

# DIFFERENTIAL PRESSURE TRANSMITTER

**DATA SHEET**
**FKC...6**

The FKC model of the FCX-A IV series of pressure transmitters accurately measures a differential pressure, a liquid level or a flow rate and transmits a proportional 4-20 mA output signal. The transmitter uses a unique microcapacitive silicon sensor in combination with a state-of-the-art digital signal processing to provide exceptional performances in terms of accuracy and stability.

FCX-A IV series of pressure transmitters comply with Safety Integrity Level 2 or 3 according to IEC 61508 and IEC 61511 standards.



## FEATURES

### 1. High accuracy up to $\pm 0.04\%$

Fuji Electric's micro-capacitive silicon sensor provides in standard  $\pm 0,065\%$  accuracy for all elevated or suppressed calibration ranges without additional adjustments.  $\pm 0.04\%$  accuracy is available in option.

### 2. Minimum inventory and design

Electronic parts, local indicator and electronic housing are interchangeable among all FCX-A IV transmitters.

### 3. Minimum environmental influence

The Advanced Floating Cell technology provides a high immunity against temperature variations, static pressure and overpressure commonly found in the process industry and substantially reduces the overall measurement error.

### 4. HART 7 communication protocols

FCX-A IV series of pressure transmitters can communicate using the universal HART communication protocol.

By the use of the HART Device Description files, HART compatible devices can communicate with any FCX-A IV transmitter.

### 5. Application flexibility

Various options are available to address most of the process industry applications, including:

- Full range of hazardous area approvals
- Built-in RFI filter and lightning arrester
- 5 digits local display with engineering units
- Stainless steel electronics housing
- Wide selection of wetted part materials

### 6. Programmable output Linearization Function

The output signal can be linearized using up to 14 pairpoints.

### 7. Burnout current flexibility

The burnout current value can be adjusted in the ranges of [3.4 ; 3.8] and [20.8 ; 22.5] mA and can be compliant with NAMUR NE43 recommendations.

### 8. Contactless local adjustment

An optional local configurator with 3 magnetic switches allows to configure the transmitter without opening the indicator cover (flameproof approvals for hazardous locations) The Magnetic pen is required to enable the 3 magnetic switches (Please refer to ACCESSORIES).

## SPECIFICATIONS

### Functional specifications

#### Type:

FKC: Smart, 4-20mA with HART communication protocol

#### Service:

Liquid, gas, or vapour

#### Static pressure, span, and range limits:

| Model   | Static pressure<br>MPa {bar}  | Span limits kPa<br>{m bar} |                   | Range limits<br>kPa {m bar}            |
|---------|-------------------------------|----------------------------|-------------------|--|
|         |                               | Min.                       | Max.              |  |
| FKC□11  | -0.1 to + 3.2<br>{-1 to + 32} | 0.1<br>{1}                 | 1<br>{10}         | $\pm 1$<br>{ $\pm 10$ }                |
| FKC□22  | -0.1 to + 10<br>{-1 to + 100} | 0.1<br>{1}                 | 6<br>{60}         | $\pm 6$<br>{ $\pm 60$ }                |
| FKC□33  | -0.1 to + 16<br>{-1 to + 160} | 0.32<br>{3.2}              | 32<br>{320}       | $\pm 32$<br>{ $\pm 320$ }              |
| FKC□35  | -0.1 to + 16<br>{-1 to + 160} | 1.3<br>{13}                | 130<br>{1300}     | $\pm 130$<br>{ $\pm 1300$ }            |
| FKC□36  | -0.1 to + 16<br>{-1 to + 160} | 5<br>{50}                  | 500<br>{5000}     | $\pm 500$<br>{ $\pm 5000$ }            |
| FKC□38  | -0.1 to + 16<br>{-1 to + 160} | 30<br>{300}                | 3000<br>{30000}   | $\pm 3000$<br>{ $\pm 30000$ }          |
| FKC□43  | -0.1 to + 42<br>{-1 to + 420} | 0.32<br>{3.2}              | 32<br>{320}       | $\pm 32$<br>{ $\pm 320$ }              |
| FKC□45  | -0.1 to + 42<br>{-1 to + 420} | 1.3<br>{13}                | 130<br>{1300}     | $\pm 130$<br>{ $\pm 1300$ }            |
| FKC□46  | -0.1 to + 42<br>{-1 to + 420} | 5<br>{50}                  | 500<br>{5000}     | $\pm 500$<br>{ $\pm 5000$ }            |
| FKC□48  | -0.1 to + 30<br>{-1 to + 300} | 30<br>{300}                | 3000<br>{30000}   | $\pm 3000$<br>{ $\pm 30000$ }          |
| FKC□49* | -0.1 to + 30<br>{-1 to + 300} | 500<br>{5000}              | 20000<br>{200000} | {+20000, -10000}<br>{+200000, -100000} |

Note: Span higher than 1/10 of the URL is recommended for optimal accuracy.

Important: For FKC#49, the maximum possible overload pressure on LP side must be  $\leq 100$  bar. The accuracy is not guaranteed when used at negative DP.

#### Lower limit of static pressure (vacuum limit):

Silicone fill sensor: See Fig. 1

Fluorinated fill sensor:

66kPa abs (500mHg abs) at temperature -20 to 60°C

#### Over range limit:

To maximum static pressure limit

**Output signal:**

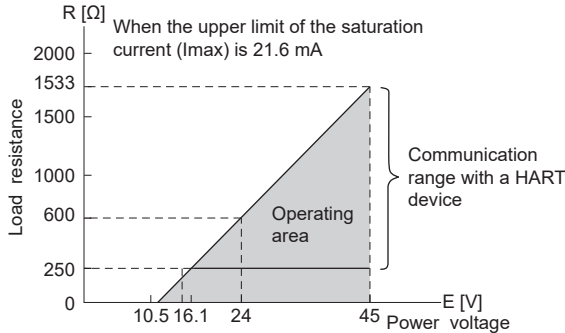
4-20 mA (linear or square root) with HART communication protocol

**Power supply:**

10.5 to 45 V DC at transmitter terminals.  
10.5 to 32 V DC with the optional arrester.

Refer to hazardous location table for specific limitations

**Load limitations:** see figure below



Note 1 : The load resistance varies with the upper limit of the saturation current [I max]

$$R [\Omega] = \frac{E [V]-10.5}{(I \text{ max [mA]}+0.9)\times 10^{-3}}$$

Note 2 : For communication with a HART device, a minimum load of 250 Ω is required.

**Hazardous locations:**

| Marking (Digit 10 <sup>th</sup> ) | Protection type               |   |                          |                     |
|-----------------------------------|-------------------------------|---|--------------------------|---------------------|
| ATEX                              | K                             | Intrinsic Safety "i"                                      |                          |                     |
|                                   |                               | Ex II1 G/D  |                          |                     |
|                                   |                               | Ex ia IIC T4 Ga (Ta: -40°C to +60°C)                      |                          |                     |
|                                   |                               | Ex ia IIC T5 Ga (Ta: -40°C to +50°C)                      |                          |                     |
|                                   |                               | Ex ia IIIC T <sub>200</sub> 135°C Da (Ta: -40°C to +60°C) |                          |                     |
|                                   |                               | Ex ia IIIC T <sub>200</sub> 100°C Da (Ta: -40°C to +50°C) |                          |                     |
|                                   |                               | Ui = 28Vdc, li = 110mA, Pi = 0.77W                        |                          |                     |
|                                   |                               | Ci = 14.9nF (without optional Arrester)                   |                          |                     |
|                                   |                               | Ci = 26.0nF (with optional Arrester)                      |                          |                     |
|                                   |                               | Li = 0.181mH  |                          |                     |
|                                   |                               | IP66/67   |                          |                     |
|                                   |                               | X   | Flameproof Enclosure "d" |                     |
|                                   | Ex II2 G                      |   |                          |                     |
|                                   | Ex db IIC T6... T4 Gb         |   |                          |                     |
|                                   | Temperature class             |   | Ambient temperature      | Process temperature |
|                                   | T6                            |   | -40°C to +65°C           | -40°C to +85°C      |
|                                   | T5                            |   | -40°C to +85°C           | -40°C to +100°C     |
|                                   | IP66/67                       |   |                          |                     |
| M                                 | Combination (K) + (X) pending |   |                          |                     |
| IECEx                             | T                             | Intrinsic Safety "i"                                      |                          |                     |
|                                   |                               | Ex ia IIC T4 Ga (Ta: -40°C to +60°C)                      |                          |                     |
|                                   |                               | Ex ia IIC T5 Ga (Ta: -40°C to +50°C)                      |                          |                     |
|                                   |                               | Ex ia IIIC T <sub>200</sub> 135°C Da (Ta: -40°C to +60°C) |                          |                     |
|                                   |                               | Ex ia IIIC T <sub>200</sub> 100°C Da (Ta: -40°C to +50°C) |                          |                     |
|                                   |                               | Ui = 28Vdc, li = 110mA, Pi = 0.77W                        |                          |                     |
|                                   |                               | Ci = 14.9nF (without optional Arrester)                   |                          |                     |
|                                   |                               | Ci = 26.0nF (with optional Arrester)                      |                          |                     |
|                                   |                               | Li = 0.181mH  |                          |                     |
|                                   |                               | IP66/67   |                          |                     |
|                                   |                               | R   | Flameproof Enclosure "d" |                     |
|                                   |                               |   | Ex db IIC T6... T4 Gb    |                     |
|                                   | Temperature class             |   | Ambient temperature      | Process temperature |
|                                   | T6                            |   | -40°C to +65°C           | -40°C to +85°C      |
|                                   | T5                            |   | -40°C to +85°C           | -40°C to +100°C     |
|                                   | IP66/67                       |   |                          |                     |
|                                   | N                             | Combination (T) + (R) pending                             |                          |                     |

| cCSAus pending | J | Intrinsic Safety/Non-Incendive  |                       |
|----------------|---|---|-----------------------|
|                |   | IS Class I Division 1 Groups ABCD Ex ia<br>Class II Groups EFG, Class III<br>NI Class I Division 2 Groups ABCD<br>T4 (-40°C ≤ Ta ≤ +60°C)<br>T5 (-40°C ≤ Ta ≤ +50°C)<br>Ui = 28Vdc, li = 110mA, Pi = 0.77W<br>Ci = 14.9nF (without optional Arrester)<br>Ci = 26.0nF (with optional Arrester)<br>Li = 0.181mH |                       |
| E              |   | Flameproof Enclosure  |                       |
|                |   | XP Class I Division 1 Groups CD<br>Class II Groups EFG, Class III<br>T6 (-40°C ≤ Ta ≤ +65°C)<br>T5 (-40°C ≤ Ta ≤ +85°C)<br>T4 (-40°C ≤ Ta ≤ +60°C)<br>Vmax = 45Vdc  |                       |
|                |   | L   | Combination (J) + (E) |

**Configuration:**

Configuration of the FCX-A IV series of pressure transmitters can be carried out by either using a HART device or the optional local configurator.

A third party HART device can be used in combination with Fuji Electric FCX-A IV HART Device Description files. (<https://fieldcommgroup.org>).

| Functions                     | HART Protocol |     | Local configurator |     |
|-------------------------------|---------------|-----|--------------------|-----|
|                               | Display       | Set | Display            | Set |
| Tag Nb                        | ✓             | ✓   | ✓                  | ✓   |
| Model Nb                      | ✓             | ✓   | ✓                  | ✓   |
| Serial Nb & Software revision | ✓             | —   | ✓                  | —   |
| Engineering units             | ✓             | ✓   | ✓                  | ✓   |
| Upper Range Value             | ✓             | —   | ✓                  | —   |
| Measuring Range               | ✓             | ✓   | ✓                  | ✓   |
| Damping                       | ✓             | ✓   | ✓                  | ✓   |
| Output signal type            | Linear        | ✓   | ✓                  | ✓   |
|                               | Square Root   | ✓   | ✓                  | ✓   |
| Burnout current               | ✓             | ✓   | ✓                  | ✓   |
| Calibration                   | ✓             | ✓   | ✓                  | ✓   |
| Output Adjust                 | —             | ✓   | —                  | ✓   |
| Measuring Value               | ✓             | —   | ✓                  | —   |
| Self Diagnosis                | ✓             | —   | ✓                  | —   |
| External Adj Screw Lock       | ✓             | ✓   | ✓                  | ✓   |
| Transmitter Display           | ✓             | ✓   | ✓                  | ✓   |
| Linearization                 | ✓             | ✓   | ✓                  | ✓   |
| Rerange                       | ✓             | ✓   | ✓                  | ✓   |
| Saturation Current            | ✓             | ✓   | ✓                  | ✓   |
| Write Protect                 | ✓             | ✓   | ✓                  | ✓   |
| History                       |               |     |                    |     |
| – Calibration History         | ✓             | ✓   | ✓                  | ✓   |
| – Ambient T° History          | ✓             | —   | ✓                  | —   |

**Zero and span adjustment:**

Zero and span are remotely adjustable by a HART device or locally by the local configurator or the external adjustment screw.

**Damping:**

The damping time constant can be adjusted within the range of [0.04 to 32] seconds.

**Zero elevation / suppression:**

Zero can be adjusted within the range of ±100% of the URL of the sensor.

**Normal / reverse action:**

Selectable by range setting.

**Local indicator:**

Optional 5-digits LCD unit or local configurator with 3 magnetic switches and push-buttons.

A magnetic pen is required to enable this local configurator function.

(Please refer to the ACCESSORIES section.)

**Saturation currents:**

Lower limit: 3.6 to 4.0mA, Default value: 3.8mA

Upper limit: 20.0 to 21.6mA, Default value: 20.8mA

**Burnout direction and output current:**

In the self-diagnostic functions detect a transmitter failure, the burnout function will drive the output signal to either "Output Hold", "Output Overscale" or "Output Underscale" modes.

**When "Output Hold":**

The output signal is held as the latest value just before the failure happens.

**When "Output Overscale":**

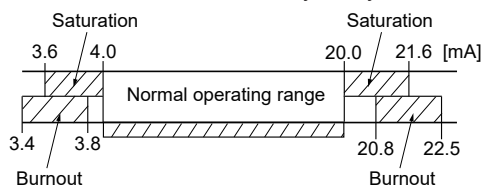
The output signal is set within the range of [20.8 to 22.5] mA, Default value: 21.6mA

**When "Output Underscale":**

The output signal is set within the range of [3.4 to 3.8] mA, Default value: 3.6mA

**IEC 61511 considerations:**

For safety applications, the "Output Hold" MUST NOT be used. Only "Output Overscale" and "Output Underscale" must be used to clearly notify a "failure" state.



**Loop-check / fixed output current:**

The transmitter can be configured to provide a constant output signal from 3.4 to 22.5 mA.

**Low flow cut-off:**

The output signal is proportional to  $\sqrt{}$  differential pressure between low flow cut-off and the measuring range. Between zero and low flow cut-off, the output signal is programmable to zero or linear between 0 and 20% of the flow.

**Temperature limit:**

Ambient:

-40 to +85°C

-20 to +80°C (with optional LCD unit)

-40 to +60°C (with optional arrester)

Please refer to the hazardous locations table for ambient temperature limitations according to the standard and type of protection.

Process: -40 to +120°C for silicone fill sensor

-20 to +80°C for fluorinated oil fill sensor

Storage: -40 to +90°C

**Humidity limit:**

0 to 100% RH (Relative Humidity)

**Performance specifications for linear output**

Reference conditions, silicone filling oil, SS 316L isolating diaphragms, 4 to 20 mA analog output in linear mode.

**Accuracy rating:**

(including linearity, hysteresis, and repeatability)

**Max span: 32 kPa to 3000 kPa models:**

For spans > 1/10 of URL:

$\pm 0.065\%$  of span or  $\pm 0.04\%$  of span (optional)

For spans < 1/10 of URL:

$\pm (0.015 + 0.005 \times \frac{URL}{Span})$  % of span

**Max span 20 MPa model:**

For spans  $\geq 5$  MPa:  $\pm 0.1\%$  of span

For spans < 5 MPa:

$\pm (0.05 + 0.05 \times \frac{5MPa}{Span})$  % of span

**Max span 1 kPa and 6 kPa models:**

For spans greater than 1/10 of URL:  $\pm 0.1\%$  of span

For spans below 1/10 of URL:

$\pm (0.05 + 0.005 \times \frac{URL}{Span})$  % of span

**Stability:**

$\pm 0.1\%$  of the URL for 10 years for 6th digit code 3, 5, 6, 8 and 9.

**Temperature effect:**

Effects per 28°C changewithin the range of -40°C and +85°C

| Range code (6th digit in the model code)   | Zero shift (% of span)                    | Total effect (% of span)                  |
|--|---|---|
| "1"/1 kPa {10 mbar}<br>"2"/6 kPa {60 mbar}   | $\pm (0.125 + 0.1 \frac{URL}{Span})$ %    | $\pm (0.15 + 0.1 \frac{URL}{Span})$ %     |
| "3"/32kPa {320mbar}<br>"5"/130kPa {1300mbar}<br>"6"/500kPa {5000mbar}<br>"8"/3000 kPa {30000mbar}<br>"9"/20000kPa {200000mbar} | $\pm (0.075 + 0.0125 \frac{URL}{Span})$ % | $\pm (0.095 + 0.0125 \frac{URL}{Span})$ % |

Double the effects for material code (7th digit in model code) "H", "M", "T"

**Static pressure effect:**

| Static pressure code (5th digit in the model code)           | Zero shift (% of URL)  |
|--|--|
| "1" / 1 kPa {10 mbar} sensor<br>"2" / 6 kPa {60 mbar} sensor | $\pm 0.2\%$ / 3.2 MPa {32 bar}<br>$\pm 0.2\%$ / 10 MPa {100 bar} |
| "3"  | $\pm 0.035\%$ / 6.9 MPa {69 bar}                                 |
| "4"  | $\pm 0.2\%$ / 6.9 MPa {69 bar} FKCC49                            |

Double the effects for material code (7th digit in model code) "H", "M", "T"

**Overrange effect:**

| Static pressure code (5th digit in the model code)         | Zero shift (% of URL)  |
|--|--|
| "1" / 1kPa {10m bar} sensor<br>"2" / 6kPa {60m bar} sensor | $\pm 0.2\%$ / 3.2MPa {32bar}<br>$\pm 0.2\%$ / 10MPa {100bar} |
| "3"  | $\pm 0.1\%$ / 16 MPa {160 bar} FKCC35,36,38                  |
| "3"  | $\pm 0.15\%$ / 16 MPa {160 bar} FKCC33                       |
| "4"  | $\pm 0.25\%$ / 42 MPa {420 bar} FKCC43,45,46,48              |
| "4"  | $\pm 0.2\%$ / 10 MPa {100 bar} FKCC49                        |

Double the effects for material code (7th digit in model code) "H", "M", "T"

**Performance specifications for square root output****Accuracy rating:**

| Output     | Span           |                                  |
|------------|----------------|----------------------------------|
|            | over 0.1 × URL | below 0.1 × URL                  |
| 50 to 100% | ±0.065%        | ±(0.015+0.005 × URL/Span)%       |
| 20 to 50%  | ±0.163%        | ±2.5 × (0.015+0.005 × URL/Span)% |
| 10 to 20%  | ±0.325%        | ±5 × (0.015+0.005 × URL/Span)%   |

**Max span 1 kPa and 6kPa models:**

| Output     | Accuracy |
|------------|----------|
| 50 to 100% | ±0.1%    |
| 20 to 50%  | ±0.25%   |
| 10 to 20%  | ±0.5%    |

**Temperature effect:**

Effects per 28°C change within the range of -40°C and +85°C

| Range code      | Shift at 20% output point  |
|-----------------|--|
| "1" and "2"     | $\pm \left( 0.375 + 0.25 \frac{\text{URL}}{\text{Span}} \right) \% / 28^\circ\text{C}$   |
| "3" through "9" | $\pm \left( 0.24 + 0.03125 \frac{\text{URL}}{\text{Span}} \right) \% / 28^\circ\text{C}$ |

**Common performance specifications for both output modes****Supply voltage effect:**

Less than 0.005% of calibrated span per 1 V

**Update rate:**

40 msec

**Electromagnetic compatibility:**

FCX-A IV transmitters are in accordance with the following harmonized standards:

**EN 61326-1**

**EN 61326-2-3**

**EN 61326-3-1**

**RFI effect:**

< 0,2% of the URL for the frequencies from 20 up to 1000 MHz with an electrical strength of 10 V/m and housing covers in place. (Classification: 2-abc: 0.2% of span according SAMA PMC 33.1).

**Response time:** (63.3% of output signal without damping)

| Range code<br>(6th digit in code symbols) | Time constant<br>(at 23°C) | Dead time      |
|---|----------------------------|----------------|
| "1"                                       | 0.33 s                     | about 0.06 sec |
| "2"                                       | 0.3 s                      |                |
| "3"                                       | 0.12 s                     |                |
| "5" through "8"                           | 0.08 s                     |                |

Response time = time constant + dead time

**Mounting position effect:**

Zero shift:

Less than 0.12kPa (1.2mbar) for a 10° tilt in any position.

This error can be corrected by adjusting zero.

(Double the effect for fluorinated fill sensors.)

No effect on span.

**Vibration effect:**

< ±0.25% of URL

Frequency 10 to 150 Hz, acceleration 29.4 m/sec<sup>2</sup>.

**Dielectric strength:**

500 V AC, 50/60Hz 1 min., between circuit and earth (except with the optional arrester)

**Insulation resistance:**

More than 100 MΩ at 500 V DC.

**Internal resistance for external field indicator:**

12 Ω max. (connected to test terminal CK+ and CK-)

**Pressure equipment directive (PED) 2014/68/EU:**

According to Article 4.3

**PHYSICAL SPECIFICATIONS****Electrical conduit connections:**

1/2"-14 NPT, Pg13.5 or M20 × 1.5

**Process connections:**

Standard: 1/4"-18 NPT meets DIN 19213.

Option: 1/2"-14 NPT with oval flanges

**Process-wetted parts material:**

|   | Material code<br>(7th digit) | Process<br>cover | Diaphragm                 | Wetted<br>sensor body | Vent/<br>drain |
|---|------------------------------|------------------|---------------------------|-----------------------|----------------|
| V | Ranges 1 & 2                 | SS 316L          | SS 316L                   | SS 316LN              | SS 316L        |
|   | Ranges 3 to 8                | SS 316L          | SS 316L                   | SS 316L               | SS 316L        |
|   | W                            | SS 316L          | Hastelloy-C               | SS 316L               | SS 316L        |
|   | H                            | SS 316L          | Hastelloy-C               | Hastelloy-C           | SS 316L        |
|   | J                            | SS 316L          | SS 316L +<br>Gold coating | SS 316L               | SS 316L        |
|   | M                            | SS 316L          | Monel                     | Monel lining          | SS 316L        |
|   | T                            | SS 316L          | Tantalum                  | Tantalum lining       | SS 316L        |

Remark: Gasket : Viton o-ring or PTFE square section gasket.

Availability of above material design depends on ranges and static pressure according material codes V, H, M and T.

Refer to the "Model code symbols".

**Non-wetted parts material:**

Electronics housing:

Low copper die-cast aluminum alloy finished with polyester coating (standard), or SS 316 (option).

Bolts an nuts:

Carbon steel (up to 42 MPa MWP), SS 316L (up to 16 MPa MWP) or SS 660 (up to 42 MPa MWP)

Filling fluid:

Silicone oil (standard) or fluorinated oil (option)

Mounting bracket: SS 316L

**Environmental protection:**

IEC IP66 & IP67 and Type 4X

**Mounting:**

DN50(2") pipe or wall mounting using the mounting bracket.

Direct to process cover connections without the mounting bracket.

**Mass{weight}:**

Transmitter approx.: 3.5 kg without options.

Add: 0.2 kg for indicator

0.5 kg for mounting bracket

2.0 kg for stainless steel housing (option)

## OPTIONAL FEATURES

### Local indicator:

An optional 5 digit indicator with engineering units is available.

A local configurator can be carried out using the 3 magnetic switches and push-buttons.

A separately ordered magnet pen is required for adjustment using the magnetic switches.

See the accessories section.

### Arrester

A built-in arrester protects the electronics from lightning surges.

Lightning surge immunity:  $\pm 4$  kV ( $1.2 \times 50 \mu\text{s}$ )

### Oxygen service:

Special cleaning procedures are applied during the manufacturing process to maintain oil free all process wetted part. The filling fluid is fluorinated oil.

### Chlorine service:

Same procedures and filling fluid as for oxygen service.

### Degreasing:

Process-wetted parts are cleaned and the filling fluid is standard silicone oil. Not for use with oxygen or chlorine presence.

### NACE specification:

Metallic materials for all pressure boundary parts comply with NACE MR 0175/ISO 15156.

SS 660 bolts and nuts comply with NACE MR 0175/ISO 15156.

### Optional tag plate:

An extra stainless steel tag plate with customer tag data is wired to the transmitter.

## ACCESSORIES

### Oval flange:

Converts the process connection to 1/2"-14 NPT.

### Manifolds:

Stainless Steel 316L, 16 MPa or 42 MPa pressure rating

### Magnet pen:

To be used with the 3 push-buttons optional indicators.  
Order number = ZZP\*TQ507742C1

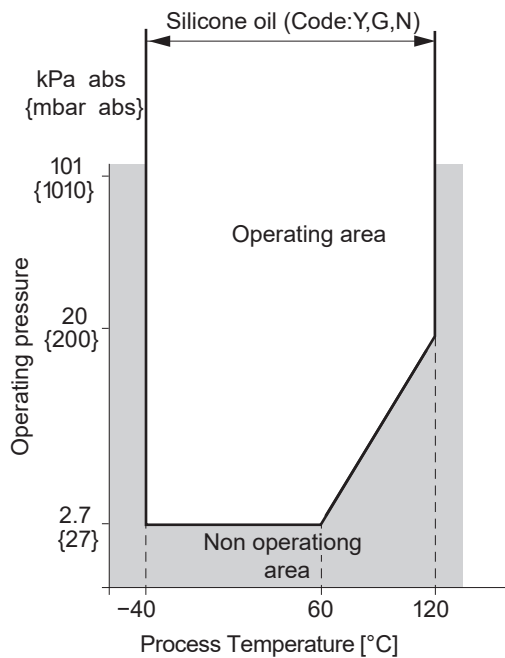
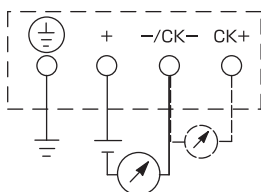


Fig. 1 Relation between process temperature and operating pressure

## CONNECTION DIAGRAM



# MODEL CODE SYMBOLS

| 1 |   | 2 |  | 3 |  | 4 |  | 5 |  | 6 |  | 7 |  | 8 |  | 9 |  | 10 |  | 11 |  | 12 |  | 13 |  | 14 |  | 15 |  | 16 |  | DESCRIPTION   |  |   |  |  |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|----|--|----|--|----|--|----|--|----|--|----|--|----|--|---|--|---|--|--|--|---------------------|--|---|--|-------------------------|--|--|--|--|--|--|--|--|--|--|--|
| F | K | C |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | Type  |  | Differential pressure transmitter - Smart, 4-20 mA with HART communication protocol |  |  |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | Connections   |  |   |  |  |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | Process Connection                                    |  | Oval flange threading   |  | Conduit connection   |  | Amplifier case type |  | Direction of process connection                       |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | 1/4-18 NPT  |  | 7/16-20 UNF   |  | 1/2-14 NPT   |  | "L" Shape           |  | Standard  |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*1)  |  | M10   |  | M20x1.5  |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  | Pg13.5   |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | 1/4-18 NPT  |  | 7/16-20 UNF   |  | 1/2-14 NPT   |  | "T" Shape           |  | Standard  |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*1)  |  | M10   |  | M20x1.5  |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  | Pg13.5   |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | 1/4-18 NPT  |  | 7/16-20 UNF   |  | 1/2-14 NPT   |  | "T" Shape           |  | Bottom (Isoplanar)                                    |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*1)  |  | M10   |  | M20x1.5  |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  | Pg13.5   |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*2)(*3)  |  | Range and materials   |  | Process cover  |  | Diaphragm           |  | Wetted cell body                                      |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | Static pressure limits                                |  | Measuring ranges  |  | LP side HP side  |  |                     |  |   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | -1 to 32 bar<br>-0.1 to 3.2 MPA<br>-14.5 to 464 psig  |  | 10/100 mm WC<br>0.1 to 1 kPa<br>0...1 to 10 mbar<br>0...10 to 100 mm WC             |  | SS 316L  |  | SS 316L             |  | SS 316L<br>Hastelloy C<br>Gold coating<br>Hastelloy C |  | SS 318LN<br>Hastelloy C |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | -1 to 100 bar<br>-0.1 to 10 MPA<br>-14.5 to 1450 psig |  | 10/600 mmWC<br>0.1 to 6 kPa<br>0...1 to 60 mbar<br>0...10 to 600 mm WC              |  | SS 316L  |  | SS 316L             |  | SS 316L<br>Hastelloy C<br>Gold coating<br>Hastelloy C |  | SS 318LN<br>Hastelloy C |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*4)  |  | 30/3200 mm WC<br>0.32 to 32 kPa<br>0...3.2 to 320 mbar<br>0...32 to 3200 mm WC      |  | SS 316L  |  | SS 316L             |  | SS 316L   |  | SS 316L                 |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  | Hastelloy C   |  | Hastelloy C             |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  | Monel   |  | Monel lining            |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  | Gold coating  |  | SS 316L                 |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  | Gold/ceramics   |  | Gold/ceramics           |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  | Tantalum  |  | Tantalum lining         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*4)  |  | -1 to 160 bar<br>-0.1 to 16 MPA<br>-14.5 to 2320 psig<br>(*3)                       |  | 0.13/13 m WC<br>1.3 to 130 kPa<br>0...13 to 1300 mbar<br>0...0.13 to 13 m WC |  | SS 316L             |  | SS 316L   |  | SS 316L                 |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  | Hastelloy C   |  | Hastelloy C             |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  | Monel   |  | Monel lining            |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  | Gold coating  |  | SS 316L                 |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  | Gold/ceramics   |  | Gold/ceramics           |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  |                     |  | Tantalum  |  | Tantalum lining         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*4)  |  | 0.5/50 m WC<br>5 to 500 kPa<br>0...50 to 5000 mbar<br>0...0.5 to 50 m WC            |  | SS 316L  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Hastelloy C         |  | Hastelloy C   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Gold coating        |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Monel               |  | Monel lining  |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Tantalum            |  | Tantalum lining                                       |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*4)  |  | 3/300 m WC<br>30 to 3000 kPa<br>0...0.3 to 30 bar<br>0...3 to 300 m WC              |  | SS 316L  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Hastelloy C         |  | Hastelloy C   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Gold coating        |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Hastelloy C         |  | Hastelloy C   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Monel               |  | Monel lining  |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*4)  |  | -1 to 420 bar<br>-0.1 to 42 MPA<br>-14.5 to 6091 psig<br>(*3)                       |  | SS 316L  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Hastelloy C         |  | Hastelloy C   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Monel               |  | Monel lining  |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Gold coating        |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Hastelloy C         |  | Hastelloy C   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*4)  |  | 0.5/50 m WC<br>5 to 500 kPa<br>0...50 to 5000 mbar<br>0...0.5 to 50 m WC            |  | SS 316L  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Hastelloy C         |  | Hastelloy C   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Monel               |  | Monel lining  |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Gold coating        |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Hastelloy C         |  | Hastelloy C   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*4)  |  | -1 to 300 bar<br>-0.1 to 30 MPA<br>-14.5 to 4351 psig                               |  | SS 316L  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Hastelloy C         |  | Hastelloy C   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Gold coating        |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Hastelloy C         |  | Hastelloy C   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Gold coating        |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  | (*4)  |  | 50/2000 m WC<br>500 to 20000 kPa  |  | SS 316L  |  | SS 316L             |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |  |  | Gold coating        |  | SS 316L   |  |                         |  |  |  |  |  |  |  |  |  |  |  |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | DESCRIPTION   |   |             |             |             |             |  |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|---|---|-------------|-------------|-------------|-------------|--|
| F | K | C |   |   |   |   |   |   |    |    |    |    |    |    |    |   |   |             |             |             |             |  |
|   | 8 | 1 | H |   |   |   |   |   |    |    |    |    |    |    |    | 0 to 15 bar<br>0 to 1.5 MPa<br>0 to 217 psig  | 10/100 mm WC<br>0.1 to 1 kPa<br>0...1 to 10 mbar<br>0...10 to 100 mm WC | PVDF insert | Hastelloy C | Hastelloy C |             |  |
|   | 8 | 2 | H |   |   |   |   |   |    |    |    |    |    |    |    |   | 10/600 mm WC<br>0.1 to 6 kPa<br>0...1 to 60 mbar<br>0...10 to 600 mm WC |             |             |             |             |  |
|   | 8 | 3 | H |   |   |   |   |   |    |    |    |    |    |    |    |   | 32/3200 mm WC<br>0.32 to 32 kPa<br>0...3.2 to 320 mbar                  |             |             |             |             |  |
|   | 8 | 3 | M |   |   |   |   |   |    |    |    |    |    |    |    |   | 0.13/13 m WC<br>1.3 to 130 kPa<br>0...13 to 1300 mbar                   |             |             |             |             |  |
|   | 8 | 3 | T |   |   |   |   |   |    |    |    |    |    |    |    |   | 0.5/50 m WC<br>5 to 500 kPa<br>0...50 to 5000 mbar                      |             |             |             |             |  |
|   | 8 | 5 | H |   |   |   |   |   |    |    |    |    |    |    |    |   | 10/100 mm WC<br>0.1 to 1 kPa<br>0...1 to 10 mbar<br>0...10 to 100 mm WC |             |             |             |             |  |
|   | 8 | 5 | M |   |   |   |   |   |    |    |    |    |    |    |    |   | 10/600 mm WC<br>0.1 to 6 kPa<br>0...1 to 60 mbar<br>0...10 to 600 mm WC |             |             |             |             |  |
|   | 8 | 5 | T |   |   |   |   |   |    |    |    |    |    |    |    |   | 32/3200 mm WC<br>0.32 to 32 kPa<br>0...3.2 to 320 mbar                  |             |             |             |             |  |
|   | 8 | 6 | H |   |   |   |   |   |    |    |    |    |    |    |    | 0.13/13 m WC<br>1.3 to 130 kPa<br>0...13 to 1300 mbar                                 |   |             |             |             |             |  |
|   | 8 | 6 | M |   |   |   |   |   |    |    |    |    |    |    |    | 0.5/50 m WC<br>5 to 500 kPa<br>0...50 to 5000 mbar                                    |   |             |             |             |             |  |
|   | 8 | 6 | T |   |   |   |   |   |    |    |    |    |    |    |    | 10/100 mm WC<br>0.1 to 1 kPa<br>0...1 to 10 mbar<br>0...10 to 100 mm WC               |   |             |             |             |             |  |
|   | 9 | 1 | H |   |   |   |   |   |    |    |    |    |    |    |    | 0 to 15 bar<br>0 to 1.5 MPa<br>0 to 217 psig  | 10/100 mm WC<br>0.1 to 1 kPa<br>0...1 to 10 mbar<br>0...10 to 100 mm WC | PVDF insert | SS 316L     | Hastelloy C | Hastelloy C |  |
|   | 9 | 2 | H |   |   |   |   |   |    |    |    |    |    |    |    |   | 10/600 mm WC<br>0.1 to 6 kPa<br>0...1 to 60 mbar<br>0...10 to 600 mm WC |             |             |             |             |  |
|   | 9 | 3 | H |   |   |   |   |   |    |    |    |    |    |    |    |   | 32/3200 mm WC<br>0.32 to 32 kPa<br>0...3.2 to 320 mbar                  |             |             |             |             |  |
|   | 9 | 3 | M |   |   |   |   |   |    |    |    |    |    |    |    |   | 0.13/13 m WC<br>1.3 to 130 kPa<br>0...13 to 1300 mbar                   |             |             |             |             |  |
|   | 9 | 3 | T |   |   |   |   |   |    |    |    |    |    |    |    |   | 0.5/50 m WC<br>5 to 500 kPa<br>0...50 to 5000 mbar                      |             |             |             |             |  |
|   | 9 | 5 | H |   |   |   |   |   |    |    |    |    |    |    |    |   | 10/100 mm WC<br>0.1 to 1 kPa<br>0...1 to 10 mbar<br>0...10 to 100 mm WC |             |             |             |             |  |
|   | 9 | 5 | M |   |   |   |   |   |    |    |    |    |    |    |    |   | 10/600 mm WC<br>0.1 to 6 kPa<br>0...1 to 60 mbar<br>0...10 to 600 mm WC |             |             |             |             |  |
|   | 9 | 5 | T |   |   |   |   |   |    |    |    |    |    |    |    |   | 32/3200 mm WC<br>0.32 to 32 kPa<br>0...3.2 to 320 mbar                  |             |             |             |             |  |
|   | 9 | 6 | H |   |   |   |   |   |    |    |    |    |    |    |    | 0.13/13 m WC<br>1.3 to 130 kPa<br>0...13 to 1300 mbar                                 |   |             |             |             |             |  |
|   | 9 | 6 | M |   |   |   |   |   |    |    |    |    |    |    |    | 0.5/50 m WC<br>5 to 500 kPa<br>0...50 to 5000 mbar                                    |   |             |             |             |             |  |
|   | 9 | 6 | T |   |   |   |   |   |    |    |    |    |    |    |    | 10/100 mm WC<br>0.1 to 1 kPa<br>0...1 to 10 mbar<br>0...10 to 100 mm WC               |   |             |             |             |             |  |
|   | 6 |   |   |   |   |   |   |   |    |    |    |    |    |    |    | <b>Improvement Symbol</b>   |   |             |             |             |             |  |
|   | A |   |   |   |   |   |   |   |    |    |    |    |    |    |    | <b>Indicator</b>  | <b>Arrester</b>   |             |             |             |             |  |
|   | E |   |   |   |   |   |   |   |    |    |    |    |    |    |    | None  | None  |             |             |             |             |  |
|   | L |   |   |   |   |   |   |   |    |    |    |    |    |    |    | None  | Yes   |             |             |             |             |  |
|   | P |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, 0-100% linear scale  |   |             |             |             |             |  |
|   | M |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, custom scale   | None  |             |             |             |             |  |
|   | Q |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, 0-100% √ scale   |   |             |             |             |             |  |
|   | S |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, 0-100% linear scale  |   |             |             |             |             |  |
|   | N |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, custom scale   | Yes   |             |             |             |             |  |
|   | 1 |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, 0-100% √ scale   |   |             |             |             |             |  |
|   | 2 |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, 0-100% linear scale (Local configurator)                                     |   |             |             |             |             |  |
|   | 3 |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, custom scale (Local configurator)  | None  |             |             |             |             |  |
|   | 4 |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, 0-100% √ scale (Local configurator)  |   |             |             |             |             |  |
|   | 5 |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, 0-100% linear scale (Local configurator)                                     |   |             |             |             |             |  |
|   | 6 |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, custom scale (Local configurator)  | Yes   |             |             |             |             |  |
|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Digital, 0-100% √ scale (Local configurator)  |   |             |             |             |             |  |
|   | A |   |   |   |   |   |   |   |    |    |    |    |    |    |    | <b>Hazardous location approvals</b>   |   |             |             |             |             |  |
|   | X |   |   |   |   |   |   |   |    |    |    |    |    |    |    | None  |   |             |             |             |             |  |
|   | K |   |   |   |   |   |   |   |    |    |    |    |    |    |    | (*5) ATEX - Flameproof  |   |             |             |             |             |  |
|   | M |   |   |   |   |   |   |   |    |    |    |    |    |    |    | ATEX - Intrinsic Safety   |   |             |             |             |             |  |
|   | E |   |   |   |   |   |   |   |    |    |    |    |    |    |    | (*5) ATEX - Combination Flameproof and Intrinsic Safety                               | pending   |             |             |             |             |  |
|   | J |   |   |   |   |   |   |   |    |    |    |    |    |    |    | (*5) cCSAus - Explosion proof   | pending   |             |             |             |             |  |
|   | L |   |   |   |   |   |   |   |    |    |    |    |    |    |    | cCSAus - Intrinsic Safety and Non Incendive   | pending   |             |             |             |             |  |
|   | R |   |   |   |   |   |   |   |    |    |    |    |    |    |    | (*5) cCSAus - Combination Explosion proof, Intrinsic Safety and Non Incendive         | pending   |             |             |             |             |  |
|   | T |   |   |   |   |   |   |   |    |    |    |    |    |    |    | (*5) IECEx - Flameproof   |   |             |             |             |             |  |
|   | N |   |   |   |   |   |   |   |    |    |    |    |    |    |    | IECEx - Intrinsic Safety  |   |             |             |             |             |  |
|   | W |   |   |   |   |   |   |   |    |    |    |    |    |    |    | (*5) IECEx - Combination Flameproof and Intrinsic Safety                              | pending   |             |             |             |             |  |
|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    | (*5) IECEx - ATEX - cCSAus - Explosion/Flameproof, Intrinsic Safety and Non Incendive | pending   |             |             |             |             |  |
|   | A |   |   |   |   |   |   |   |    |    |    |    |    |    |    | (*1,*6) <b>Side vent/drain</b>  | <b>Mounting bracket</b>   |             |             |             |             |  |
|   | K |   |   |   |   |   |   |   |    |    |    |    |    |    |    | None (standard)   | None  |             |             |             |             |  |
|   | D |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Yes   | SS 316L   |             |             |             |             |  |
|   | L |   |   |   |   |   |   |   |    |    |    |    |    |    |    |   | None  |             |             |             |             |  |
|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |   | SS 316L   |             |             |             |             |  |
|   | Y |   |   |   |   |   |   |   |    |    |    |    |    |    |    | <b>Stainless steel parts</b>  |   |             |             |             |             |  |
|   | B |   |   |   |   |   |   |   |    |    |    |    |    |    |    | <b>TAG plate</b>  | <b>Housing</b>  |             |             |             |             |  |
|   | C |   |   |   |   |   |   |   |    |    |    |    |    |    |    | None  | None  |             |             |             |             |  |
|   | E |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Yes   |   |             |             |             |             |  |
|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    | None  |   |             |             |             |             |  |
|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Yes   | Yes   |             |             |             |             |  |

| 1  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | DESCRIPTION |  |
|--|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|-------------|--|
| F  | K | C |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| <b>Special applications &amp; Filling fluids</b>                   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| <b>Treatment</b> <b>Filling fluid</b>                              |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| Y  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| W  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| G  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| A  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| D  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| N  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| <b>Process cover gasket</b> <b>Vent Drain plug</b> <b>Bolt/Nut</b> |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| C  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| H  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| G  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| J  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| K  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| D  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| E  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| F  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| 4  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| 6  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| 5  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| 7  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| 8  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| <b>Special options</b>   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| L  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| T  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| Instruction manual unattached                                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |
| (*8) * special, no code available                                  |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |             |  |

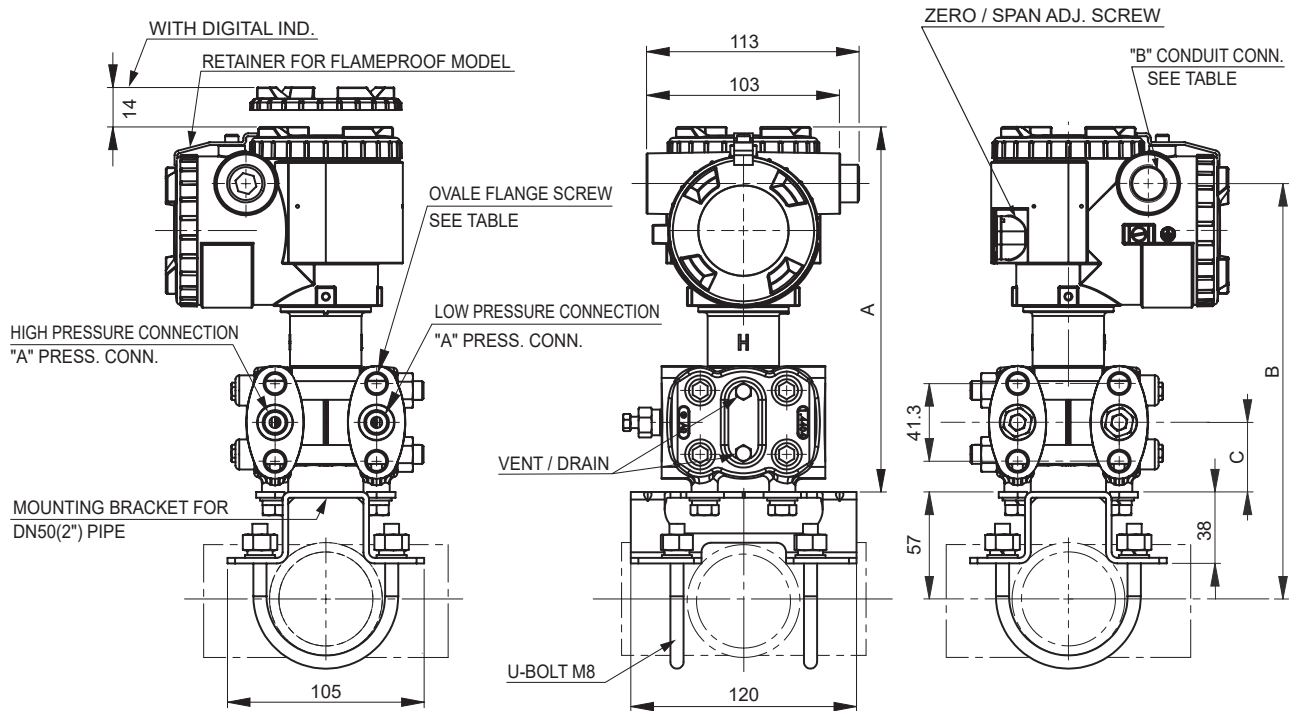
## Notes\*:

- 1- Isoplanar process connection (bottom side) with side vent/drain only. 160 bar MWP with M10 process cover bolting.
- 2- Select M12 bolting if static pressure > 160 bar.
- 3- A Turn Down Ratio ≤ 10 is recommended for optimal performances.
- 4- Gold/ceramic coating available upon request.
- 5- Only with M20x1.5 & 1/2"-14 NPT electrical conduits.
- 6- Process cover with PVDF insert: 1/2"-14 NPT side process connection only, square section PTFE gasket, no vent/drain.
- 7- SS 660 bolts/nuts are in conformity with NACE MR0175/ISO 15156 and must be used for NACE service.
- 8- When no code can be found in the current model code, place "\*" in the corresponding digit code as well as in the 16th digit.

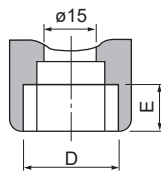


# OUTLINE DIAGRAM (Unit : mm)

<L SHAPE> <4TH DIGIT CODE: R, T, U, V, W, X AND 7TH DIGIT CODE V, H, M, T>

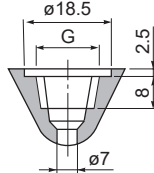


DETAIL "B" (CONDUIT CONN.)

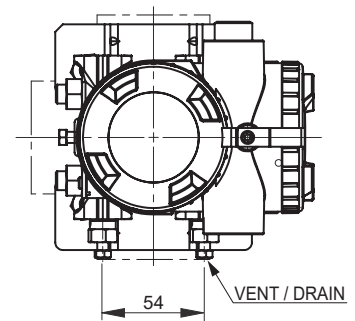


SEE TABLE

DETAIL "A" (PRESS. CONN.)



SEE TABLE



| 4TH MODEL CODE | CONDUIT CONNECTION |      | PRESS. CONN. | OVAL FLANGE SCREW |
|----------------|--------------------|------|--------------|-------------------|
|                | D                  | E    | G            |                   |
| R              | M20×1.5            | 16   | 1/4-18NPT    | 7/16-20UNF        |
| T              | 1/2-14NPT          | 16   | 1/4-18NPT    | 7/16-20UNF        |
| U              | 1/2-14NPT          | 16   | 1/4-18NPT    | M10 or M12        |
| V              | Pg13.5             | 10.5 | 1/4-18NPT    | M10 or M12        |
| W              | M20×1.5            | 16   | 1/4-18NPT    | M10 or M12        |
| X              | Pg13.5             | 10.5 | 1/4-18NPT    | 7/16-20 UNF       |

TABLE

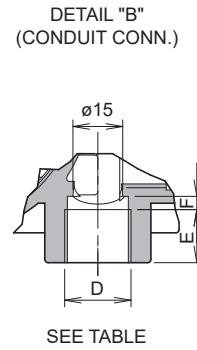
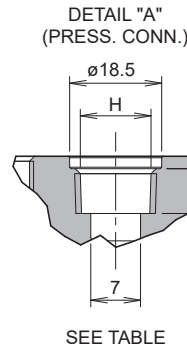
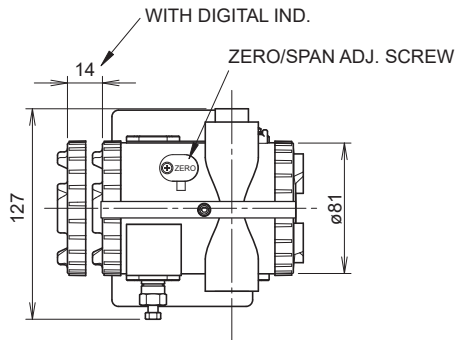
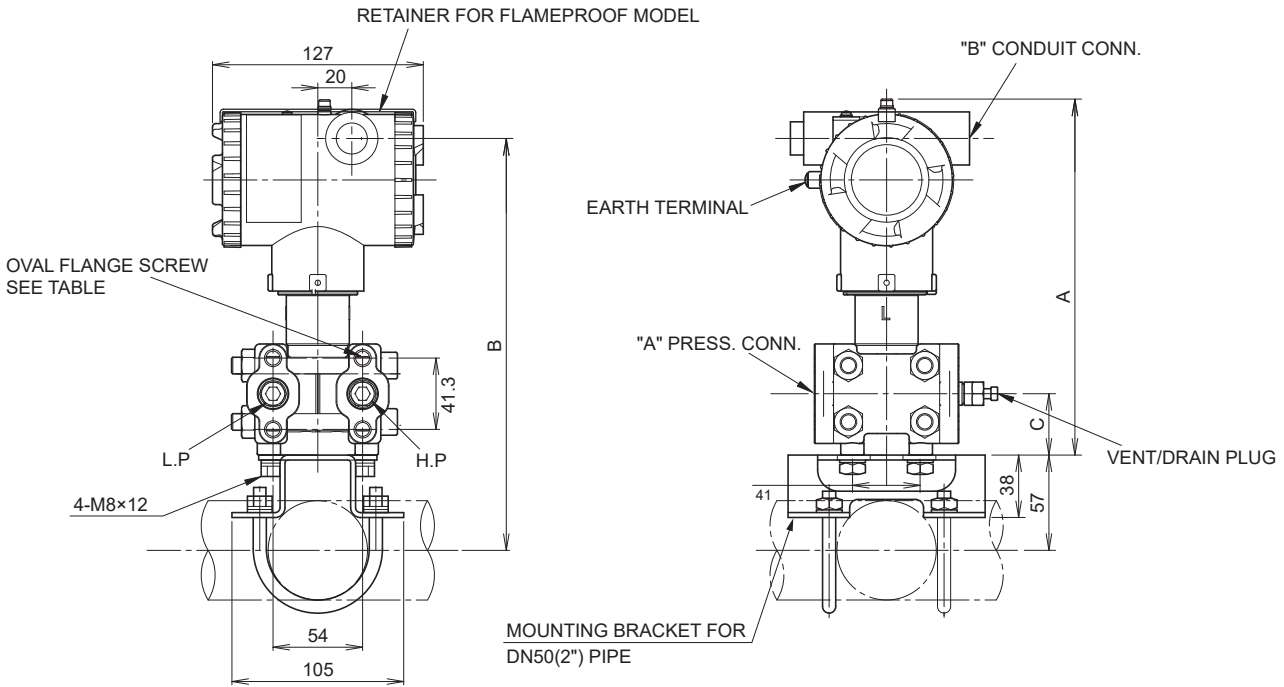
| MODEL  | DIMENSIONS |       |        |
|--------|------------|-------|--------|
|        | A          | B     | C      |
| FKC□11 | 198.5      | 225.5 | 38.5   |
| FKC□22 |            |       |        |
| FKC□33 | 194        | 221   | 37     |
| FKC□35 | (198)      | (225) | (38.5) |
| FKC□36 | NOTE       | NOTE  | NOTE   |
| FKC□38 |            |       |        |
| FKC□43 |            |       |        |
| FKC□45 | 198.5      | 225.5 | 38.5   |
| FKC□46 |            |       |        |
| FKC□48 |            |       |        |

NOTE: 7TH MODEL CODE "M", "T"

- WEIGHT : - 3.5 kg (WITHOUT OPTION)  
 ADD : - 0.2 kg FOR INDICATOR  
 - 0.5 kg FOR MOUNTING BRACKET  
 - 2.0 kg FOR STAINLESS STEEL HOUSING OPTION

# OUTLINE DIAGRAM (Unit : mm)

<T SHAPE> <4TH DIGIT CODE: 3, 4, 6, 7, 8, 9 AND 7TH DIGIT CODE V, H, M, T>



| 4TH MODEL CODE | CONDUIT CONNECTION |      |     | PRESS. CONN. | OVAL FLANGE SCREW |
|----------------|--------------------|------|-----|--------------|-------------------|
|                | D                  | E    | F   | H            |                   |
| 3              | M20x1.5            | 16   | 4   | Rc1/4        | 7/16-20UNF        |
| 4              | 1/2-14NPT          | 16   | 4   | 1/4-18NPT    | M10 or M12        |
| 6              | 1/2-14NPT          | 16   | 4   | 1/4-18NPT    | 7/16-20UNF        |
| 7              | Pg13.5             | 10.5 | 4.5 | 1/4-18NPT    | M10 or M12        |
| 8              | M20x1.5            | 16   | 4   | 1/4-18NPT    | M10 or M12        |
| 9              | Pg13.5             | 10.5 | 4.5 | 1/4-18NPT    | 7/16-20UNF        |

TABLE

| MODEL  | DIMENSIONS |       |        |
|--------|------------|-------|--------|
|        | A          | B     | C      |
| FKC□11 | 219        | 252   | 38.5   |
| FKC□22 |            |       |        |
| FKC□33 | 215        | 248   | 37     |
| FKC□35 | (219)      | (252) | (38.5) |
| FKC□36 | NOTE       | NOTE  | NOTE   |
| FKC□38 | 219        | 252   | 38.5   |
| FKC□43 |            |       |        |
| FKC□45 |            |       |        |
| FKC□46 |            |       |        |
| FKC□48 |            |       |        |

NOTE: 7TH MODEL CODE "M", "T"

- WEIGHT : - 3.5 kg (WITHOUT OPTION)
- ADD : - 0.2 kg FOR INDICATOR
- 0.5 kg FOR MOUNTING BRACKET
- 2.0 kg FOR STAINLESS STEEL HOUSING OPTION



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