



Application

- ✓ Circuit switching
- ✓ Controlling general industrial processes
- ✓ Making or breaking electric circuits in a plant
- ✓ Machine building
- ✗ **Do not use** in hazardous or explosion prone areas. Check InstruMate model 214 instead

Special Features

- ✓ Make an Electric contact instrument within few minutes
- ✓ Easily adjustable contacts
- ✓ Possibility of filling the instrument
- ✓ Various switch contact options

Description

Contact-Mate 215 is a blessing for both pressure gauge stockists and customers in need of electric contact gauges with lower prices. InstruMate 215 Contact-Mate is the best choice for stockists of pressure gauges worldwide to save a lot of stocking costs for putting every single range of switch gauges in the shelves, waiting for the sales day.

At the same time, it is also a cost efficient solution for customers in general industrial applications who need circuit switching at the same time with gauge readings. So if pressure value monitoring and switching application are needed at the same time, a Contact-Mate is your cost effective solution.

Contact-Mate 215 opens or closes electric circuits depending on the position of the indicating pointer and they are a reliable choice for switching functions (normally closed, normally open, and change-over contacts).

Setpoints for contacts are adjusted easily by the use of an adjusting screw on front side of the instrument.

Choice of Contacts

Contact-Mate model 215 is enhanced with EC2 contact series. For none-explosion prone areas and none-hazardous environments, EC2 snap-action contacts can be used. InstruMate EC2 magnetic snap-action contacts have basically same functionality and logic same as InstruMate EC1 contacts, but they are redesigned and resized to fit in the easy assembly model 215 electric contact system.

EC2 Snap-action contacts

The most common and economical type of contact for switching loads of up to 30W 50VA are magnetic snap-action contacts. There is a permanent magnet there on the contact arm which with its force of magnet attracts the contact pin of moveable contact arm. The special magnet has the necessary holding force so the vibration will not be a trouble for InstruMate snap-action contacts.

EC2 contact series can be used to switch circuits in industrial applications including process control, **EXCLUDING** hazardous or explosion prone areas.

Contact Material

Due to the nature of switching function, the contacts are subject to erosion. InstruMate uses special contact alloy as 70% silver and 30% nickel which is 0.5µm gold-plated, as gold is extremely resistant to aging and corrosion.

InstruMate EC2 contacts also have low contact resistance which makes them the first choice for applications with long periods of machine downtime or where sulphurous gases are present.

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 first 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 InstruMate EC2 snap-action contacts

* 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)

Model	Contact type	When the pointer reaches the set-point with the rising pressure...	And if the pointer passes the set-point again by falling pressure...	Wiring (common terminal)
EC2-1	NO	...one Contact will close	...that contact will open again	
EC2-2	NC	...one Contact will open	...that contact will close again	
EC2-3	SPDT	...one contact will open and one contact will close at the set-point value	...one contact will close and one contact will open again at the set-point value	
EC2-33	DPDT	...1 st and 2 nd contact both will open and close at the set-point value...	...2 nd and 1 st contact will close and open again at the set-point value...	
EC2-11	NO-NO	...1 st and 2 nd contacts will close	...the contacts will open again accordingly	
EC2-22	NC-NC	...1 st and 2 nd contacts will open	...the contacts will close again accordingly	
EC2-12	NO-NC	...1 st contact will close and 2 nd contact will open	...2 nd contact will close and 1 st contact will open again	
EC2-21	NC-NO	...1 st contact will open and 2 nd contact will close	...2 nd contact will open and 1 st contact will close again	

The switching functions described 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.

* Use electronic contact for PLC service.

Maximum Contact Ratings for EC2 snap-action contacts

Max. contact ratings with resistive loads	Not filled instrument	Filled instrument
Contact closing	0.9 A	0.9 A
Contact opening	0.9 A	0.9 A
Continuous load	0.55 A	0.55 A
Maximum load	30 W / 50 VA	20 W / 20 VA
Ambient temperature	-20...+60°C	-25...+60°C

* For snap-action change-over contacts (SPDT, DPDT) the maximum load will be 10 W/ ~18VA and maximum thermal current will be 0.38 A, and the contact rating will be approximately 30% less than the other version.

* It is advised to follow recommended contact ratings to ensure longtime durability of the instrument.

Recommended Contact Ratings for EC2 snap-action contacts

Voltage	Magnetic Snap-action EC2 Unfilled Instrument	
	Resistive load (mA)	Inductive load (mA)
24V DC	400	250
24V AC	600	250
48V DC	300	200
48V AC	450	200
110V DC	200	125
110V AC	240	125
230V DC	100	65
230V AC	120	65

* Abovementioned values are reduced by approximately 40% if the instrument is filled. It is advised that switching current does not fall below 25 mA and the switching voltage shall not fall below 24 V. It is highly recommended to use contact protection relays for higher loads and liquid filled instruments.

Possible Instrument Combinations

Contact-Mate 215 can be installed on the following instruments to make an electric contact gauge together:

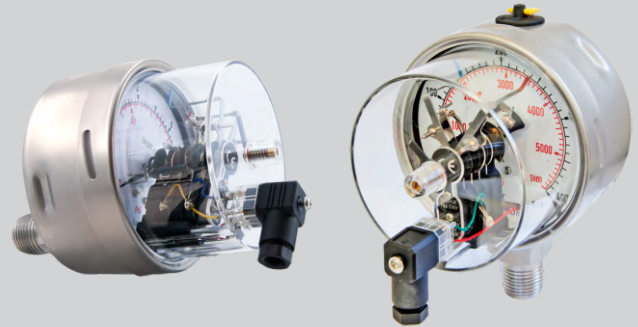
With full stainless steel pressure gauges, models:

113AAL100

113AAB100

* Fillable with silicon oil

* Combination applies to ranges ≥ 2.5 bar



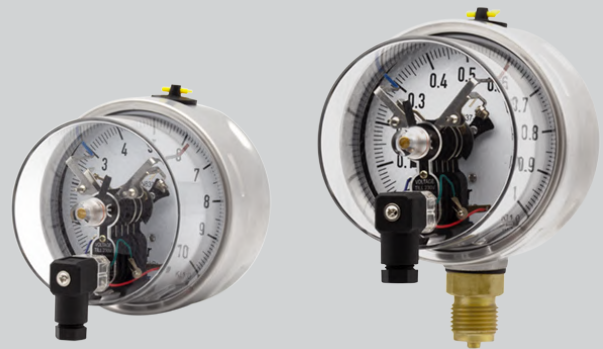
With oil fillable pressure gauge (DIN case), models:

112AAL100

112AAB100

* Fillable with silicon oil

* Combination applies to ranges ≥ 2.5 bar



With InstruMate Superior Bi-metal Thermometers, models:

414-100L

414-100B

414-100E



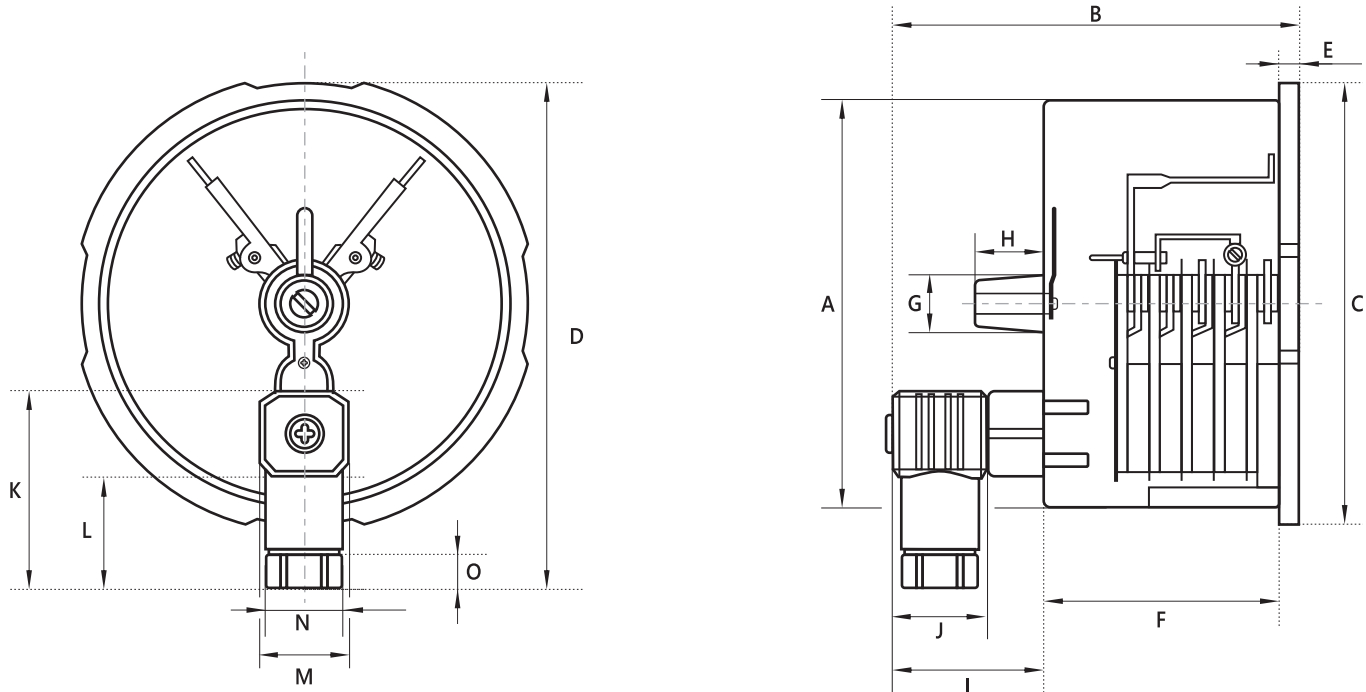
With InstruMate gas-actuated temperature gauges:

422-100L

422-100B

* Fillable with silicon oil

Dimensions (in mm)



NS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	KG
100	86	71	97	107	3	43.5	12	12	25	15	34.5	19	16	13	5	0.1

How To Order

Product Group Name Model Contact Model

Example: Contact-Mate 215 EC2-21

Or simply order by item number on the basis of your previous purchases.

InstruMate®

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