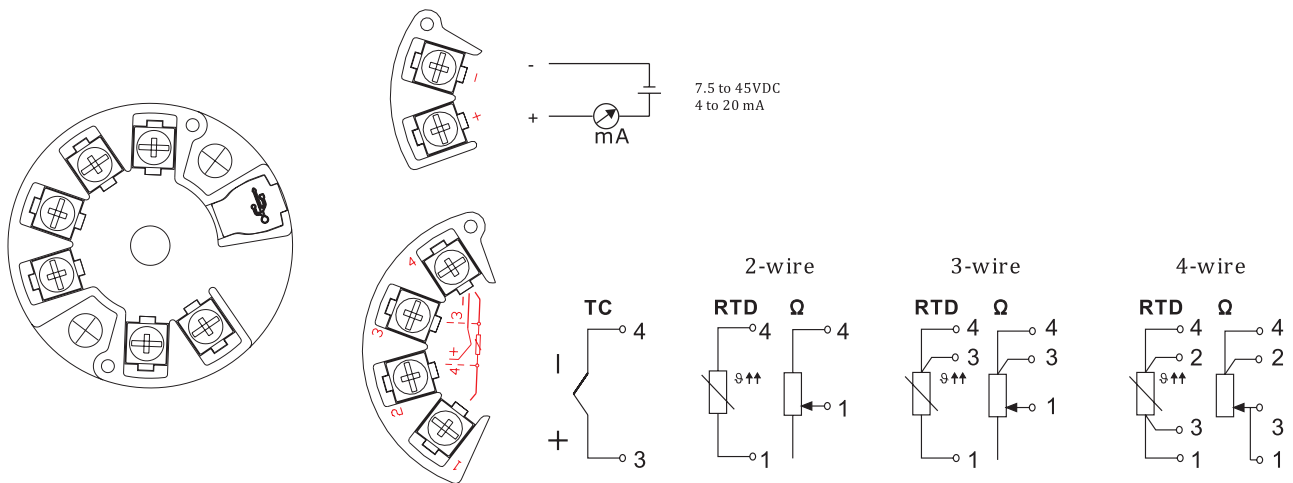
# Temperature Transmitter (Head Mount Type)

Model No. **KIT-TT10 Series**

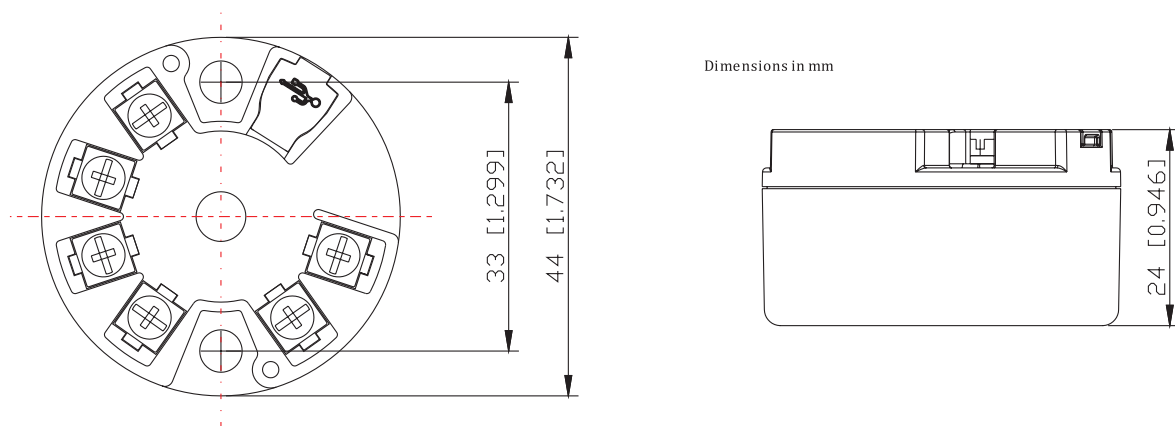
Input			
Input	Type	Measurement ranges	Min.meas.Ranges
Resistance thermometer(RTD)	Pt100	-200°C to 850°C (-328°F to 1562°F)	10K
	Pt500	▲ -200°C to 250°C (-328°F to 482°F)	10K
	Pt1000	▲ -200°C to 250°C (-328°F to 482°F)	10K
	Cu50	-50°C to 150°C (-58°F to 302°F)	10K
	Cu100	-50°C to 150°C (-58°F to 302°F)	10K
	*Ni100	-60°C to 180°C (-76°F to 356°F)	10K
	*Ni500	▲ -60°C to 180°C (-76°F to 356°F)	10K
	*Ni1000	▲ -60°C to 150°C (-76°F to 302°F)	10K
Resistance transmitter	Resistance(Ω)	0 to 400 Ω	10 Ω
		▲ 0 to 2000 Ω	20 Ω
Connection type:2-,3- or 4-wire connection			
Thermocouples(TC)	B(PtRh30-PtRh6)	0 to 1820°C( 32 to 3308°F)	500K
	E(NiCr-CuNi)	-270 to 1000°C(-454 to 1832°F)	50K
	J(Fe-CuNi)	-210 to 1200°C(-346 to 2192°F)	50K
	K(NiCr-Ni)	-270 to 1372°C(-454 to 2501°F)	50K
	N(NiCrSi-NiSi)	-270 to 1300°C(-454 to 2372°F)	50K
	R(PtRh13-Pt)	-50 to 1768°C( -58 to 3214.4°F)	500K
	S(PtRh10-Pt)	-50 to 1768°C(-58 to 3214.4°F)	500K
	T(Cu-CuNi)	-270 to 400°C(-454 to 752°F)	50K
Voltage transmitters(mV)	Millivolt transmitter(mV)	-10 to 75mV	5mV
		▲ -100 to 100mV	5mV
		▲ -100 to 500mV	6mV
		▲ -100 to 2000mV	20mV
▲ on request			
Performance characteristics			
Response time	1 s		
Reference operating conditions	Calibration temperature: 23°C(73.4°F)5K		
Long term stability	≤0.05%/year		
Switch on delay	≤5s		
Influence of ambient	Negligible		
Load influence	Negligible		
Power supply influence	Negligible		
Self stability configuration	0 to 2%		
Filter configurating	0 to 160 μ A		
Resolution	0.3 μ A		
Maximum measured error	Input	Type	Measurement accuracy
		RTD	Pt100, Ni100 Pt500, Ni500 Pt1000, Ni1000 Cu50 Cu100
	TC	K, J, T, E N	typ.0.5K or 0.08% typ.1.0K or 0.08%
		S, B, R	typ.2.0K or 0.08%
Ω	0 to 400 Ω	±0.1Ω or 0.08%	
	0 to 2000 Ω	±1.5Ω or 0.12%	
mV	-10 to 75mV	±20μV or 0.08%	
	-100 to 100mV	±0μV or 0.08%	
	-100 to 500mV	±0μV or 0.08%	
	-100 to 2000mV	±0μV or 0.08%	

Temperature	
Ambient temperature limits	-40 to 85°C (-40°F to 185°F)
Storage temperature	-40 to 100°C (-40°F to 212°F)
Condensation	Allowable
Others	
Dimensions	Dia. 44 mmX24 mm
Weight	Approx. 34g
Material	Housing: PC Potting: epoxy

## Electrical connections



## Dimensions

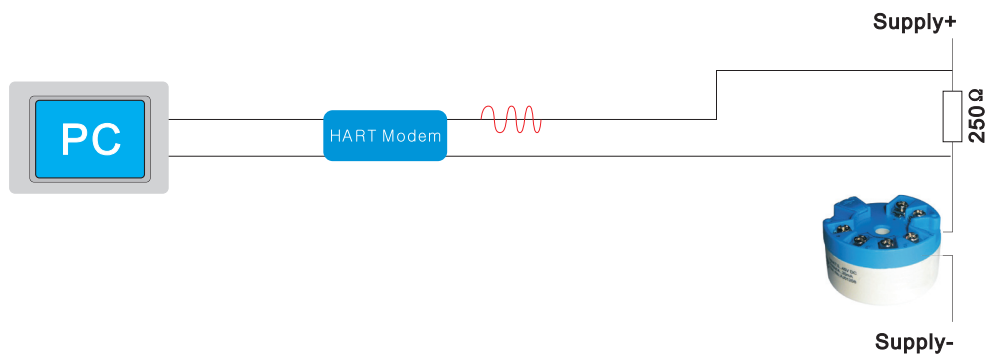


- Pressure Gauge
- Differential Pressure Gauge & Switch
- Accessories of Pressure Gauge
- Thermometer & Thermometer Switch
- Thermocouple & RTD
- Thermowell
- Transmitter
- Indicator etc.
- Technical data

# Temperature Transmitter (Head Mount Type)

Model No. **KIT-TT10 Series**

## How to programme



## Ordering code

© KIT - T T

- 2 : Input - RTD (Only)
- 3 : Input - Multi (RTD/TC/ $\Omega$ /mV)
- 4 : Input - Multi (RTD/TC/ $\Omega$ /mV) with Hart Protocol
- 1 : Head Mounted Type

Pressure Gauge

Differential Pressure Gauge & Switch

Accessories of Pressure Gauge

Thermometer & Thermometer Switch

Thermocouple & R.T.D

Thermowell

Transmitter

Indicator etc.

Technical data

# Temperature Transmitter (Field Mount Type)

Model No. **KIT200-T Series**

**KINS**



**KIT200-T Series**



- Field mounted temperature transmitter KIT200-T for resistance thermometers(RTD), thermocouples(TC), resistance and voltage transmitters, settable via HART-protocol
- High performance, high reliability
- Variety of sensor inputs
- Digital communication
- Self-diagnostics function
- LCD display with bargraph

## Application areas

- Field mounted temperature transmitter with HART- protocol for converting various input signals into a scalable 4 to 20 mA analogue output signal
- Input
  - Resistance thermometer (RTD)
  - Thermocouple (TC)
  - Resistance transmitter ( $\Omega$ )
  - Voltage transmitter (mV)

## Performance

- Universal settings with HART-protocol for various input signals
- 2 wire technology, 4 to 20mA analogue output
- High accuracy in total ambient temperature range
- Galvanic isolation
- An internal temperature sensor for active temperature compensation(For T/C)
- Wide voltage supply range
- Customer specific measurement range settings
- Multiparametric backlight rotatable LCD Display
- Expanded resistance input (max 2K $\Omega$ )
- Expanded voltage input (max 2K mV)

## Technical data

Power supply	
Supply voltage	7.5 to 45 VDC(without display) , polarity protected
Output	
Output signal	4 to 20 mA
Signal on alarm	Underranging Linear drop to 3.8 mA
	Overranging linear rise to 20.5 mA
	Sensor break; sensor open-circuit 3.6 mA
Load	max.( $V_{\text{power supply}} - 7.5 \text{ V}$ )/0.022 A
Linearisation/transmission behaviour	Temperature linear, resistance linear, voltage linear
Galvanic isolation	U=2000V AC (input/output)
Installation conditions	
Installation instructions	Installation angle:no limit
	Installation area:Connection head accord. To DIN 43 729 Form B; TAF 10 field housing

# Temperature Field mounted Transmitter

Model No. **KIT200-T Series**

Input			
Input	Type	Measurement ranges	Min.meas.Ranges
Resistance thermometer(RTD)	Pt100	-200°C to 850°C (-328°F to 1562°F)	10K
	Pt500	▲ -200°C to 250°C (-328°F to 482°F)	10K
	Pt1000	▲ -200°C to 250°C (-328°F to 482°F)	10K
	Cu50	-50°C to 150°C (-58°F to 302°F)	10K
	Cu100	-50°C to 150°C (-58°F to 302°F)	10K
	*Ni100	-60°C to 180°C (-76°F to 356°F)	10K
	*Ni500	▲ -60°C to 180°C (-76°F to 356°F)	10K
	*Ni1000	▲ -60°C to 150°C (-76°F to 302°F)	10K
Resistance transmitter	Resistance(Ω)	0 to 400Ω	10Ω
		▲ 0 to 2000Ω	20Ω
Connection type:2-,3- or 4-wire connection			
Thermocouples(TC)	B(PtRh30-PtRh6)	0 to 1820°C( 32 to 3308°F)	500K
	E(NiCr-CuNi)	-270 to 1000°C(-454 to 1832°F)	50K
	J(Fe-CuNi)	-210 to 1200°C(-346 to 2192°F)	50K
	K(NiCr-Ni)	-270 to 1372°C(-454 to 2501°F)	50K
	N(NiCrSi-NiSi)	-270 to 1300°C(-454 to 2372°F)	50K
	R(PtRh13-Pt)	-50 to 1768°C(-58 to 3214.4°F)	500K
	S(PtRh10-Pt)	-50 to 1768°C(-58 to 3214.4°F)	500K
	T(Cu-CuNi)	-270 to 400°C(-454 to 752°F)	50K
Voltage transmitters(mV)	Millivolt transmitter(mV)	-10 to 75mV	5mV
		▲ -100 to 100mV	5mV
		▲ -100 to 500mV	6mV
		▲ -100 to 2000mV	20mV

▲ on request

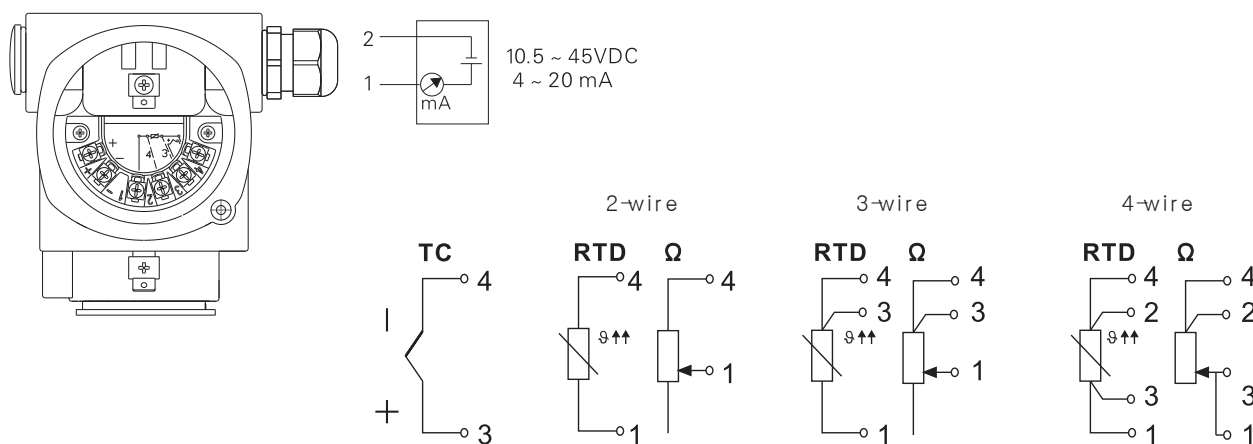
## Performance characteristics

Response time	1 s
Reference operating conditions	Calibration temperature: 23°C(73.4°F)5K
Long term stability	≤0.05%/year
Switch on delay	≤5s
Influence of ambient	Negligible
Load influence	Negligible
Power supply influence	Negligible
Self stability configuration	0 to 2%
Filter configuring	0 to 160 μ A
Resolution	0.3 μ A

Maximum measured error	Input	Type	Measurement accuracy
	RTD		Pt100, Ni100
Pt500, Ni500			0.5K or 0.20%
Pt1000, Ni1000			0.3K or 0.12%
Cu50			0.2K or 0.08%
Cu100			0.3K or 0.12%
TC		K, J, T, E	typ.0.5K or 0.08%
		N	typ.1.0K or 0.08%
		S, B, R	typ.2.0K or 0.08%
Ω		0 to 400Ω	±0.1Ω or 0.08%
		0 to 2000Ω	±1.5Ω or 0.12%
mV		-10 to 75mV	±20μV or 0.08%
		-100 to 100mV	±0μV or 0.08%
		-100 to 500mV	±0μV or 0.08%
		-100 to 2000mV	±0μV or 0.08%

Environment conditions	
Ambient temperature limits	-40 to 85°C (-40°F to 185°F)
Storage temperature	-40 to 100°C (-40°F to 212°F)
Condensation	Allowable
Degree of protection	IP67
Explosion	Ex d IIC T6
Others	
Display Type	Visible range 32.5X22.5mm; 5-digit 7-segment main display, digit height 8mm, 8-digit 14 segment additional display, digit height 5mm; 52 bars meter with 2% resolution
Weight	Approx. 800g
Display Range	-1.9.9.9.9-9.9.9.9.9
Materials	Housing: ADC12

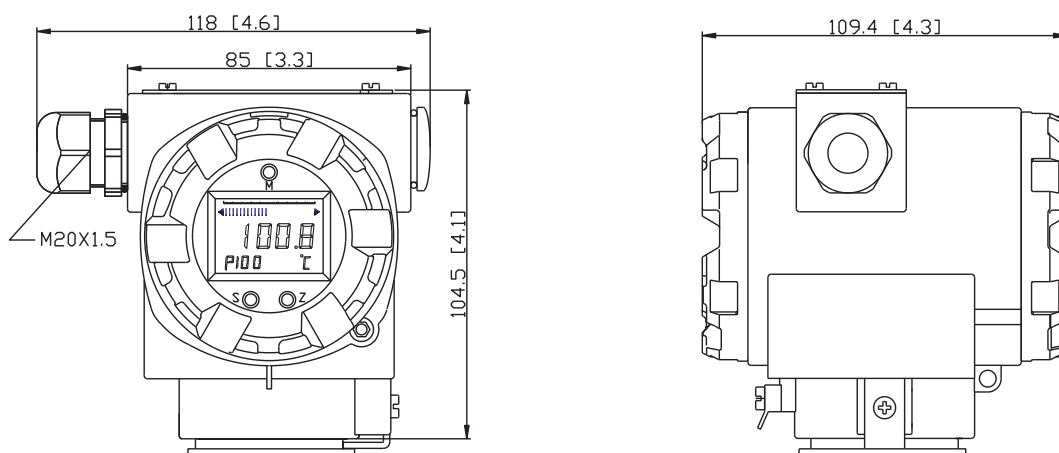
## Electrical connections



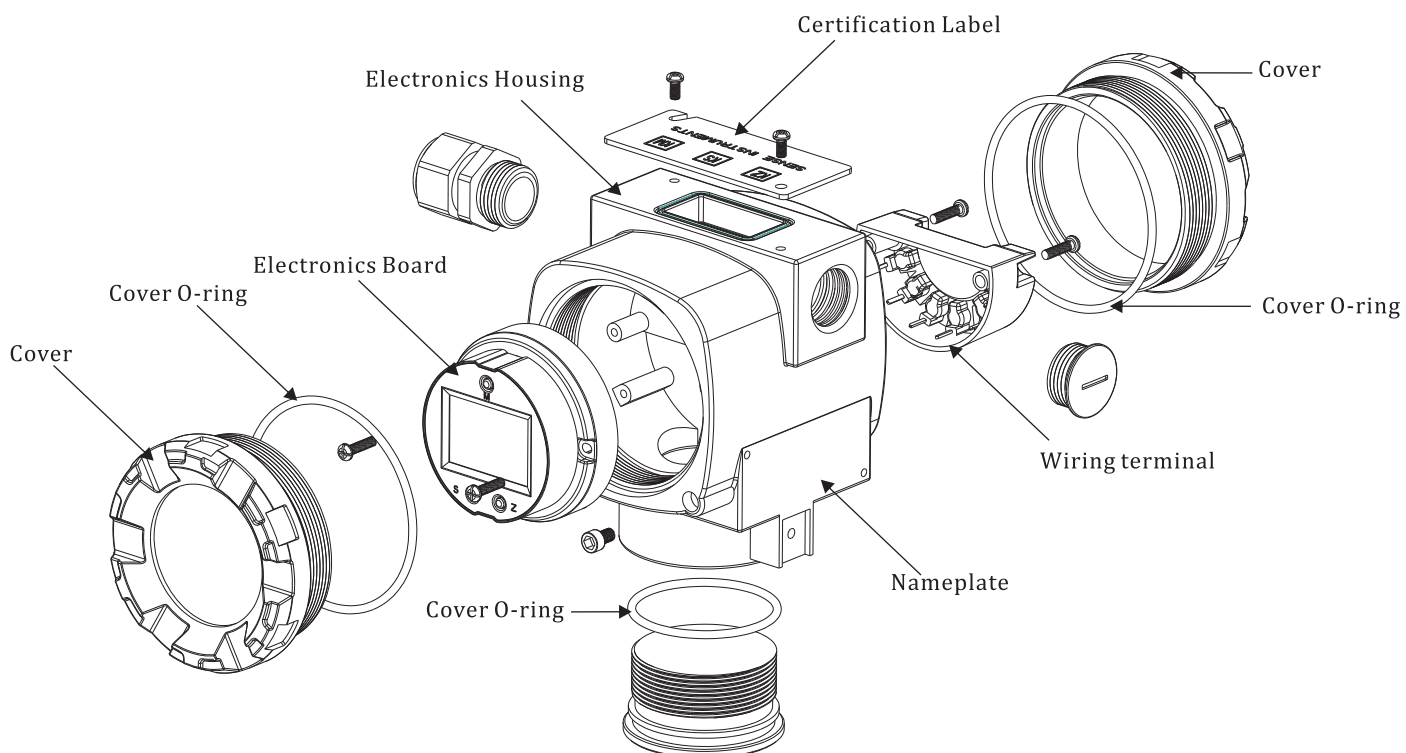
# Temperature Field mounted Transmitter

Model No. **KIT200-T Series**

## Dimensions

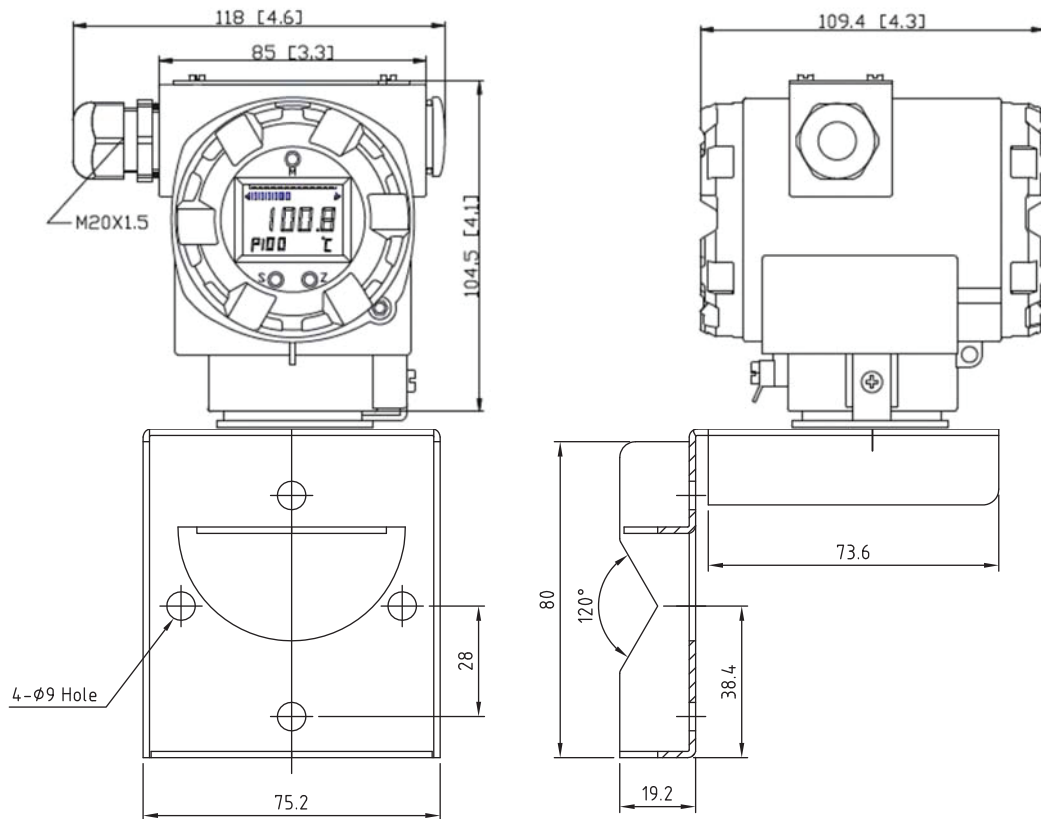


## Exploded View





## Installation diagram



## Ordering Code

Model		Description	
KIT200-T			
Display	1		LCD Backliht Display with Bargraph
Mounting Bracket		N	None
		1	2" Pipe Mounting