

EURO GAUGE®

INDUCTIVE CONTACTS TYPE PRESSURE GAUGE

MODEL : P500 SERIES

WISE®

SERVICE INTENDED

The P500 Series designed for local reading of measured pressure and equipped with inductive contact block that allow all the combinations of contacts to be used. The contact block is mounted on the dial. The windows is fitted with a knob for external adjustment of the set points.

NOMINAL DIAMETER

100mm, 160mm

ACCURACY

±1.0% of Full Scale for pressure indication.

SCALE RANGE (MPa, kPa, bar)

-0.1 ~ 0 to 0 ~ 200MPa

WORKING PRESSURE

Steady : 75% Full Scale

Over Range Protection : 130% of Full Scale

WORKING TEMPERATURE

Ambient : -20 ~ 65°C

Fluid : -20 ~ 80°C

DEGREE OF PROTECTION

IP65



Standard Features

PRESSURE CONNECTION

Stainless Steel (316SS)

Threaded entry, radial or back.

ELEMENT

Stainless Steel (316SS), OPTION - Monel

< 10MPa : C Type Bourdon Tube

≥ 10MPa : Helical Type Bourdon Tube

CASE & BEZEL RING

Stainless Steel (304SS)

Bayonet Type

WINDOW

Safety Glass

MOVEMENT

Stainless Steel (304SS)

DIAL

White Aluminium with Black Graduations.

POINTER

Aluminium alloy, Black painted

PROCESS CONNECTION

3/8", 1/2" PT, NPT & PF

CONDUIT CONNECTION

M20 × 1.5P

OPTIONS

Electropolished Bezel Ring

ORDERING INFORMATION

BASE MODEL

P500 : INDUCTIVE CONTACT TYPE PRESSURE GAUGE

NOMINAL DIAMETER

- 4 : 100mm
- 6 : 160mm

MOUNTING TYPE(Refer to Mounting Type & Dimension)

- A : Bottom entry
- B : Bottom entry & Surface mounting flange (Only available with diameter 100mm)
- G : Lower back entry (Only available with diameter 100mm)
- N : Lower back entry & panel mounting flange (Only available with diameter 100mm)

CONTACT FUNCTION

Refer to contact function table

CONNECTION

- D : 3/8"
- E : 1/2"

CONNECTION TYPE

- B : PF
- C : PT
- D : NPT
- F : BSPT
- G : BSP
- Z : Other

UNIT

- I : MPa
- J : kPa
- H : bar

RANGE

Refer to Pressure Unit & Range Table

DIAL COLOR

- 3 : 2 Colors
- 7 : 3 Colors

OPTIONS

- O : None
- 1 : Amplifier(AC230V)

P500	4	A	3	E	D	I	047	3	1	SAMPLE MODEL NUMBER
------	---	---	---	---	---	---	-----	---	---	---------------------------

CONTACT FUNCTION TABLE

CODE	Wiring Scheme	Contact Function		Wiebrock Code No.	SLOT SENSOR	
		1st Contact	2nd Contact			
Single Contact						
1	Control vane inside the slot sensor - Contact make (normally open)			I-1	SJ2N for 100mm SJ3.5N for 160mm	
3	Control vane out of the slot sensor - Contact break (normally close)			I-2	SJ2N for 100mm SJ3.5N for 160mm	
Double Contact						
4	1st and 2nd Control vane inside the slot sensor - 1st and 2nd Contact make	<div><div>1st 1(-) 3(+)</div></div> <div><div>2nd 4(-) 6(+)</div></div>			I-11	SJ2N for 100mm SJ3.5N for 160mm
6	1st Control vane inside and 2nd Control vane out of the slot sensor - 1st Contact make 2nd Contact break	<div><div>1st 1(-) 3(+)</div></div> <div><div>2nd 4(-) 6(+)</div></div>			I-12	SJ2N for 100mm SJ3.5N for 160mm
2	1st Control vane out of the vane and 2nd Control vane inside of the vane - 1st Contact break 2nd Contact make	<div><div>1st 1(-) 3(+)</div></div> <div><div>2nd 4(-) 6(+)</div></div>			I-21	SJ2N for 100mm SJ3.5N for 160mm
5	1st and 2nd Control vane out of the slot sensor - 1st and 2nd Contact break	<div><div>1st 1(-) 3(+)</div></div> <div><div>2nd 4(-) 6(+)</div></div>			I-22	SJ2N for 100mm SJ3.5N for 160mm

Inductive alarm sensor model P500 SERIES

Service intended

WISE inductive contacts are certified for use in hazardous areas of Zone 1 and Zone 2.

power supply must be made by means of a power source certified intrinsically safe such as Pepper and Fucus model KFA6-SR2-Ex1.W

Inductive contact are also recommended for critical non-hazardous applications where an utmost of failsafe heavy duty operation is required.

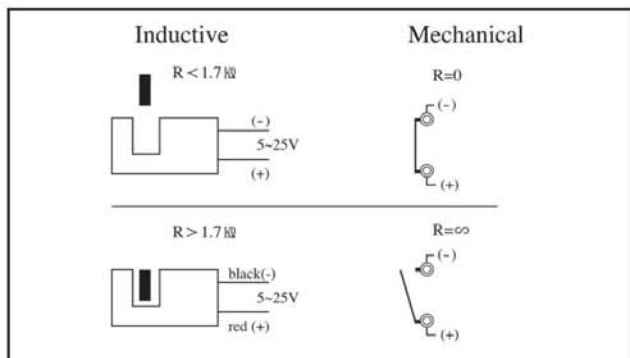
In combination with liquid filled instruments these contacts are particularly suited for process control circuits in the chemical and petroleum industry.

Operating principle

At the heart of the WISE inductive contact system is a non-contact sensor attached to an Pressure gauge. Both sensor and gauge are adjustable over the full length of the scale. Contact actuation is achieved by means of a Control vane linked to the pointer of the gauge.

The Control vane affects the electric field of the sensor when the instruments pointer overlaps with the contacts indicator. Contact actuation is made without any mechanical force that would affect accuracy of the gauge.

The scheme below reflects the operating principle in comparison with conventional mechanical contacts :



Dimensions of the basic instrument and provisions for contacts adjustment are identical to contacts of model P500.

Operating temperature: -25°C... +70°C

Used sensor (slot-type initiator):
 Type SJ of the company Pepper and Fuchs, EC-Type-
 Examination Certificate PTB 99 ATEX 2219 X

Advantage of the WISE inductive system

- Long Service life by means of non-contact sensor
- Very little effect on gauge accuracy
- No reduced rating with liquid filled gauges
- Fully suitable in corrosive or hazardous atmosphere

- Ex-approved for service in hazardous area of Zone 1 or 2

Components of the WISE inductive contact system

Operation of the inductive contact system requires an appropriate electronic power supply and control unit.

The Safety Barrier consists of

- Line transformer
- Amplifier circuit
- Relay to switch external circuit

The isolated line transformer provides for power supply whereas the amplifier conditions the signal of the inductive sensor to energise the output relay.

Available are two versions of control units

- Ex-approved intrinsic safety
- Standard for non-intrinsically safe version (optional)

Safety Barrier for inductive contacts

Ex-certified versions

Safety Barrier model KFA6-SR2-Ex1.W

- Intended for instruments having one inductive contact incorporated
- Alarm circuit certified intrinsically safe [EEx id] IIC to EN 50 227 and NAMUR
- Provides 1 SPDT relay output contact
- LED indicating circuit status (green), relay output (yellow) and lead breakage (red)

Note

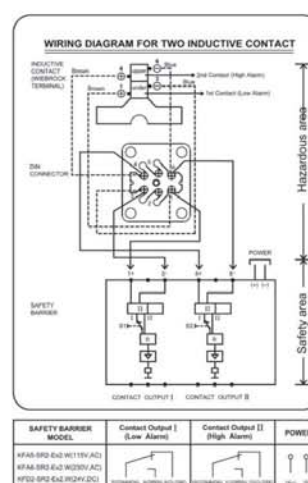
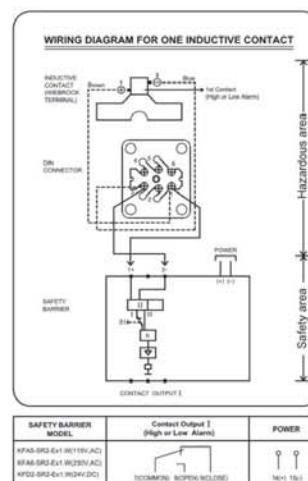
Directions of action adjustable by sliding switch S1:
 OPEN CIRCUIT CAUSES ALARM: switch S1 in position I
 CLOSED CIRCUIT CAUSES ALARM: switch S1 in position II

Safety Barrier model KFA6-SR2-Ex2.W

- Intended for 1 instrument having two or two instruments having one each contact incorporated
- Alarm circuit certified intrinsically safe [EEx id] IIC to EN 50 227 and NAMUR
- Provides 2 SPDT relay output contacts
- LED indicating circuit status (green), 2 × relay output (yellow) and 2 × lead breakage (red)
- Case surface-mounting type from B

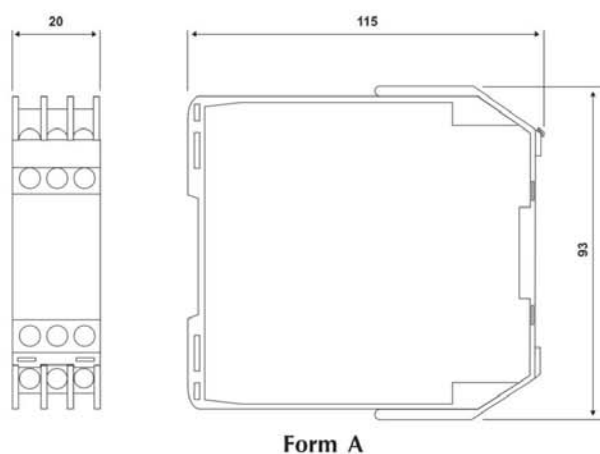
Note

Directions of action adjustable by sliding switch S1 and S2:
 OPEN CIRCUIT CAUSES ALARM: switch S1 and S2 in position I
 CLOSED CIRCUIT CAUSES ALARM: switch S1 and S2 in pos. II

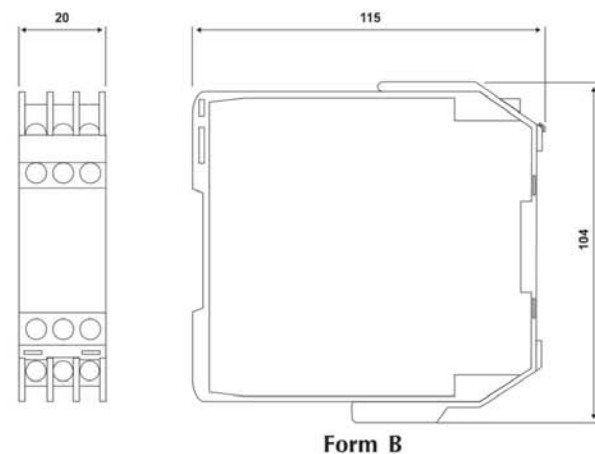


Dimensions of safety Barrier for inductive contact

MODEL : KFA6-SR2-Ex1.W



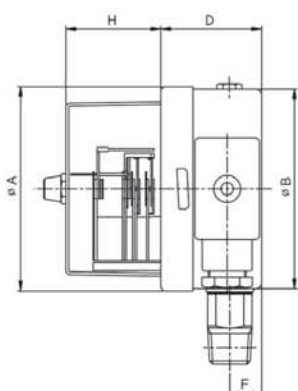
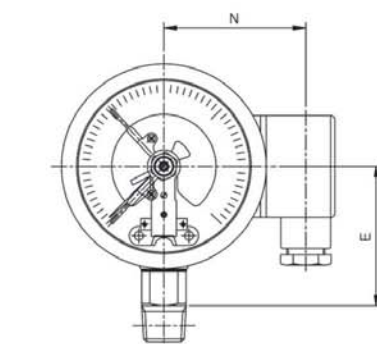
MODEL : KFA6-SR2-Ex2.W



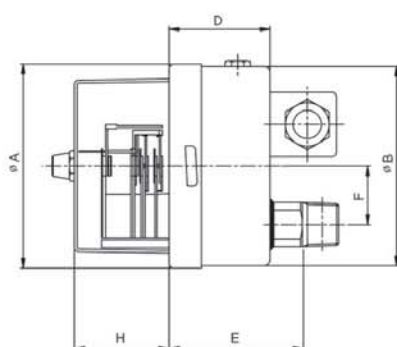
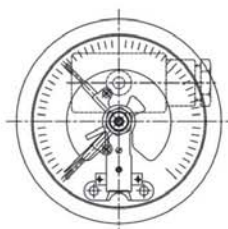
Specifications for Safety Barrier	Model KFA6-SR2-Ex1.W	Model KFA6-SR2-Ex2.W
Power supply		
Line Voltage 1)	AC 230 V \pm 0%, 45...65Hz	AC 230 V \pm 0%, 45...65Hz
Consumption	1 VA	1.3 VA
Input		
No.of contacts	1	2
Voltage(reactive)	DC 8 V	DC 8 V
Maximum current	8mA	8mA
Contact actuation	1.2 mA \leq I_s \leq 2.1 mA	1.2 mA \leq I_s \leq 2.1 mA
Contact hysteresis	ca. 0.2 mA	ca. 0.2 mA
Control line impedance	100 Ohm	100 Ohm
Ex-IS data(as PTB-certified)	PTB 00 ATEX 2081	PTB 00 ATEX 2081
Voltage	$U_o \leq$ DC 10.6 V	$U_o \leq$ DC 10.6 V
Current	$I_o \leq$ 19.1 mA	$I_o \leq$ 19.1 mA
Power rating	$P_o \leq$ 51 mW	$P_o \leq$ 51 mW
IS-classification	[EEx ia] IIC	[EEx ia] IIC
Ext. capacitance	2.9 μ F	2.9 μ F
Ext. inductance	100 mH	100 mH
Output		
Relay contacts	1 SPDT	1 ea. SPDT
Contact rating AC	253 V, 2A, 500VA, $\cos\varphi > 0.7$	253 V, 2A, 500VA, $\cos\varphi > 0.7$
Contact rating DC	4V, 2A; ohmic	4V, 2A; ohmic
Delay making circuit	approx. 20ms	approx. 20ms
Delay breaking circuit	approx. 20ms	approx. 20ms
Max. ON-OFF frequency	10 Hz	10 Hz
Operating conditions		
Min. temperature	-20°C	-20°C
Max. temperature	+60°C	+60°C
Max. humidity	max. 75%	max. 75%
Ingress protection	IP 20(EN 60 529 / IEC529)	IP 20(EN 60 529 / IEC529)
Enclosure		
Style	Surface mounting	-20°C
Dimensions per drawing	From D, page 11	+60°C
Mounting	Snap-fit on 35 mm \times 7.5 mm (EN 50 022) rail. Direct mounting feasible.	
Weight	approx. 0.15kg	approx. 0.15kg
Product no.	2014505	2014505

P500-1 : TYPE OF MOUNTING

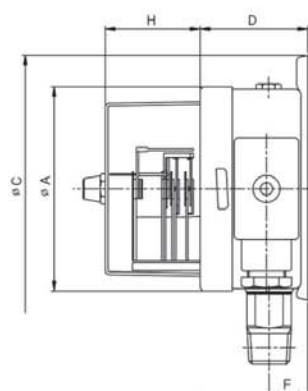
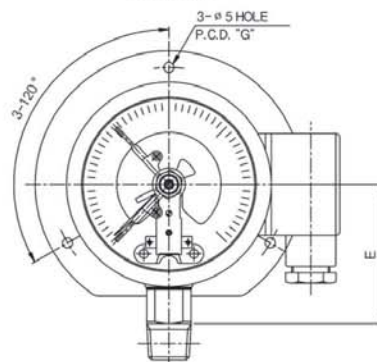
CODE A



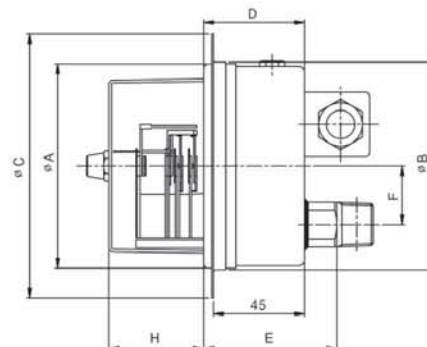
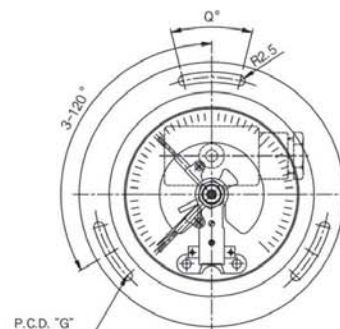
CODE G



CODE B



CODE N

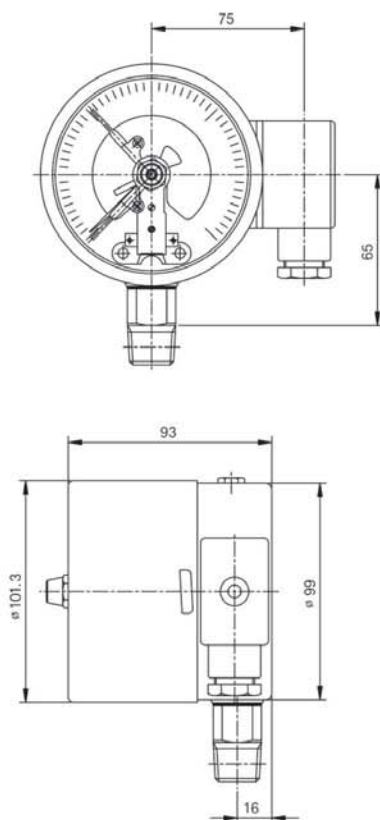


Dimensions (mm)

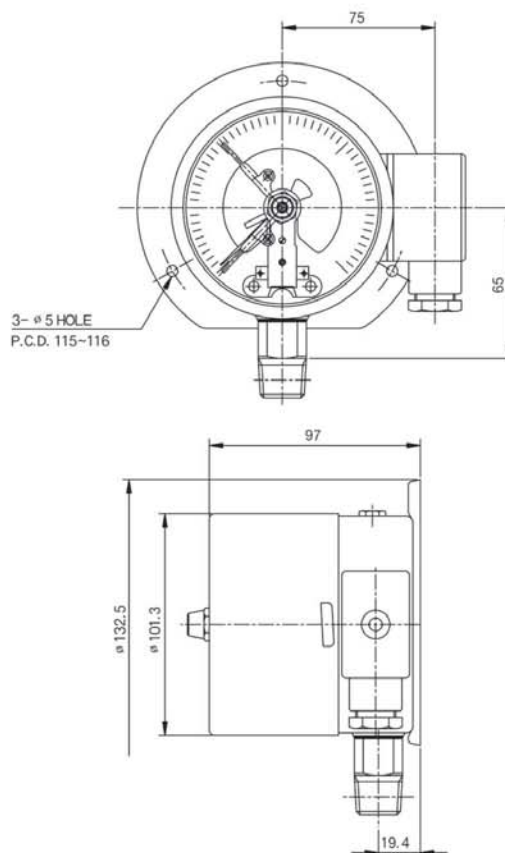
DIAL SIZE	AVAILABLE CODE	A	B	C	D	E	F	G	H	N	Q
100	A	101.3	99		50	65	16		34.5	75	
	B	101.3		133	54.4	65	19.4	116	34.5		
	G	101.3	99		50	65	29		34.5		
	N	101.3	103.1	131	50	65	29	116	34.5		28
160	A	160.6	159		52.5	94	15.8		34	105	

P500-2 : TYPE OF MOUNTING

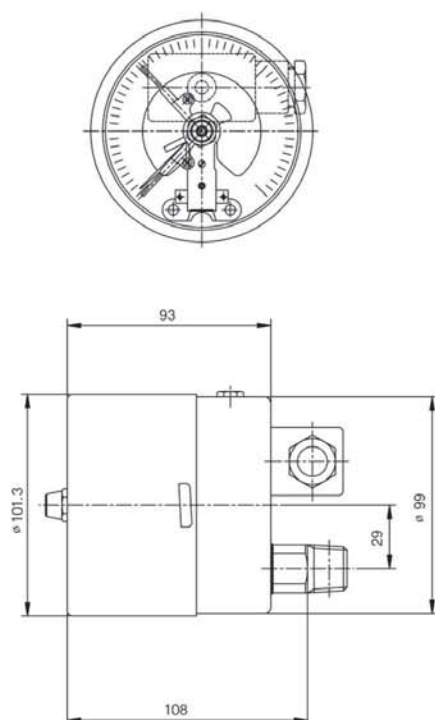
CODE A



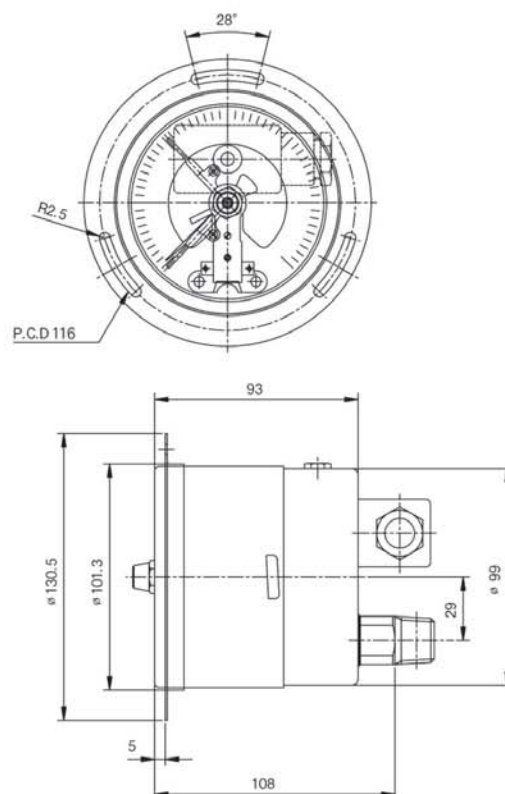
CODE B



CODE G



CODE N



PRESSURE UNIT & RANGE TABLE

RANGE & CODE	UNIT & CODE			NOMINAL DIAMETER	
	H : bar	I : MPa	J : kPa	100mm	160mm
026	-1	-0,1	-100	○	○
040	0,5	0,05	50	×	×
041	1	0,1	100	○	○
133	1,6	0,16	160	○	○
042	2	0,2	200	○	○
134	2,5	0,25	250	○	○
043	3	0,3	300	○	○
044	4	0,4	400	○	○
045	6	0,6	600	○	○
047	10	1	1000	○	○
050	15	1,5	-	○	○
143	16	1,6	-	○	○
051	20	2	-	○	○
052	25	2,5	-	○	○
054	35	3,5	-	○	○
151	40	4	-	○	○
055	50	5	-	○	○
056	60	6	-	○	○
057	70	7	-	○	○
058	100	10	-	○	○
059	150	15	-	○	○
060	160	16	-	○	○
062	250	25	-	○	○
064	350	35	-	○	○
065	400	40	-	○	○
066	500	50	-	○	○
067	600	60	-	○	○
068	700	70	-	○	○
070	1000	100	-	○	○
074	1600	160	-	×	×
075	2000	200	-	×	×
027	+1	+0,1	+100	○	○
127	-1~1,6	-0,1~0,16	-100~160	○	○
028	-1~2	-0,1~0,2	-100~200	○	○
129	-1~2,5	-0,1~0,25	-100~250	○	○
029	-1~3	-0,1~0,3	-100~300	○	○
030	-1~4	-0,1~0,4	-100~400	○	○
010	-1~5	-0,1~0,5	-100~500	○	○
031	-1~6	-0,1~0,6	-100~600	○	○
014	-1~9	-0,1~0,9	-100~900	○	○
032	-1~10	-0,1~1	-100~1000	○	○
033	-1~15	-0,1~1,5	-100~1,5MPa	○	○
034	-1~20	-0,1~2	-100~2MPa	○	○
035	-1~25	-0,1~2,5	-100~2,5MPa	○	○

○ : AVAILABLE × : NOT AVAILABLE

MEMO