YCQB *SERIES*

PRESSURE SENSORS

Pressure sensors are widely used in Air Conditioning, Refrigeration and Heat Pump system. Using a 5 V excitation input these sensors provide a 0.5-3.5 V or 0.5-4.5 V ratiometric signal output proportional to the pressure of the medium. This device requires no end user amplification. Pressure sensors permit to control and guarantee the system working under safe and stability condition.

FEATURES

- OVERALL FEATURES: APPLIED HIGH PERFORMANCE DIGITAL CIRCUIT WHICH HAS GOOD LINEAR, SMALL TEMPERATURE EXCURSION AND HIGH LEVEL OF ACCURACY OVER WIDE OPERATING RANGE
- SMALL SIZE AND SIMPLE INSTALLATION
- MODELS AVAILABLE WITH LEAD WIRE DIRECT CONNECTOR OR WITH PACKARD AND MOLEX SOCKET CONNECTIONS
- STABILITY: APPLIED SUPERIOR PRESSURE CORE, GOOD STABILITY UNDER STRICT PROCESS CONTROL;
- DIVERSIFICATION: DIFFERENT PRESSURE RANGES AND DIFFERENT LEVEL OF ACCURACY.

GENERAL SPECIFICATION

- Applicable for HFC / HFO and flammables refrigerants
- Relative humidity: 0 to 95% RH
- Installation position: preferably with vertical axis and sensor upwards
- Certifications: UL/CSA and declaration according to EMC directive

ELECTRICAL SPECIFICATION

- Supply Voltage : 5V ± 0.25V DC
- Current Consumption : Max. 10 mA
- Response Time: 10 ms
- Insulation Resistance: Min. 100 MΩ
- Load Resistance : Min. 10 kΩ
- Protection Class : IP66/IP67

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PRESSURE SENSOR

Model designation					
YCQ	B	02	L	xxxx	YCQ = Pressure Transmitter
YCQ	B	02	L	xxxx	B = Voltage output / C = Current Output
YCQ	B	02	L	xxxx	Pressure range 01 : between 0 and 10 bar 02 : between 0 and 20 bar 03 : between 0 and 30 bar 04 : between 0 and 40 bar 05 : between 0 and 50 bar
YCQ	B	02	L	xxxx	L = Thread / H= Solder
YCQ	B	02	L	xxxx	Digits for additional information

GENERAL CHARACTERISTICS

YCQB with 0.5 to 3.5V output signal

Output signal = 0.5 to 3.5V (compatible with Sanhua controller = SEC)							
Model Name	U11	Solder /Flare*	Pressure range	Max Working pressure	Electrical connection	Accuracy	Medium Temp.
			[bar]	[bar]	Type	%	°C
YCQB02H01	10185004701	Solder	0-20	52,5	2m wires +XHP	±2% FS	-30 / 120
YCQB02H01-01	10185001501		0-20	52,5	2m wires +XHP	±0,8% FS	-40 / 120
YCQB02H18-1	10185015401		0-20	52,5	4.9m wires +XHP	±0,8% FS	-40 / 120
YCQB05H01	10185004801		0-50	75	2m wires +XHP	±2% FS	-30 / 120
YCQB02L12-1	10185001401	Flare	0-20	52,5	2m wires +XHP	±0,8% FS	-40 / 120
YCQB02L28-1	10185005601		0-20	52,5	4.9m wires +XHP	±0,8% FS	-40 / 120

*Flare = 7/16-20UNF-2B connector / Solder = ¼" connector

For flammable refrigerants, Sanhua recommend to use pressure transmitters with solder connection

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PRESSURE SENSOR

YCQB with 0.5 to 4.5V output signal

Output signal = 0.5 to 4.5V							
Model Name	U11	Solder /Flare*	Pressure range	Max Working pressure	Electrical connection	Accuracy	Medium Temp.
			[bar]	[bar]	Type	%	°C
YCQB02H50	10185004501	Solder	0-13.8	52,5	Packard	±2% FS	-30 / 120
YCQB04H50	10185004601		0-34.5	75	Packard	±2% FS	-30 / 120
YCQB02L01	10185004901	Flare	0-20	52,5	2m wires +XHP	±2% FS	-30 / 120
YCQB02L01-01	10185001401		0-20	52,5	2m wires +XHP	±0,8% FS	-40 / 120
YCQB05L01	10185007001		0-46	75	2m wires +XHP	±2% FS	-30 / 120
YCQB01L50	10185005702		-1 -9.3	52,5	Packard	±2% FS	-30 / 130
YCQB02L50	10185004001		0-13.8	52,5	Packard	±1% FS	-30 / 120
YCQB02L51	10185014101		0-17.2	52,5	Packard	±1% FS	-30 / 120
YCQB04L50	10185004101		0-34.5	52,5	Packard	±1% FS	-30 / 120
YCQB05L50	10185004201		0-46	75	Packard	±1% FS	-30 / 120
YCQB05L53	10185013401		0-45	75	Packard	±2% FS	-30 / 130
YCQB02L100	10185015501		0-20	52,5	Molex	±2% FS	-30 / 120
YCQB05L100	10185009101		0-46	75	Molex	±1% FS	-30 / 120

*Flare = 7/16-20UNF-2B connector / Solder = ¼" connector
For flammable refrigerants, Sanhua recommend to use pressure transmitters with solder connection

YCQB with G ¼ connector (specific for Co2 Transcritical application)

Output signal = 0.5 to 4.5V / 3.5V							
Model Name	U11	Pressure range	Output voltage	Max Working pressure	Electrical connection	Accuracy	Medium Temp.
		[bar]	[V]	[bar]	Type	%	°C
YCQB15L01	10185030302	0-150	0.5 - 4.5	225	2m wires +XHP	±2% FS	-30 / 85
YCQB09L01	10185039102	0-90	0.5 - 3.5	225	2m wires +XHP	±2% FS	-40 / 85

Note: 1) Signal span: V_{FS}=FS (Full Scale) = $V_A(p_r)$ - V_{A0}

2) Accuracy measured within the temperature ranges shown in Table 1:
Included Nonlinearity (L) and pressure hysteresis. The Nonlinearity is the deviation of the real sensor characteristic $V_A = f(p)$ from the ideal straight line. It can be approximated by a polynomial of second order, with the maximum at $p_x = p_r / 2$
The equation to calculate the nonlinearity is:
$L = (V_A(p_x) - V_{A0}) / (V_A(p_r) - V_{A0}) - p_x / p_r$

3) Response Time: delay between a pressure change (10 to 90% pr) and the corresponding signal output change (10 to 90% FS)

4) Insulation Resistance measured with rated voltage: 500 VDC

For other connection types (M12, M16...) please contact your Sanhua local representative.

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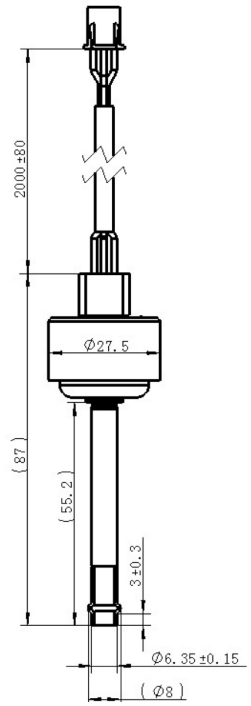
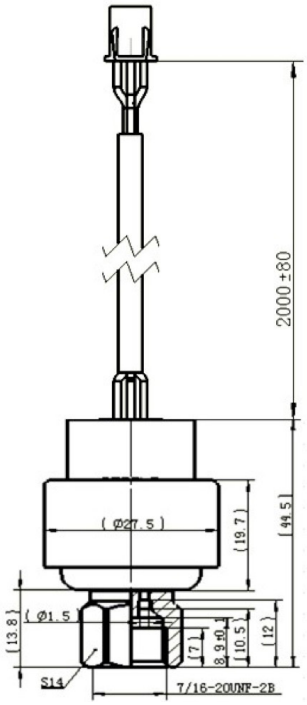
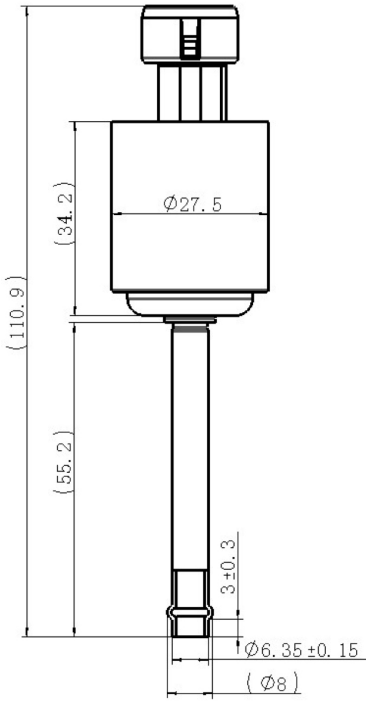
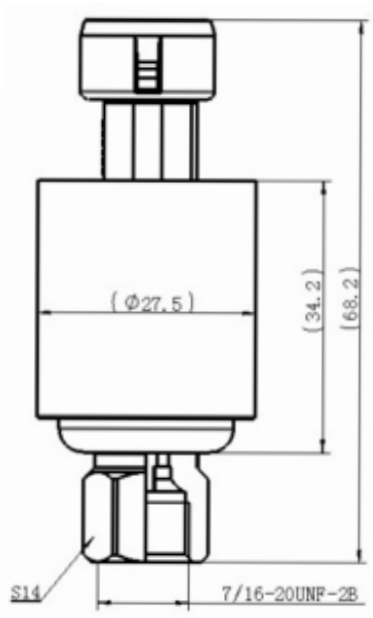
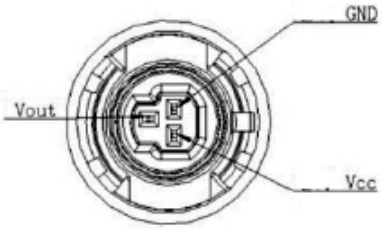
PRESSURE SENSOR

DIMENSIONS

Solder connector ¼”	7/16-20UNF-2B	Electrical connector
		**XHP CONNECTOR** *Cable Number 1: Vcc - RED* *Cable Number 2: $V_A(p_r)$ - WHITE* *Cable Number 3: GND - BLACK*
		**PACKARD CONNECTOR** 

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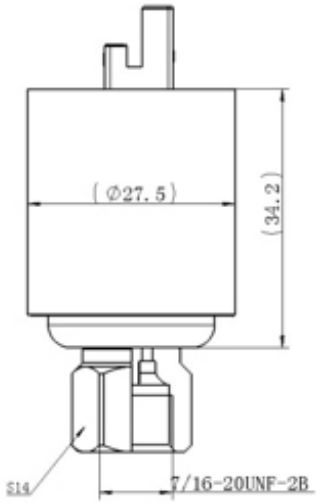
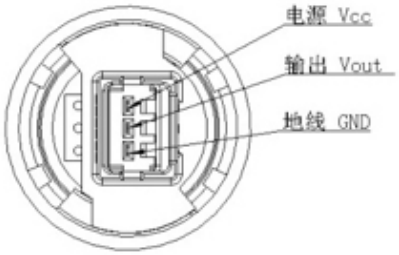
PRESSURE SENSOR

7/16-20UNF-2B



Electrical connector

MOLEX SOCKET



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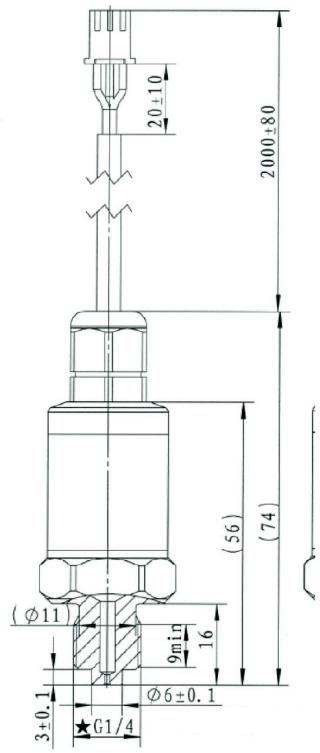

XHP CONNECTOR

Cable Number 1: Vcc - RED
Cable Number 2: $V_A(p_r)$ - WHITE
Cable Number 3: GND - BLACK

For complete product family information please visit us at
www.sanhuaeurope.com and download the full range of datasheet at TECHNICAL INFORMATION LINK.

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