Kongter

KT-220 Moisture Content Sensor

KT-220 is rugged and smart sensor for online measurement of moisture content in oil. Powered by Kongter's unique technology, it is extremely sensitive for changes of water content in oil. This enables a real-time and continuous monitor for the oil quality. This timely and all-rounded monitor is significant to ensure the reliable performance of your critical equipment.

Unique Features

- Extremely sensitive to water contamination in oil
- Suitable for test of dissolved water, free water and emulsified water
- High test basis up to 10^{-15}, for accurate measurement in various hash conditions
- Unique grounding technology that is highly reliable and durable
- Sophisticated sensor structure with state-of-art design for easy cleaning
- Fully certified with international standards for most commercial and industrial environments
- 7/24*365 days reliable reading for oil quality gives you peace of mind for your critical equipment
- Preventative maintenance for your equipment to avoid further high cost and time due to oil quality
- Reduces cost for changing oil, also reducing the disposal costs for the waste oil
- Reducing carbon emission, saving time and money, much more environment-friendly

Application:

Oil field and oil refinery

Power plant, transmission & distribution

Engineering machinery vehicle

Aviation and navigation

Railway and road transportation

Steel and metallurgy

Oil tank and oil station

Industrial production

Suitable for oils:

Lubricant

Hydraulic oil

Gear box oil

Engine oil

Fuel oil

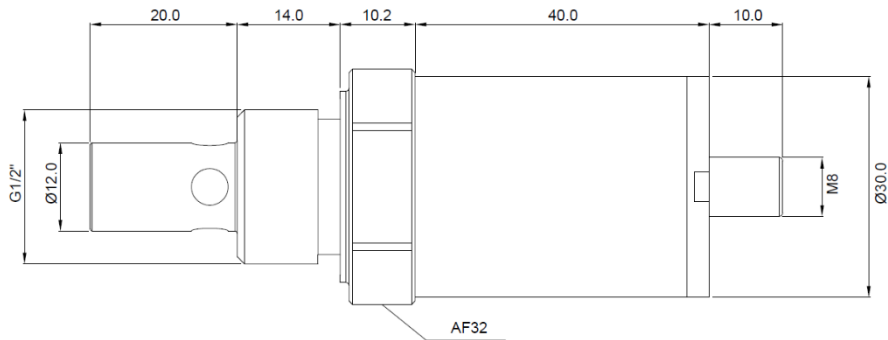Insulation oil

Turbine oil

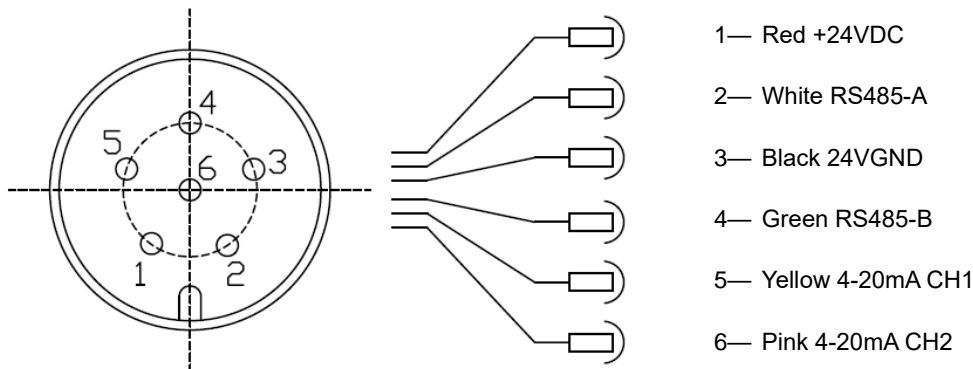Different light oil and heavy oils

Technical Specification

Measurement Range	
Moisture content	0-1% (could be customized)
Accuracy	0.02%(typical)
Resolution	0.001%
Temperature	-40-120℃
Accuracy	0.3℃(typical)0.5℃(max)
Resolution	0.1℃
Other Parameters	
Output	2 channels 4-20mA analog output+RS485 digital output
Work power	DC9V-28V
Work current	<6mA+load current
Work pressure	<100bar
Work temperature	-40-85℃

Oil temperature	-40-120℃
Mechanical connector	G1/2" BSP
Electric connector	M8*1, 6pin
Cable	6pin, 2 meters, UL20866 6*22AWG
EMC standard	EN 61000-6-4:2007 & EN 61000-6-2:2005
Housing	316 stainless steel
IP rating	IP66
Weight	250g

Sensor Size

Wiring (M8 Male Terminal)

1— Red +24VDC

2— White RS485-A

3— Black 24VGND

4— Green RS485-B

5— Yellow 4-20mA CH1

6— Pink 4-20mA CH2

KT-220 can work with meter display KT-200D for monitoring data display of moisture content and temperature. Warning points setting is available. It also has built-in AC/DC module for power supply of DC24V to KT-220.
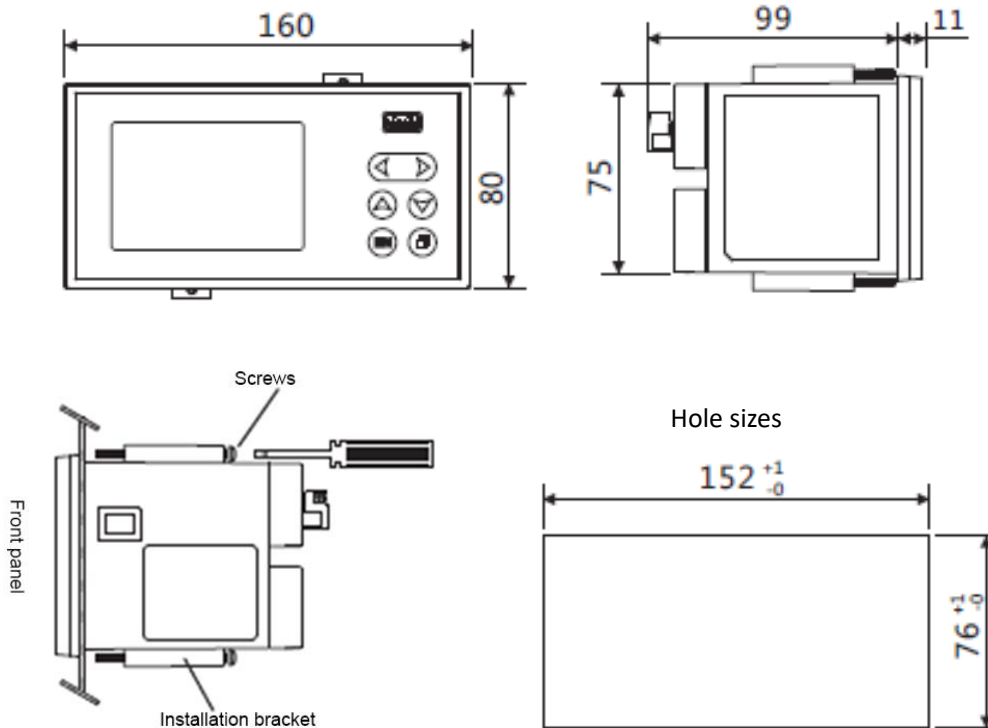
KT-200D Meter Display

Features

- Channel 1 – temperature, Channel 2 - moisture content
- Arbitrary setting of range and decimal places
- ARM processor for fast signal detection
- High efficiency power supply, 100～240VAC input
- 24VDC transducer for Isolation of power output
- Big memory for data storage even at power outage
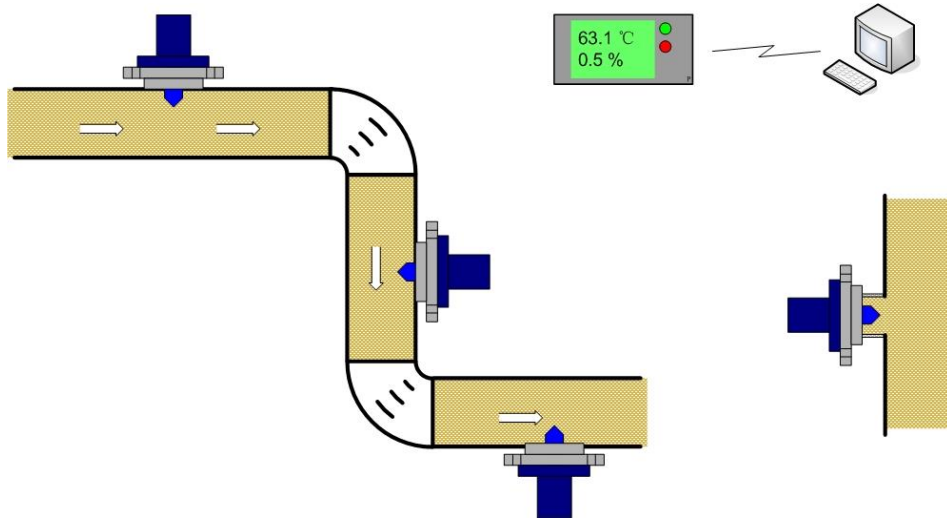
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Technical specification

Power supply	100～240VAC, 50Hz
Output	DC24V, max 60mA
Input signal	4-20mA
Accuracy	Full range 0.2%
Work temperature	0~50℃
Work humidity	0~85% (non-condensing)
Installation position	Indoor
Storage temperature	-10~60℃
Storage humidity	0~95% (non-condensing)
Sampling rate	Min 1s, with different options
Power consumption	≤ 9W
Output voltage	2 channels DC 24V, 65mADC,90mA over current protection
Display	STN monochromatic LCD (128×64)
Clock	Year 2000～2099, accuracy ±10ppm@25℃
Warning output relay	2 points normally open,250VAC/3A,30VDC/3A (resistive load)
Housing material	ABS
Housing size	160(W)*80(D)*100(H)
Weight	0.5KG
Display	320*200 monochromatic LCD
Keypad	6 buttons

KT-200D Meter Size
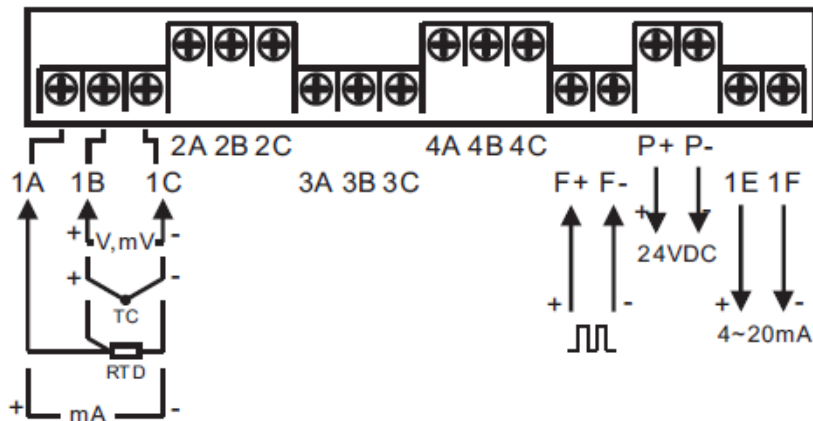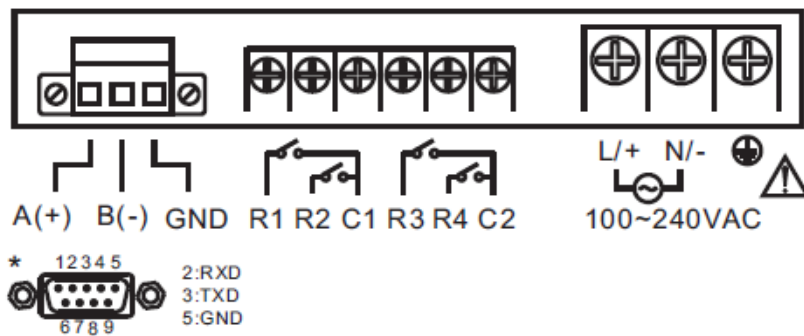

Installation

As KT-220 has small size, users could use standard G1/2" internal thread for convenient connection on pipeline or tank wall. You could view moisture content via KT-200D meter display. Or you could view data in real time on remote terminals like PC via RS485 com cable connection and 4-20mA analog signal output.

Wire Connection:

Wire connection between KT-220 and KT-200D:

Connect the 2 meters cable in the right order per instruction below to KT-200D terminals. After that connect the M8 female connector with M8 male connector of KT-220.

Definition	Cable colors	KT-200D terminal	NOTE
Temperature (℃)	Pink	1A	Channel 1
Moisture content (%)	Yellow	2A	Channel 2
DC24V+	Red	P+	
DC24V-	Black	1C, 2C, P-	Short connected for these 3 terminals

KT-200D wiring structure:

Meter power supply	--	L	Sourced at users' side
AC220V	--	N	
Relay output 1	--	R1, C1	
Relay output 2	--	R3, C2	

Options and parts

Parts	Order Code
USB-RS485 data cable	IL-UR001
Seal washer	IL-SO001
Offline measurement module	IL-OT001
Measurement cable 2m, M8 Threaded connection, 90°bend	IL-CB001
Meter display KT-200D	IL-DP001

Order Information

Per your different application purpose, please mark your order code upon order from Kongter.

Moisture content sensor	KT-220						
Measurement	Moisture content + oil temperature	A					
Signal output	4-20mA + RS485		1				
	RS232		2				
	Other		3				
CH 1	Temperature -40 ... 120°C			B			
CH 2	Moisture content 0 … 5%				C		
	Moisture content 0 … 10%				D		
	Moisture content 0 … 20%				E		
	Other				F		
Connector	G 1/2" ISO					G	
Cable length	2 meters						4

Example: KT-220-A1BCG4

Measurement: Moisture content + oil temperature

Signal output: 4-20mA channel 2 + RS485 channel 1

Analog output 1: temperature -40...120°C

Analog output 2: moisture content 0…5%

Connector: G1/2" ISO

Cable length: 2 meters