
SJ


4ManPro
Elements For
Manufacturing Processes

Electric Contact Gauge, Inductive Contact

Model: PRE-IDT

PRODUCT DESCRIPTION

▼
Spark-free operation and low-energy signals, ensuring safety in explosive environments.

▼
A Various contact types available

▼
Used in chemical, petroleum, metallurgy, machinery and other industries

▼
Same specifications as WIKA 831

PRODUCT SPECIFICATION

Connection location
Bottom mount, back mount with flange, back mount without flange

Contact
EC3 inductive contacts by pepperl + Fuchs (Germany)

Electrical connections
Cable terminal box

IP Rating
IP 65

Nominal size
4", 6"

Scale ranges
-76 cmHg ... 1000 kg/cm2,
or other equivalent units of pressure, vacuum or compound

Accuracy
CL 1.6

Process connection
316L SS
1/4, 3/8, 1/2
PT, G, NPT、M

Case/Ring
304 SS

Window
Flat instrument glass

Pointer
Aluminum alloy
Black scale on white

Bourdon tube
316L SS

Filling liquid
Without, silicone oil

Movement
304 SS

Ambient temperature
-20°C ... 60°C

Medium temperature
≤190°C (unfilled)
≤95°C (silicone oil filled)

CHOICE OF CONTACTS

Due to the fact that possible operating condions can be in normal or hazardous environments, SJ Gauge offers EC1 and EC3 contact series. For hazardous or explosion prone areas only EC3 type of contacts are allowed.

EC3 Inductive contacts

SJ Gauge Inductive Electric Contacts are proximity-type electrical switching elements working in a non-contact way. Basically they consist of a pair of colls, whose magnetic field affected by a metal control flag (driven by the pointer), causing a change of output current. When the contol fag on the pointer (actual value) approaches the head (on the set value), it increases its intermal resistance and as a result the change in the current acts as the input signal for the switching amplifier of the control unit and the control unit has no effect on the work of measuring system.

This 2 or 3 wire contact with PNP output is very much compliance with PLC. On the other hand, SJ Gauge Inductive Electiccicc Contacts can be jointly used with SJ Gauge control units to switch higher electrical loads (as Instulfate control unit integsisst AC to DC convertor, switching amplifier and the output relay)

SJ Gauge EC3 contacts can be used both inside and outside Explosion Hazardous areas. Outside EX areas they can be used where there is a need for large number of switching cyles as they are contact-free so there will be wear. And Inside Hazardous area they can be used in Zone 1 and Zone 2.

CONTACT CHOICE (EC3 INDUCTIVE SERIES)

All inductive sensors with EC3 contacts are made in Germany by Pepperl+Fuchs.

CONTACT OPERATION DETAILS

Generally 3 contact operations are intended. Normally Closed, Normally Open, and Change-Over.

In the case of a normally-closed function, the rising actual-value pointer takes the contact arm with it, thus interrupting the circuit when the setpoint is reached.

In the case of a normally-open function, the rising pressure value pointer takes the contact arm with it, thus closing the circuit when the setpoint is reached.

In the case of a change-over (SPDT) contact, the rising actual-value pointer takes the contact arm with it and interrupts and then closes the circuit when it approaches the setpoint.

CONTACT FUNCTION CODES

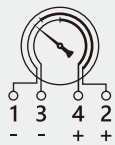
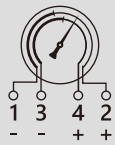
* Logics are based on a clock-wise pointer motion.

a Normally Open contact (NO)
Code: 1

a Normally Closed contact (NC)
Code: 2

a Change-over contact (SPDT)
Code: 3

SWITCHING FUNCTION OF SJ GAUGE EC3 INDUCTIVE CONTACTS

Model	Contact type	When the pointer reaches the set-point with the rising pressure, the metal flag...	and after that ...	Wiring
EC3-1	NO	...leaves the control head	...the contact will close	
EC3-2	NC	... enters the control head	... the contact will be open	
EC3-11	NO-NO	...leaves 1st control head ...leaves 2nd control head	...1st contacts will close ...2nd contact will close	
EC3-22	NC-NC	...enters 1st control head ...enters 2nd control head	...1st contact will open ...2nd contact will open	
EC3-12	NO-NC	...leaves 1st control head ...enters 2nd control head	...1st contacts will close ...2nd contact will open	
EC3-21	NC-NO	...enters 1st control head ...leaves 2nd control head	...1st contacts will open ...2nd contact will close	

The functions described in switching functions table is based on the clockwise pointer motion. In anti-clockwise motion, opposite switching results will occur.

* Use contact protection relays for high loads or liquid filled electric contact pressure gauges.
* Minimum switching current is 20mA.
* Use electronic contact for PLC service.
* If there are more than 1 contact in the instrument, the first one is considered to be the closest one to the left sided beginning value in positive ranges. (for negatives it is the ending value).
* If there are going to be 3 contacts in the instrumention them sequentially in your order confirmation.

TRIPLE INDUCTIVE CONTACT

With triple inductive contacts it is not possible set all three contacts overlapping at the same scale value.
Either the left (=no.1 contact) or the right contact (= no. 3 contact) must be at an approximate separation of of 2 30 to the left or the right of the other two contacts, which may be set to the same value:

No.1 contact offset to the left

only the second and the third contact can be overlapping

only the first and the second contact can be overlapping

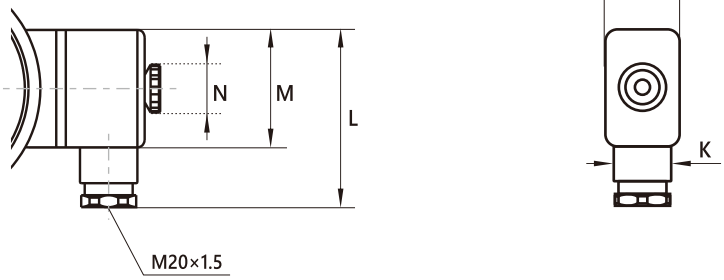
No.3 contact offset to the right

Possible configurations of triple EC3 inductive contacts:

EC3-1.11	EC3-1.21	EC3-2.11	EC3-2.21	EC3-11.1	EC3-12.1	EC3-21.1	EC3-22.1
EC3-1.12	EC3-1.22	EC3-2.12	EC3-2.22	EC3-11.2	EC3-12.2	EC3-21.2	EC3-22.2

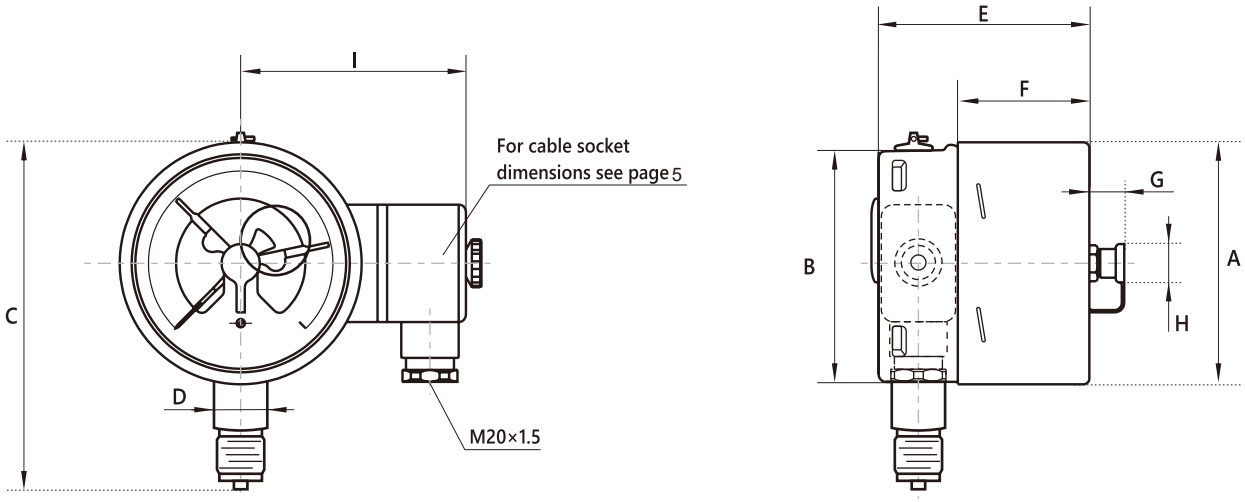
DIMENSIONS (IN MM)

Electrical Connectors for dial size 100, 160mm



Nominal Size	J	K	L	M	N
100 & 160	31.5	19.6	73	49.9	19.7

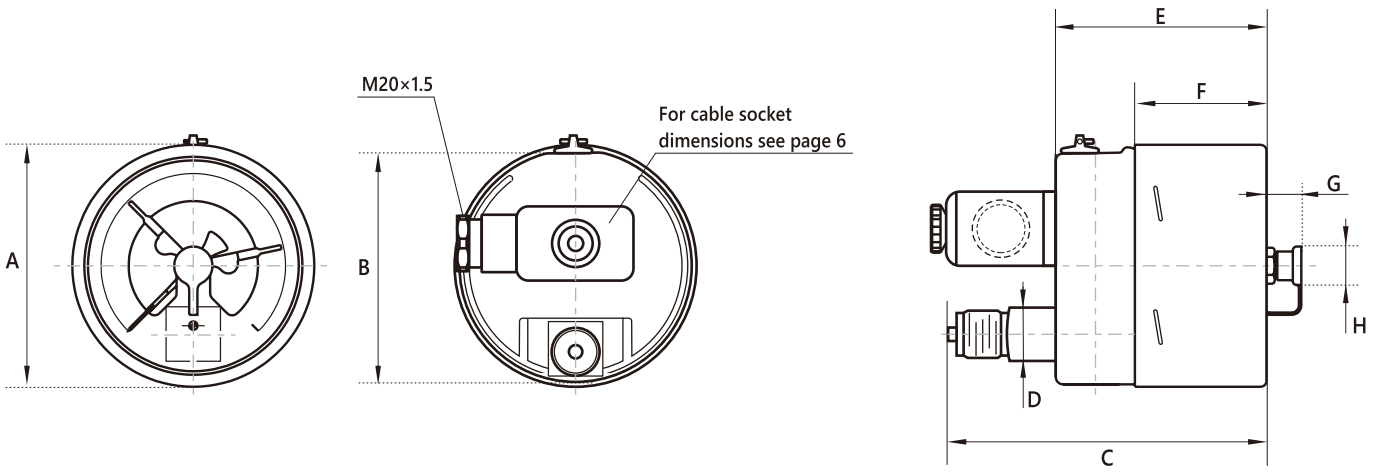
DS 100, Bottom Connection, (S1) according to EN 837-1



Nominal Size	A	B	C	D	E	F	G	H	I	KG
100	101	98.8	135.4	22	87	54	17.2	14.2	91.7	0.890

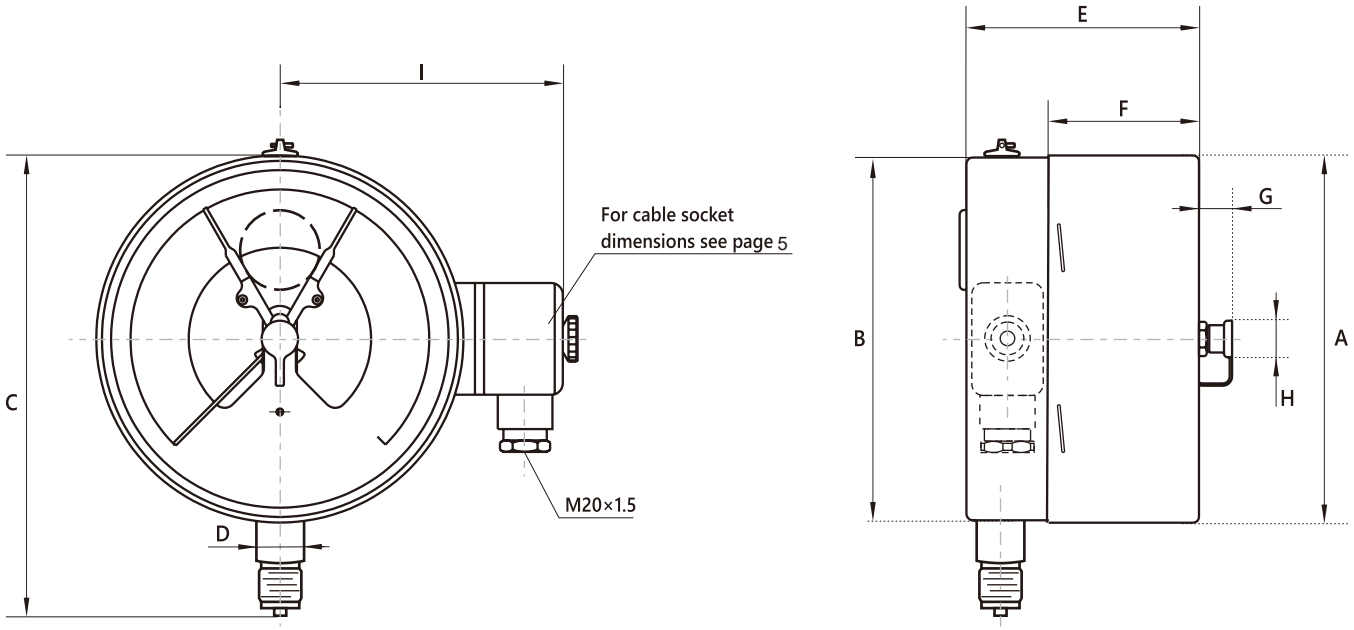
DIMENSIONS (IN MM)

837-1 DS 100, Lower Back Connection, (S1) according to EN

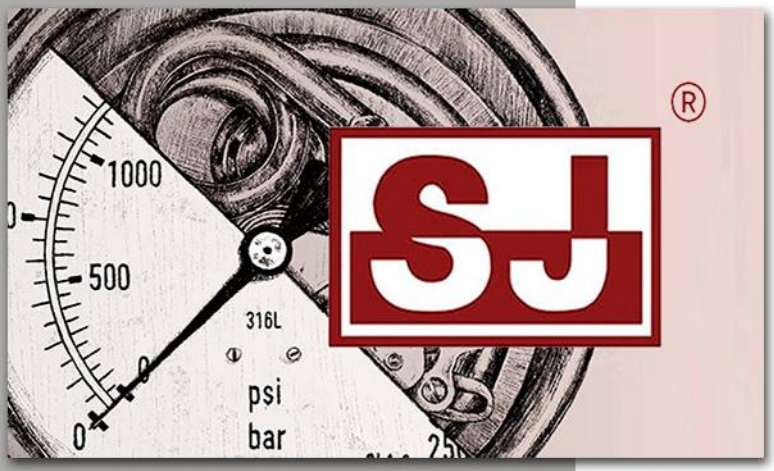


Nominal Size	A	B	C	D	E	F	G	H	KG
100	101	98.8	129.3	22	88	54	17.2	14.2	0.960

837-1 DS 160, Bottom Connection, (S1) according to EN



Nominal Size	A	B	C	D	E	F	G	H	I	KG
160	160.8	158.2	193	22	90.3	52.2	17.2	14.2	122.1	1.4



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