KT-502H

Features

- HART protocol
- 330° rotatable display for environment conditions
- 4-20 mA analog output (2-wire)
- Various input
  RTD: 8 types, Thermocouple: 8 types,
  mV: 4 types, Ω: 2 types
- Backlight helps to read easily in the darkness
- Explosion-proof structure : 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**

Mounting bracket		
	0	Without bracket
	1	With bracket

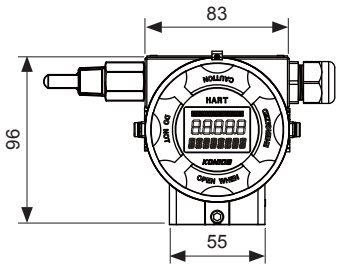
Specifications

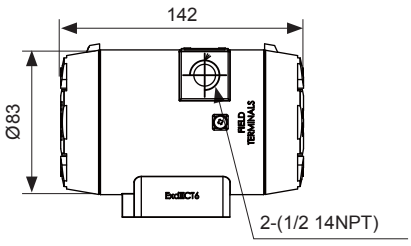
Model		KT-502H	
Power supply		10.5-45VDC (with backlight LCD)	
Display method		PV display part : 7 Segment 5 digit (character size : W4×H8mm) Parameter display part : 14 Segment 8 digit (character size : W2.6×H4.8mm) 52 Bar meter	
Display range		-19999 to 99999	
Setting method		HART-protocol (no setting key)	
Response time		1 sec.	
Input type and accuracy		Type	Measuring accuracy
	RTD	DPt100Ω, Ni100Ω	0.2K or 0.08%
		DPt500Ω, Ni500Ω	0.5K or 0.20%
		DPt1000Ω, Ni1000Ω	0.3K or 0.12%
		Cu50Ω	0.2K or 0.08%
		Cu100Ω	0.3K or 0.12%
	Thermocouple	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%
	Resistance tran. (Ω)	0 to 400 Ω	±0.1Ω or 0.08%
		0 to 2000 Ω	±1.5Ω or 0.12%
	Voltage trans. (mV)	-10-75 mV	±20μV or 0.08%
		-100-100 mV	±0μV or 0.08%
		-100-500 mV	±0μV or 0.08%
		-100-2000 mV	±0μV or 0.08%
Output		4-20 mA(2-wire)	
Alarm		Below 3.8 mA, Over 20.5 mA Sensor break 3.6mA	
Load		max.(V power supply - 7.5V)/0.22A	
Galvanic insulation		2KVAC(input/output)	
Environ-ment	Ambient temperature	-20 to 70 ℃, storage: 20 to 80 ℃	
	Ambient humidity	0 to 85%RH	
Explosion-proof structure		Ex d IIC T6(IP67)	
Material		Body : Aluminum(AlDc.8S), Cover O-Ring : Buna N	
Unit weight		Approx. 1.2 kg	

※ Environment resistance is rated at no freezing or condensation.

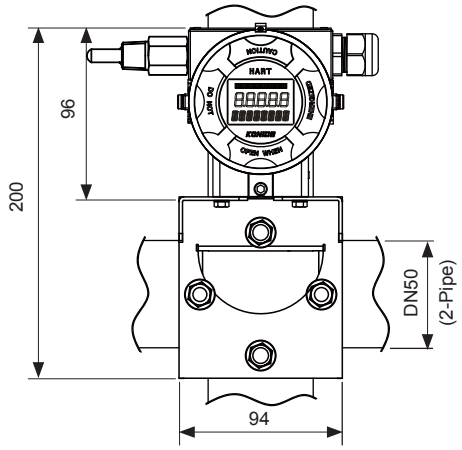
Dimensions

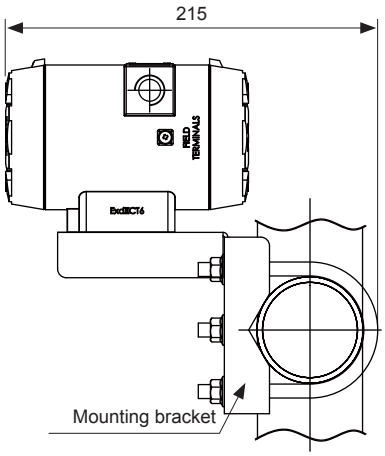
(unit:mm)





● **Mounting bracket**

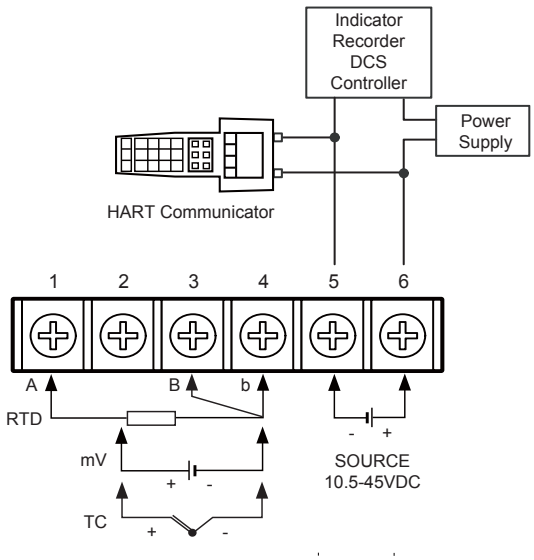




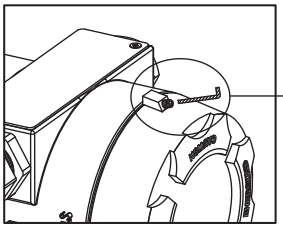
Input type and range

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



● **Mounting bracket**



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

Current Trim adjustment

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, select3.89 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 [1/2] (F3) key to complete the adjustment.

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

Temperature range setting

① Press the [⁄] 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. 7.2 mm).
- 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. 2,000 m
  ③ Pollution degree 2
  ④ Installation category II