Model 725F
High Gauge Pressure Transducers

Description

Model 725F pressure transducer is specially designed for hydraulic chocks of longwall mining machines for underground mining. The automatic hydraulic chocks work as the powered roof support which allows shearers to work more efficiently and safely beneath the roof. This model 725F is used to control and monitor the high pressure of the hydraulic system of chocks, so that the chocks can be positioned correctly.

In mining applications, the transducers must resist both vibration and mechanical shock. To meet this requirement, the model 725F transducer has its pressure diaphragm and sensor body made from one piece of stainless steel, i.e., the sensor part of 725F-series transducers possesses mono-block structure. This structure also eliminate the O-ring being integrated inside the sensor body to seal the pressure medium. As a result, the model 725F offers not only excellent resistance to both vibration and mechanical shock, but also excellent reliability.

As one of the 700F-series high pressure transducers and transmitters, the model 725F makes use of metal foil strain gauges from BCM SENSOR in order to form its Wheatstone bridge circuit. One of the advantages of using the metal foil strain gauges is that all the 700F-series possesses the lowest temperature effect, compared to all the other pressure transducers and transmitters from BCM SENSOR.

Last but not least, the 725F transducer features a quick connector of M8x1 female thread, which is especially developed for a convenient and reliable process connection.

Features

- rugged mono-block structure
- measuring ranges: 400bar, ..., 5000bar
- reliable metal foil strain gauge technology
- accuracy up to 0.5%fs
- compensated temperature range: -20 ~ +85°C
- excited by either constant voltage or current source

Applications

- hydraulic chocks of longwall mining machines
- hydraulic percussion drill machines
- high pressure control systems

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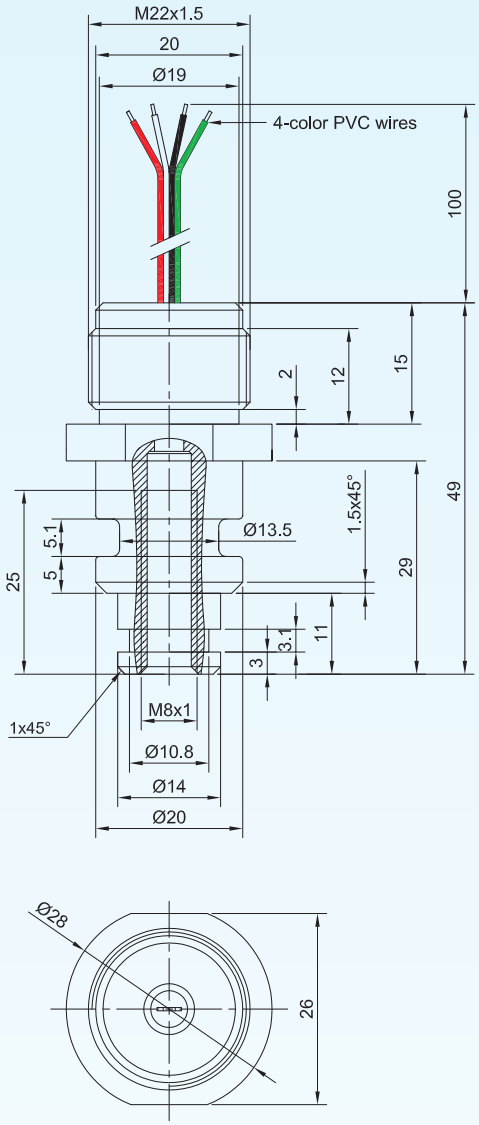
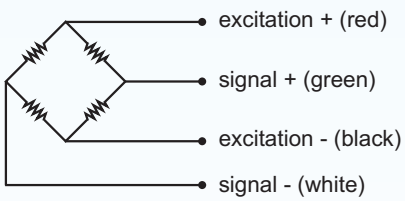
Dimensions



Note: all dimensions are in mm 20

Electrical Interface



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Technical Data

Parameters	Units	Specifications	Notes
pressure medium		dilute fluids	1
measuring ranges	bar	0~400, ~600, ~1000, ~1600, ~2500, ~4000, ~5000	2
pressure references		gauge	
proof pressure	%fs	120	3
burst pressure	%fs	150	
output sensitivity	mV/V	2	
excitation	Vdc	5, ..., 12	
zero offset	mV	⩽ ±1	4
accuracy	%fs	±0.5, ±1 (standard)	5
long-term stability	%fs/year	⩽ ±0.2	
bridge resistance	Ω	350, 500 (standard), 1000, 2000	
insulation resistance	MΩ	500 @100Vdc	
compensated temperature range	°C	-20 ~ +85	
operating temperature range	°C	-40 ~ +125	
storage temperature range	°C	-40 ~ +125	
temperature coefficient of zero offset	%fso/°C	⩽ ±0.02	6
temperature coefficient of span	%fso/°C	⩽ ±0.02	6
life time	cycles	10^8	
response time	ms	⩽ 1	7
mechanical interface		quick connector with M8x1 female thread	
housing connection		M22x1.5 male	
electrical interface		4 colored PVC flying wires, length = 100mm	
pressure diaphragm		17-4PH stainless steel	
wetted parts material		17-4PH stainless steel	
net weight	gram	~40	

General conditions for measurements: media temp. = 25°C ±1°C, ambient temp. = 25°C ±1°C, humidity = 50%RH ±10%RH, barometric pressure: 86~106 kPa, vibration = 0.1 g (1m/s/s) max.

Notes:
1. The pressure medium should be compatible with wetted parts material and pressure diaphragm.
2. For customized pressure ranges, consult BCM.
3. “fs” refers to full scale pressure or rated pressure.
4. Measured at 10 Vdc excitation.
5. Accuracy = sqrt (non-linearity^2 + hysteresis^2 + repeatability^2).
6. Calculated as a rate of output change between -20°C and +85°C, and normalized by the output at 25°C, when the sensor is not temperature compensated.
7. Response time for a 0 bar to fs step change, 10% to 90% rise time.

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Ordering Information

position (pos.) 1: model							
725F							
	pos. 2: pressure ranges and references						
	400bar G 600bar G 1000bar G 1600bar G 2500bar G 4000bar G 5000bar G G: gauge pressure						
		pos. 3: output signal					
		2mV/V (standard)					
			pos. 4: accuracy				
			0.5%fs 1%fs (standard)				
				pos. 5: bridge resistance			
				350Ω 500Ω (standard) 1000Ω 2000Ω			
					pos. 6: mechanical interface		
					QCM8: quick connector with M8x1 female thread		
						pos. 7: electrical interface	
						FW: 4 colored PVC flying wires, length = 100mm(#) #: Wire length can be customized on request.	
							pos. 8: customized specifications
							"(*)" is necessary only if any customized parameter is required, otherwise it is neglectable.
pos.1	pos. 2	pos. 3	pos. 4	pos. 5	pos. 6	pos. 7	pos. 8

Examples of Ordering Code

- standard sensor:

  725F-1000barG-2mV/V-1%fs-500Ω-QCM8-FW

- customized sensor:

  725F-1000barG-2mV/V-1%fs-500Ω-QCM8-FW(200mm)-(*)

  (*): Customized wire length = 200mm.

The listed specifications and dimensions are subject to change without prior notice.

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