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Golden Rules Co.,Ltd

플랜지 직접 장착형

일반형KC-8100G/A-FM
방폭형SMP858-TST
압력전송기

The nation's development item, 100% domestic goods,Patent **NO.** 10-1606497

Product introduction

Description

Flange Direct Mounting pressure transmitter

KC-8100G/A-FD Flange Direct Gauge/Absolute pressure transmitter is a high performance pressure transmitter with international leading technology meticulously designed by Golden Rules using the world's most advanced monosilicon pressure sensor technology and patent encapsulation technology.
Monosilicon pressure sensor locates on the top of the metal body and stay away from the medium interface to realizes mechanical isolation and thermal isolation.
Glass sintering sensor wire realizes high strength electrical insulation of metal base and improves the capability of flexibility of electronic circuit and transient voltage resistance protection.
All these original encapsulation technologies enable General type KC-8100G/A-FD & Ex-proof type SMP858 to easily cope with extreme chemical occasion and mechanical load, and own strong resistance to EMI, sufficient to respond to the most rigorous industrial environment applications, which are the genuine invisible instruments.

Main parameters

Pressure types	Gauge & Absolute pressure
Measuring range	-100kPa ~ 1MPa, minimum range 5kPa
Absolute pressure range	0 ~ 1MPa, minimum range 10kPa
Output signal	4-20mA, 4-20mA+HART, customer
Reference accuracy	±0.1% F.S.

Field of application

Process Industry	Petrochemical, Chemical, Power, Steel, Cement, Papermaking

Approvals

Measuring medium

Normal medium	Gas, Steam, Liquid
Special medium	The fluids which compatible with wetted parts

Disclaimer: all the data used in the product description is not legally binding. Relevant technical details may be changed due to further improve

Performance Parameter

Measuring range and limit

Nominal value	Smallest calibratable span	Lower range limit(LRL)	Upper range limit(URL)	Overload limit
40kPa	2kPa	-40kPa	40kPa	1MPa
250kPa	12.5kPa	-100kPa	250kPa	4MPa
1MPa	50kPa	-100kPa	1MPa	6MPa

Above measurement range can be replaced by kg/cm2, MPa and kPa units .Which can provide other measurement range according to the requirements. Adjust requirements: lower range value (LRV) and upper range value (URV) can be adjusted within the scope of the upper and lower range limit, smallest calibratable span≤ | URV-LRV | ≤ upper range limit

Performance Parameter

Performance reference JJG882-2004 calibration conditions, 4 ~ 20mA+HART two wires analog signal output. The range is calibrated against the standard zero point. Silicon oil filling, 316L stainless steel isolation diaphragm.

Nominal range: 6kPa

Reference accuracy		
Linear output	Standard	Linearity, hysteresis start from zero
		±0.1% Range
	Range adjustment	The range ratio (TD)= Nominal range/ Range, TD>4
		±[0.05+0.0125(URL/Range)]% Range
Square root output	1.5 times of above linear reference output accuracy.	

Ambient temperature effects (Calibration Temperature: 25℃)	
-20 ~60℃	TD<4, ± (0.02%* Nominal range (URL) +0.075%* range)/20℃
	TD>4, ± (0.03%* Nominal range (URL) +0.15%* range)/20℃
Others	TD<4, ± (0.04%* Nominal range (URL) +0.25%* range)/20℃
	TD>4, ± (0.06%* Nominal range (URL) +0.4%* range)/20℃

Static Effects	
Zero Effect	± (0.1% * Nominal range (URL) +0.1% * Nominal range / 10MPa. Avalaible elimination parameters on site
Range Effect	± (0.15% * Nominal range (URL)/ 10MPa.

Responds Time	150mS
Stability	±0.15%URL/ 24 Months

Nominal range: 35kPa 100kPa 250kPa 1000kPa

Reference accuracy		
Linear output	Standard	Linearity, hysteresis start from zero
		±0.075% Range
	Adjustment range	The range ratio (TD)= Nominal range/ Range, TD>10
		±0.02(URL/Range)%Range
Square root output	1.5 times of above linear reference output accuracy.	

Ambient temperature effects (Calibration Temperature: 25℃)	
-20 ~60℃	TD>10, ± (0.02%* Nominal range (URL) +0.075%* range)/20℃
	TD>10, ± (0.03%* Nominal range (URL) +0.2%* range)/20℃
Others	TD<10, ± (0.04%* Nominal range (URL) +0.3%* range)/20℃
	TD<10, ± (0.06%* Nominal range (URL) +0.5%* range)/20℃

Responds time	150mS
Stability	±0.1%URL/ 36 Months

Installation position influence

Any position installation, the maximum value< 400Pa, and can be eliminated to 0

Vibration effects

Test standard: IEC61298-3, <0.1% URL

Power supply effects

Power supply 20~30VDC, Load value ≤300Ω, 0.001% URL /10v

Loading effects

Power supply 20~30 VDC, Load value 0~800Ω, Accuracy effect value< 0.005%URL

Fix output

Parameters	Fix output value
FIX/C NO	None
3.8000	3.8000mA
4.0000	4.0000mA
8.0000	8.0000mA
12.000	12.000mA
16.000	16.000mA
20.000	20.000mA
20.800	20.800mA
*Note, refers to the transmitter signal output and the host computer signal input calibration, usded in field under the errors diagnosis in electromagnetic interference and excessive cable resistance	

Quick menu

Parameter	Instruction
PV=0	Set current output to zero value, used to correct the error cased by static pressure and installation.
Zero adjustment	Set current pressure value is zero, used in field under the condition of the zero adjustment
Span adjustment	Set current pressure value is zero, used in field under the condition of the zero adjustment
Restore factory setting	Restore backup data when error

Environment condition

Items	Operation condition
Working temperature	-40-85℃, integrated LCD display:-20-70℃
Storage temperature	-40-110℃, integrated LCD display:-40-85℃
Media temperature	Silicon oil filling: -40-80℃,-40-70℃, under vacuum environment,
	Fluor**ocarbon** oil filling: -10-80℃, -10-60℃, under vacuum environment
Working humidity	0-95%RH
Protection class	IP67
Dangerous condition	Reference dangerous places license

Power supply

Type	Operation condition
Standard	10.5~**55** VDC
Transient resistance module	**10.5**~**55** VDC
Intrinsic safety	12~30 VDC
HART communication protocol	**16.5**~**55** VDC, load resistance 250Ω
Load resistance	(Power supply 10 VDC) / 22mA
Transmission distance	4~20mA, 4~20mA + HART about 1000m
Power consumption	≤50mW

Pressure limit

Nominal range	Overload
All range	1.5 times overload or depends on maxmium pressure value of process connection

EMC Environment

Standard	Emission requirements in line with the 61000-6-3, protection requirements and test accord with ENEN61000-6-2
Radio frequency protection	30V/m(1000-4-3 , **61000-4-3**)
Conduction protection	30V (1000-4-6 , 61000-4-6)

Vibration environment

Vibration resistence	Up to 2 g acceleration and highest frequency to 1000 hz (IEC 60068-2-6)
Impact resistence	Acceleration, 50 g; Duration of 11 ms IEC (60068-2-27)

Other

Turn-on time	2S, Meeting parameter index

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Product selection instruction

Sensor type

Code	Type	Description
G	Pressure sensor type	Gauge pressure type
A		Absolute pressure type
N		High vacuum occasions (Measuring absolute pressure value <20kPa)
F	Seal way	Stainless steel welding seal

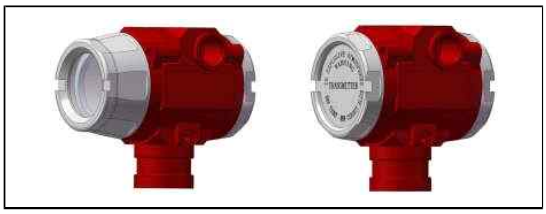
Range code

Code	Nominal value	Description
S602	6kPa	Nominal value: 6kPa, smallest value 5kPa
S353	35kPa	Nominal value: 35kPa, smallest value 10kPa
S104	100kPa	Nominal value: 100kPa, smallest value 50kPa
S254	250kPa	Nominal value: 250kPa, smallest value 100kPa
S105	1000kPa	Nominal value: 1000kPa, smallest value 500kPa
Note: Absolute pressure sensor minimum nominal value: 35 kPa, Gauge pressure sensor LRL: -100 kPa, Absolute pressure sensor LRL: 0kPa		

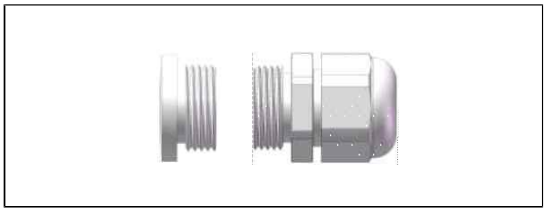
Electrical connection

Code	Item	Description
T1	Electrical connection	Aluminum-alloy terminal,2 cable entry M20*1.5(F), red body, white cover
R1	Cable entry protector	Waterproof connector M20X1.5 one side , blind plug another side, PVC material,6-8mm diameter cable only, IP67
R2		Flame proof, 1/2 NPT(F) one side, blind plug another side, stainless steel material, 6-8mm diameter cable only,IP67
R3		Flame proof, M20X1.5(F) one side, blind plug another side, stainless steel material, 6-8mm diameter cable only,IP67

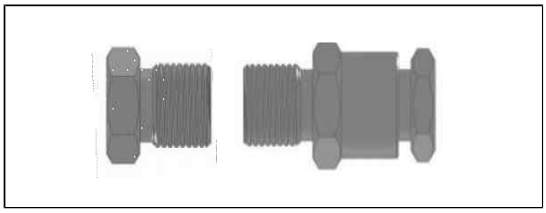
Housing(T1)



Standard cable entry protective adaptor(R1)



Flame proof cable entry protective adaptor(R2/R3)

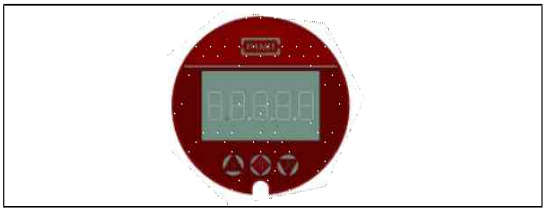


Product selection instruction

Transmission module

Code	Items	Description
F	Output signal	4-20mA two wire, power supply: 10.5-55VDC
H		4-20mA+HART two wire, power supply:16.5-55VDC
A	Display	Without display
C		With LCD display

Display module (C)



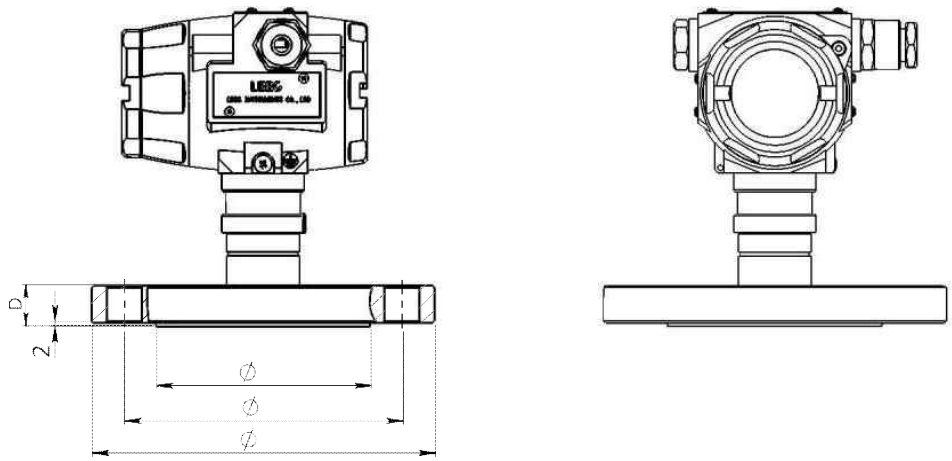
Terminals

Isolation diaphragm

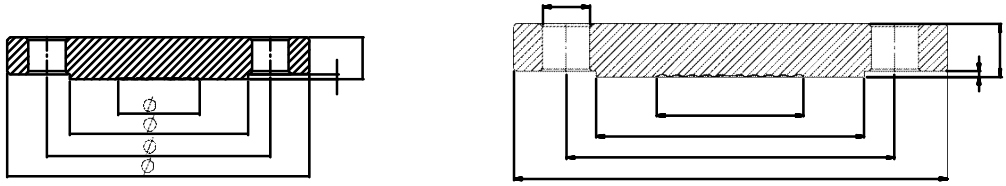
Process connection select instruction

Code	Items	Description
4	Process connector material	Stainless steel, SUS304
6		Stainless steel, SUS316
NT	Connection type	Standard connection, medium temperature: -25-85℃
HT		With Cooling Element, suitable for medium temperature -40-150℃
UT		With Capillary Element, suitable for medium temperature -40-300℃
S	Isolation fluid filling	Silicon oil, process temperature: -45-205℃
H		High-temperature silicon oil, process temperature: 0-315℃
S	Isolation diaphragm material	Stainless steel, SUS316L
T		Tantalum
P		SUS316 +PTFE cover
H		Hastelloy alloy C
8		Tantalum + PTFE cover
9		Hastelloy C + PTFE cover

Product drawing and dimension



Flange Drawing and Dimension



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Ordering information chapter

Item	Parameters	Code	Instruction	(＊) fast delivery available
	General Model	KC-8100G/A-FD	Flange Direct Mounting Gauge/Absolute pressure transmitter	
	Ex-proof Model	SMP858-TST		
Sensor	Separator	-	Detailed specifications as following	
	Pressure range code	S602G	Nominal value: 6kPa	
		S353G	Nominal value: 35kPa	＊
		S104G	Nominal value: 100kPa	＊
		S254G	Nominal value: 250kPa	＊
		S105G	Nominal value: 1000kPa	
	Pressure type	G	Gauge pressure type	＊
		A	Absolute pressure type	＊
		N	High vacuum occasions (Measuring absolute pressure value <20kPa)	
	Sensor seal	F	Stainless steel welding seal	＊
Electrical connection	Separator	-	Detailed specifications as following	
	Electrical connection	T1	Aluminum-alloy terminal,2 cable entry M20*1.5(F), red body, white cover	＊
	Cable entry protector	R1	Waterproof connector M20X1.5 one side , blind plug another side, PVC material,6-8mm diameter cable only, IP67	＊
		R2	Flame proof, 1/2 NPT(F) one side, blind plug another side, stainless steel material, 6-8mm diameter cable only, IP67	＊
		R3	Flame proof, M20X1.5(F) one side, blind plug another side, stainless steel material, 6-8mm diameter cable only, IP67	＊
Output	Separator	-	Detailed specifications as following	
	Output signal	F	4-20mA two wire, power supply: 10.5~55VDC	＊
		H	4-20mA+HART two wire, power supply: 16.5~55VDC	＊
	Display	C	LCD display	＊
		A	Without LCD display	＊
Process connection	Separator	-	Detailed specifications as following	
	Process connector material	4	Stainless Steel SUS304	＊
		6	Stainless steel SUS316	＊
	Connection type	NT	Standard connection, suitable for medium temperature -25- 85℃	＊
		HT	With Cooling Element, suitable for medium temperature -40- 150℃	＊
		UT	With Capillary Element, suitable for medium temperature - 40-300℃	＊
	Isolation fluid filling	S	Silicon oil, process temperature: -45-205℃	＊
		H	High-temperature silicon oil, process temperature: 0-315℃	＊

Ordering information chapter

	Isolation diaphragm material	S	SUS316L	*
		T	Tantalum	
		P	SUS316 +PTFE cover	
		H	Hastelloy C	*
		8	Tantalum + PTFE cover	
		9	Hastelloy C + PTFE cover	
	Process connection specifications	H01	HG/T 20592-2009 DN50PN10 Flange	*
		H02	HG/T 20592-2009 DN25PN10 Flange	*
Additional options	Separator	-	Detailed specifications as following	
	Display mode	/D1	According to your requirement	*
	Calibration report	/Q1	Calibration report provide by our company	*
		/Q2	Calibration report provide by chinese authorised third party	*
	Approvals	/E1	Flame proof certificate, ExdIICT6, NEPSI	*
		/I1	Intrinsic safety certificate, ExiaIICT4, NEPSI	*
		/F3	CE certificate	*
	Wetted parts treatment	/G1	Ungrease treatment	*
		/G2	Electropolishing treatment	*

Factory settings and parameters

Item	Menu mark	Factory setting value
Tag position	None	0(No specific settings)
Analog output type	mA	Liner
Display mode	DISP	PV
Alarm signal	ALARM	No

Item	Menu mark	Factory setting value
Damping **value**	DAMP	0(No specific settings)
4mA Lower range value	LRV	According to the order
20mA Upper range value	URV	According to the order
Process unit	U	According to the order

Approvals

Factory certificate

Certification organization	Intertek
Quality management system	ISO9001-2008
Scope of certification	Design and production of pressure transmitter
Registration number	110804039

Intrinsic safety certificate

Certification organization name	NEPSI
License scope	SMP858 series pressure transmitter
Explosion-proof mark	ExiaIICT4
Ambient temperature	-40-+60℃
Medium maximum temperature	+120℃
Registration number	GYB16.1965X
Intrinsically safe parameter description	Maximum input voltage: 28VDC
	Maximum input current: 100mA
	Maximum input power: 0.7w
	Maximum internal equivalent parameters Ci(uF): 0
	Maximum internal equivalent parameters Li(mH): 0.01

CE

Certificate organization	ISET
License scope	SMP858 series pressure transmitter
Mark	CE
EMC instruction	2014/30/EU
Standard	EN61326-1: 2013
Registration number	IT05 1353LG 161207

Flame proof certificate

Certification organization	NEPSI
License scope	SMP858 pressure transmitter
Explosion-proof mark	ExdIICT6
Working environmental temperature	-25-+60℃
Maximum medium temperature	+80℃
Registration number	GYB16.1253X

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