KT-502H

Features

- HART protocol
- 330° rotatable display for environment conditions
- 4-20mA analog output (2-wire)
- Various input (order 1 input type among 22 types)
  RTD: 8 types, Thermocouple: 8 types,
  mV: 4 types, Ω: 2 types
- Backlight helps to read easily in the darkness
- Explosion class : Ex d IIC T6 IP67

HART FIELD COMMUNICATIONS PROTOCOL

Please read "Caution for your safety" in operation manual before using this unit.

Ordering information

KT — 502H 0 (-270 to 1372, K) ※1

① ②

Item	Description	
①Mounting bracket	0	Without bracket
	1	With bracket
②User temperature range	※ **1**: To order this unit, write the temperature sensor type and the temperature range.	

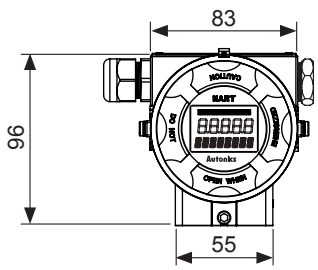
Specifications

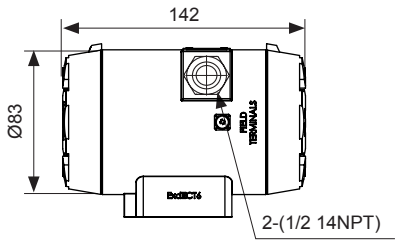
Model		KT-502H
Power supply		10.5-45VDC (with backlight LCD)
Display method		PV display part : 7 Segment 5 digit (character size : W4×H8mm) Parameter display part : 14 Segment 8 digit (character size : W2.6×H4.8mm) 52 Bar meter
Display range		-19999 to 99999
Setting method		HART-protocol (no setting key)
Response time		1 sec.
Input type	RTD	DPt100Ω, DPt500Ω, DPt1000Ω, Ni100Ω, Ni500Ω, Ni1000Ω, Cu50Ω, Cu100Ω
	Thermocouple	K, J, T, E, N, S, B, R
	Resistance transmission(Ω)	0 to 400Ω, 0 to 2000Ω
	Voltage transmission(mV)	−10-75mV, −100-100mV, −100-500mV, −100-2000mV
Output		4-20mA(2-wire)
Alarm		Below 3.8mA, Over 20.5mA Sensor break 3.6mA
Load		max.(V power supply - 7.5V)/0.22A
Galvanic insulation		2KVAC(input/output)
Environment	Ambient temperature	-20 to 70°C, storage: 20 to 80°C
	Ambient humidity	0 to 85%RH
Explosion class※1		Ex d IIC T6 IP67
Material		Body : Aluminum(AlDc.8S), Cover O-Ring : Buna N
Unit weight		Approx. 1.2kg

※1: This Explosion class is acquired and managed by Konics Co., Ltd.
※Environment resistance is rated at no freezing or condensation.

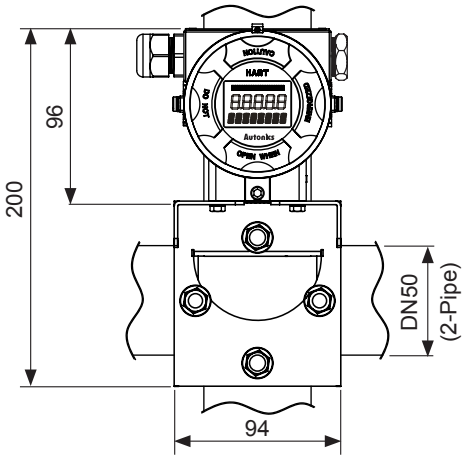
Dimensions

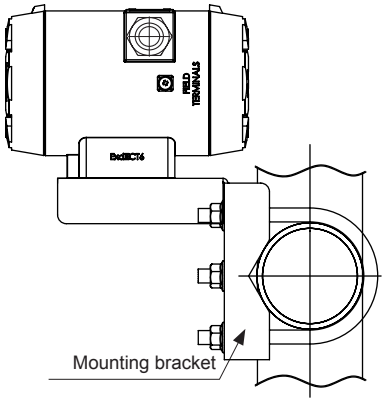
(unit: mm)





● **Mounting bracket**

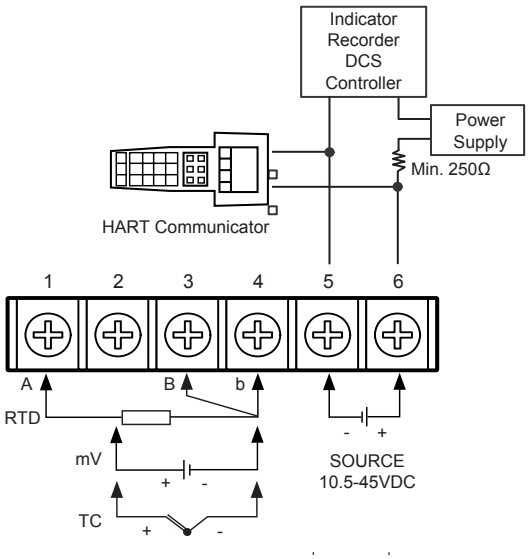




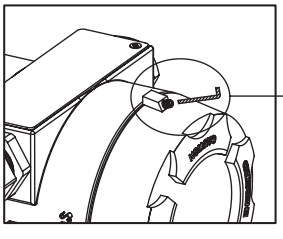
Input type and range

Input type		Input range(℃)	Input range(℉)
RTD	DPt100Ω	−200 to 850	−328 to 1562
	DPt500Ω	−200 to 250	−328 to 482
	DPt1000Ω	−200 to 250	−328 to 482
	Cu50Ω	−50 to 150	−58 to 302
	Cu100Ω	−50 to 150	−58 to 302
	Ni100Ω	−60 to 180	−76 to 356
	Ni500Ω	−60 to 180	−76 to 356
	Ni1000Ω	−60 to 150	−76 to 302
Resistance (Resistance transmitter)	Resistance (Ω)	0 to 400Ω	
		0 to 2000Ω	
Thermocouple	B (PtRh30-PtRh6)	0 to 1820	32 to 3308
	E(NiCr-CuNi)	−270 to 1000	−454 to 1832
	J(Fe-CuNi)	−210 to 1200	−346 to 2192
	K(NiCr-Ni)	−270 to 1372	−454 to 2501
	N(NiCrSi-NiSi)	−270 to 1300	−454 to 2372
	R(PtRh13-Pt)	−50 to 1768	−58 to 3214.4
	S(PtRh10-Pt)	−50 to 1768	−58 to 3214.4
	T(Cu-CuNi)	−270 to 400	−454 to 752
Analog	Voltage	−10 - 75mV	
		−100 - 100mV	
		−100 - 500mV	
		−100 - 2000mV	

Connections



● **Opening cover**



To open the cover, unscrew the M3 X 6L headless bolt using a 1.5 hexagon wrench and rotate the cover.

Current Trim adjustment

Connect a HART communicator and adjust current trim as below by a HART communicator.

① Select the **'1. Device Setup'** by ↑ , ↓ keys and press the → key.

1. Device Setup
2. PV
3. PV Ao
4. PV LRV
5. URV

② Select the **'2. Diag/Service'** by ↑ , ↓ keys and press the → key.

1. Process Variables
2. Diag/Service
3. Basic Setup
4. Detailed Setup
5. Review

③ Select the **'4. D/A trim'** by ↑ , ↓ keys and press the → key.

1. Test device
2. Loop test
3. Calibration
4. D/A trim

④ Press the O K (F4) key.

WARN-Loop should be removed from automatic control

ABORT | O K

⑤ Press the O K (F4) key.

Connect reference meter

ABORT | O K

⑥ Press the O K (F4) key.

Setting fid dev output to 4mA

ABORT | O K

⑦ Press the ENTER (F4) key to set 4 mA display value.

Enter meter Value
4.000

HELP | DEL | ABORT | ENTER

⑧ If output display value is correct, select **'1. Yes'** and press the ENTER (F4) key. If not, select **'2. No'** and press the ENTER (F4) key and re-set the display value.

Ex)If output display value is 3.89mA, select 3.89 and press the ENTER (F4) key.

Fid dev output 4.000 mA equal to reference meter ?
1. Yes
2. No ABORT | ENTER

⑨ Press the O K (F4) key.

Setting fid dev. output to 20mA

ABORT | O K

⑩ Press the ENTER (F4) key to set 20 mA display value.

Enter meter Value
20.000

HELP | DEL | ABORT | ENTER

⑪ If output display value is correct, select **'1. Yes'** and press the ENTER (F4) key. If not, select **'2. No'** and press the ENTER (F4) key and re-set the display value.

Fid dev output 20.000 mA equal to reference meter ?
1. Yes
2. No ABORT | ENTER

⑫ Press the O K (F4) key.

NOTE-Loop may be returned to automatic control

ABORT | O K

⑬ Press the HOME (F3) key.

Diag/Service
1. Test device
2. Loop test
3. Calibration
4. D/A trim

HELP | SAVE | HOME

⑭ Press the QUIT (F3) key.

Device Disconnected

RETRY | QUIT

⑮ Press the ↖ (F3) key to complete the adjustment.

1. Offline
2. Online
3. Frequency Device
4. Utility

Temperature range setting

① Press the [1/0] key for 3 sec.
Select the **'4. PV LRV'** by ↑, ↓ keys and press the [→] key.

Online (Generic)
1. Device Setup
2. PV
3. PV Ao
4. PV LRV
5. URV SAVE

② Select **'1. PV LRV'**(Low temperature range) and press the [→] key.

1. PV LRV
2. URV
HELP HOME

③ Set Low temperature range and press the **ENTER** (F4) key.

PV LRV			
0.000 deg C			
0.000			
HELP	**DEL**	**ESC**	**ENTER**

④ Select **'2. URV'**(High temperature range) and press the [→] key.

1. PV LRV
2. URV
HELP HOME

⑤ Set High temperature range and press the **ENTER** (F4) key.

PV URV			
100.000 deg C			
100.000			
HELP	**DEL**	**ESC**	**ENTER**

⑥ When the set temperaure range is correct, press the **SEND** (F2) key.

1. PV LRV 0.000 deg C		
2. URV 100.000 deg C		
HELP	**SEND**	**HOME**

⑦ Press the **O K** (F4) key.

- WARNING -
Pressing ' OK ' will
change device output
put 100P in manual

⑧ Press the **O K** (F4) key.

- WARNING -
Return control 100P
To automatic control
O K

⑨ Check the set temperature range. Press the **HOME** (F3) key. HART communication is OFF.

1. PV LRV 0.000 deg C
2. URV 100.000 deg C
HELP HOME

Proper usage

■ Caution for using

- For connecting the power, use a crimp terminal (M3.5, min. 7.2mm).
- The connection of this unit should be separated from the power line and high voltage line in order to prevent inductive noise.
- Install a power switch or a circuit breaker to supply or cut off the power.
- Switch or circuit breaker should be installed nearby users for convenient control.
- Do not use this unit near the high frequency instruments (high frequency welding machine & sewing machine, large capacity SCR controller).
- Installation environment.
  ① Indoor / Outdoor
  ② Altitude max. 2,000m
  ③ Pollution degree 2
  ④ Installation category II
- Use the verified explosion-proof electric connection (cable gland or sealing fitting) (over Ex d IIC T6 IP67).
- Use the dedicated external terminal for earth. For connecting earth, use a spring washer and earth cable which is over $4mm^2$.
- **We are not responsible for any damages and claims for careless. Must read the cautions for your safety and using.**
- **This explosion-proof unit is certified and the same specifications which is reported to Korea Gas Safety Corporation.**
- **If there are any problems with the unit, contact the sales office.**
- **It may cause malfunction if above instructions are not followed.**