YCQB SERIES

Pressure Transducer

Pressure transducers 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 transducers 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 all common HCFC, HFC refrigerants such as: R22, R134a, R404A, R407C, R410A, R507

  -Medium temperature: -30°C~+120°C (2%FS accuracy)
  -40°C~+40°C (0.8%FS accuracy)

  -Ambient temperature: -30°C~+80°C
- Installation position: preferably with vertical axis and sensor upwards
- Certifications: UL/VDE 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 4 : Min. 100 MΩ
- Load Resistance : Min. 10 kΩ
- Protection Class : IP66/IP67

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GENERAL CHARACTERISTICS

Table 1: Operative Limits

Valve Model	Ambient temperature	Relative Humidity	Medium Temperature Range min / max	Temperature Range for maximum accuracy	Maximum Operating Pressure (MOP)
YCQB02H01	-30°C / +80°C	0 ~ 95%	-30°C / +120°C	± 2.0 % F.S. -30°C / +85°C	5.25
YCQB02H12					
YCQB02H18					
YCQB05H01				± 2.0 % F.S. -30°C / +120°C	7.50
YCQB05H10				± 2.0 % F.S. -30°C / +85°C	7.50
YCQB02L01				± 2.0 % F.S. -30°C / +85°C	5.25
YCQB02L12					
YCQB02L28					
YCQB05L01				± 2.0 % F.S. -30°C / +120°C	7.50
YCQB05L13				± 2.5 % F.S. -20°C / +120°C	7.50
YCQB02H50			-30°C / +120°C	± 2.0 % F.S. -20°C / +120°C	5.25
YCQB04H50					7.50
YCQB02L50				± 1.0 % F.S. -30°C / +85°C ± 2.0 % F.S. -40°C / -30°C ± 2.5 % F.S. +85°C / +125°C	5.25
YCQB02L51					5.25
YCQB04L50					7.50
YCQB05L50					7.50
YCQB02L100				± 2.0 % F.S. -30°C / +85°C	5.25
YCQB05L100				± 2.0 % F.S. -30°C / +120°C	7.50

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Valve Model	Mechanical connection			Electrical connection	Pressure range (0 ~ pr) [Mpa]	Output (VA0 ~ VApr) [V]
	Type	Connections [inch]	Thread size			
YCQB02H01	Solder	1/4"	-	2m Lead Wires	0 ~ 2	0.5 ~ 3.5 DC
YCQB02H12	Solder	1/4"		2m Lead Wires	0 ~ 2	0.5 ~ 4.5 DC
YCQB02H18	Solder	1/4"	-	4.9m Lead Wires	0 ~ 2	0.5 ~ 3.5 DC
YCQB05H01	Solder	1/4"	-	2m Lead Wires	0 ~ 5	0.5 ~ 3.5 DC
YCQB05H10	Solder	1/4"		2m Lead Wires	0 ~ 5	0.5 ~ 4.5 DC
YCQB02L01	Thread	SAE - 1/4"	7/16-20UNF	2m Lead Wires	0 ~ 2	0.5 ~ 4.5 DC
YCQB02L12	Thread	SAE - 1/4"	7/16-20UNF	2m Lead Wires	0 ~ 2	0.5 ~ 3.5 DC
YCQB02L28	Thread	SAE - 1/4"	7/16-20UNF	4.9m Lead Wires	0 ~ 2	0.5 ~ 3.5 DC
YCQB05L01	Thread	SAE - 1/4"	7/16-20UNF	2m Lead Wires	0 ~ 4.6	0.5 ~ 4.5 DC
YCQB05L13	Thread	SAE - 1/4"	7/16-20UNF	2m Lead Wires	0 ~ 5	0.5 ~ 4.5 DC
YCQB02H50	Solder	1/4"	-	Packard	0 ~ 1.38	0.5 ~ 4.5 DC
YCQB04H50	Solder	1/4"	-	Packard	0 ~ 3.45	0.5 ~ 4.5 DC
YCQB02L50	Thread	SAE - 1/4"	7/16-20UNF	Packard	0 ~ 1.38	0.5 ~ 4.5 DC
YCQB02L51	Thread	SAE - 1/4"	7/16-20UNF	Packard	0 ~ 1.72	0.5 ~ 4.5 DC
YCQB04L50	Thread	SAE - 1/4"	7/16-20UNF	Packard	0 ~ 3.45	0.5 ~ 4.5 DC
YCQB05L50	Thread	SAE - 1/4"	7/16-20UNF	Packard	0 ~ 4.6	0.5 ~ 4.5 DC
YCQB02L100	Thread	SAE - 1/4"	7/16-20UNF	Molex	0 ~ 2	0.5 ~ 4.5 DC
YCQB05L100	Thread	SAE - 1/4"	7/16-20UNF	Molex	0 ~ 4.6	0.5 ~ 4.5 DC

Note:

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

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

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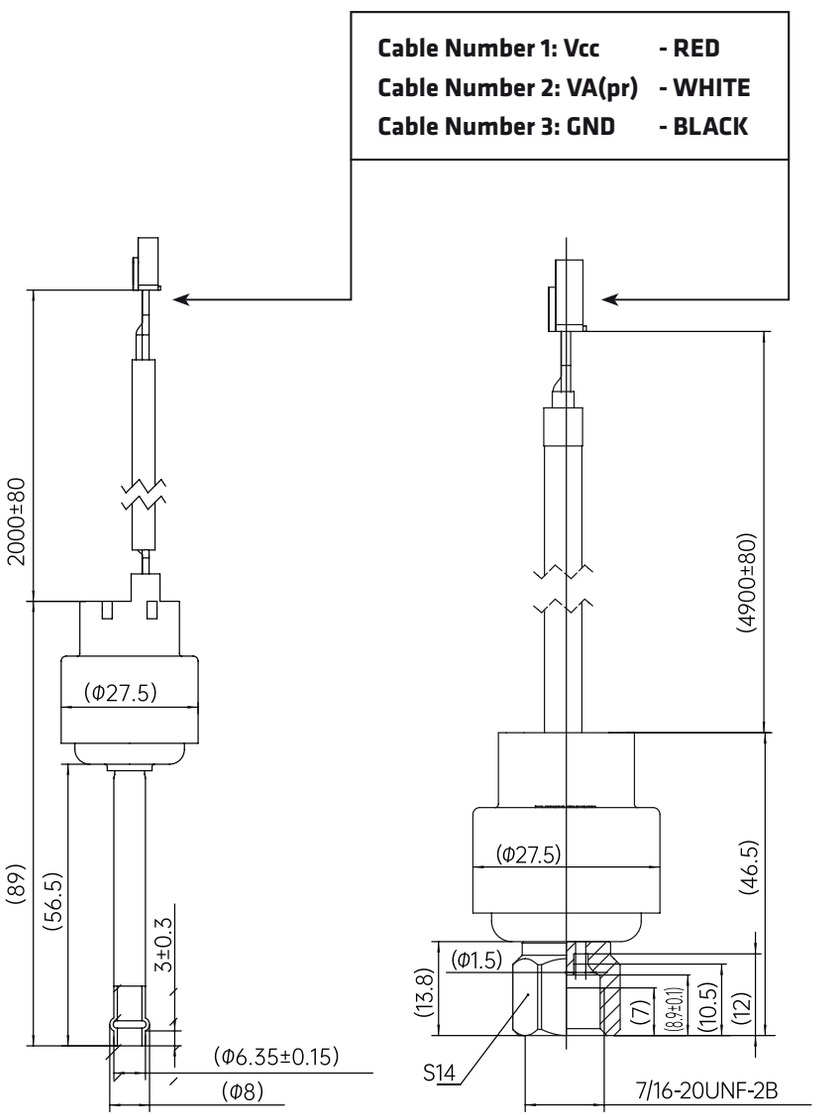
DIMENSIONS

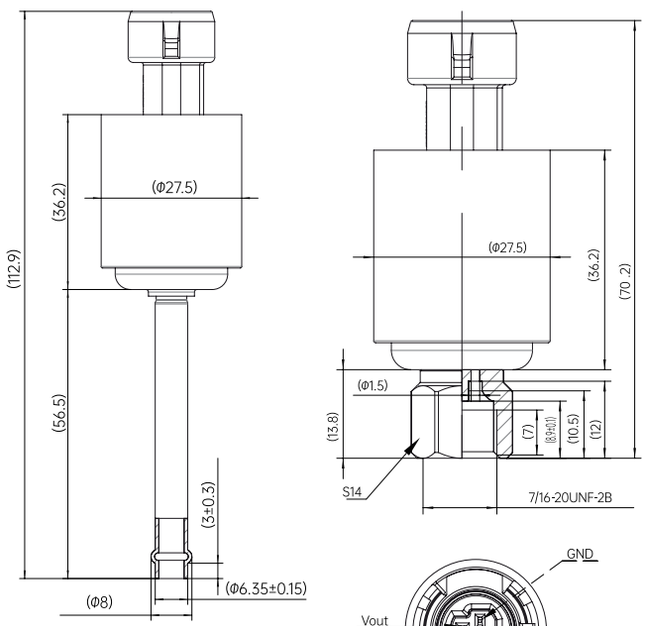
a) Models with Lead wires



YCQB02H01
YCQB02H12
YCQB02H18
YCQB05H01
YCQB05H10

YCQB02L01
YCQB02L12
YCQB02L28
YCQB05L01
YCQB05L13

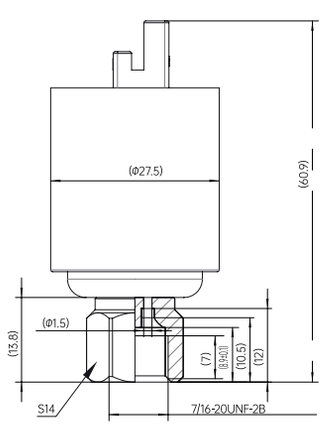
b) Models with Parkard Socket



YCQB02H50
YCQB04H50

YCQB02L50
YCQB02L51
YCQB04L50
YCQB05L50

c) Models with Molex Socket



YCQB02L100
YCQB05L100