

Model 695FI Field Indicator



Digital LCD or analog meter

- allows to select the proper indication

Programmable meter

- combines signal display with password protected configuration

Rugged, compact, lightweight, enclosure to IP67

- enables installation in industrial environments

Compatible with all 4-20 mA, 2-wire systems

Square root signal characterization

- allows measurements linearization

Comprehensive certification approvals

- give high applicability in plant hazardous areas

Model 695FI field indicator provides simple and low cost remote indication of a process variable on an easy to read meter, ensuring the most useful display for any specific application. Traditional analog indicator is available with standard 0-100% linear or 0-10 square root graduations or special scales to be specified.



The functionality as METER is achieved by the 10-segment bargraph which gives an analog 0-100% indication and by the 5-digit display which gives a digital indication programmable from the following options:

- 4 to 20 mA
- 0 to 100%
- engineering unit

Programmability is carried out using the four keys, allowing to define linear or square root indication for mA or engineering unit; for this latter, also indication range (zero and full scale values) can be chosen related to the unit which is defined in HART table.

In addition to parallel transmitter wiring the terminal block 695FI provides series wiring through junction box connection facility. Alternatively to the previous options, model 695FI, offers a programmable signal meter which integrates LCD plus bargraph indications (ProMeter).

These meters feature:

- one 5-digit numeric indication (top)
- one 10-segment bargraph indication (central)
- one 7-digit alphanumeric indication (bottom)
- a membrane keypad with 4 tactile feedback keys



- Password
- Configuration
- Trimming
- Damping
- Square root
- etc

Functional specification

Input range

4 to 20mA nominal

Operating range

3.6 to 22mA

Maximum overload (for 2 minutes)

Analog indicator : 150% of input range

ProMeter: 110mA (23mA indication). A current less than 3.4mA will blank the display

Voltage drop

analog indicator : 0.2Vdc

ProMeter : 2Vdc

Meter/indication range

Prometer LCD :

5-digit (± 99999 counts) programmable with 7.6mm. high (3in), 7-segment numeric characters plus sign and digital point for digital indication of output value in percentage, current or engineer unit;

10-segment bargraph display (10% per segment) for analog indication of output in percentage;

7-digit with 6mm. high (2.3in), 14-segment alphanumeric characters, for engineer units and configuration display

Analog : 36mm (1.4in) scale on 90°; available scales are 0-100% linear, 0-10 square root or special on request.

Update time

Analog indicators : 0.5sec

ProMeter: 0.7sec

Operative limits

Temperature limits

Ambient (is the operating limit)

analog indicator: -40 to $+85^{\circ}\text{C}$ (-40 to $+185^{\circ}\text{F}$)

ProMeter : -20 to $+70^{\circ}\text{C}$ (-4 to $+158^{\circ}\text{F}$)

Lower limit can be down to -40°C (-40°F) keeping loop integrity and without meter damage (the display will be blank)

Storage

-40 to $+85^{\circ}\text{C}$ (-40 to $+185^{\circ}\text{F}$)

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Environmental limits

Relative humidity

Reference: 60% \pm 25%

Operative, transportation and storage limits : 0 and 100% condensing permissible

EMI/RFI (SAMA PMC 33.1)

Operative limits : Class 3 abc, field strengths up to 30V/m (Frequency range: 20 to 1000MHz)

Wet and dust-laden atmospheres

The field indicator is dust and sand tight and protected against immersion effect as defined by IEC 529 to IP 67 or by NEMA 4X.

Hazardous atmospheres

- INTRINSIC SAFETY/ EUROPE

ATEX/CESI approval

EC-Type Examination Certificate no. CESI 01ATEX015

Category 1 equipment for Zone 0 (Gas) and Zone 20 (Dust)

For Category 1 Stainless Steel enclosure only

ATEX II 1 G Ex ia IIC T6 T5 Ga ($-40^{\circ}\text{C} \leq \text{Ta} \leq +40^{\circ}\text{C}$)

ATEX II 1 G Ex ia IIC T4 Ga ($-40^{\circ}\text{C} \leq \text{Ta} \leq +85^{\circ}\text{C}$)

ATEX II 1 D Ex ia IIIC T50°C Da ($-40^{\circ}\text{C} \leq \text{Ta} \leq +40^{\circ}\text{C}$)

ATEX II 1 D Ex ia IIIC T95°C Da ($-40^{\circ}\text{C} \leq \text{Ta} \leq +85^{\circ}\text{C}$)

Category 2 equipment for Zone 1 (Gas) and Zone 21 (Dust)

For Category 2 Aluminium or alternatively Stainless Steel enclosure

ATEX II 2 G Ex ia IIC T6 T5 Gb ($-40^{\circ}\text{C} \leq \text{Ta} \leq +40^{\circ}\text{C}$)

ATEX II 2 G Ex ia IIC T4 Gb ($-40^{\circ}\text{C} \leq \text{Ta} \leq +85^{\circ}\text{C}$)

ATEX II 2 D Ex ia IIIC T50°C Db ($-40^{\circ}\text{C} \leq \text{Ta} \leq +40^{\circ}\text{C}$)

ATEX II 2 D Ex ia IIIC T95°C Db ($-40^{\circ}\text{C} \leq \text{Ta} \leq +85^{\circ}\text{C}$)

- FLAMEPROOF/EUROPE

ATEX/CESI approval

EC-Type Examination Certificate no. CESI 01ATEX011

ATEX II 2 G Ex d IIC T6 ($-40^{\circ}\text{C} \leq \text{Ta} \leq +70^{\circ}\text{C}$)

ATEX II 2 G Ex d IIC T5 ($-40^{\circ}\text{C} \leq \text{Ta} \leq +85^{\circ}\text{C}$)

ATEX II 2 D Ex d tD A21 IP67 T80°C ($-40^{\circ}\text{C} \leq \text{Ta} \leq +70^{\circ}\text{C}$)

ATEX II 2 D Ex d tD A21 IP67 T95°C ($-40^{\circ}\text{C} \leq \text{Ta} \leq +85^{\circ}\text{C}$)

- TYPE "N"/EUROPE

ATEX CESI type examination

Design compliance by Certificate no. CESI 02 ATEX074

II 3 GD T50°C, EEx nL IIC T6 ($-40^{\circ}\text{C} \leq \text{Ta} \leq +40^{\circ}\text{C}$)

T95°C, EEx nL IIC T4 ($-40^{\circ}\text{C} \leq \text{Ta} \leq +85^{\circ}\text{C}$)

- CANADIAN STANDARDS ASSOCIATION and FACTORY MUTUAL:

Explosionproof: Class I, Div. 1, Group B, C, D

Dust ignitionproof: Class II, Div. 1, Group E, F, G

Suitable for: Class II, Div. 2, Group F,G; Class III, Div 1,2

Nonincendive: Class I, Div. 2, Group A,B,C,D

Intrinsically safe: Class I, II, III, Div. 1, Group A,B,C,D,E,F,G

- GOST (Russia), GOST (Kazakistan), based on ATEX

Performance specification

Stated at ambient temperature of $23^{\circ}\text{C} \pm 3\text{K}$ ($75^{\circ}\text{F} \pm 5$), relative humidity of $50\% \pm 20\%$ and atmospheric pressure

Indication accuracy

analog indicator : $\pm 2\%$ fsd

ProMeter

– digital : $\pm 0.10\%$ of max span(16 mA) ± 1 digit

– analog (bargraph) : 10%

Resolution for ProMeter

$\pm 0.025\%$ (12-bit conversion)

Ambient temperature

Total effect per 1K (1.8°F) change between the limits of -20 and $+80^{\circ}\text{C}$ (-4 and $+176^{\circ}\text{F}$).

ProMeter: $\pm 0.15\%$ of max span (16 mA)

EMI/RFI

Total effect : $\pm 0.10\%$ from 20 to 1000MHz and for field strengths up to 10V/m when instrument is properly installed.

Physical specification

Materials

Housing and covers

Aluminium alloy with light gray (RAL 9002) baked epoxy finish;

AISI 316 L ss.

Covers O-ring

Buna N

Identification tag

AISI 316 ss permanently mounted.

40 characters max on three lines (legend to be specified).

Mounting bracket (*)

Plated carbon steel with chrome passivation;

AISI 316 L ss

(*) U-bolt material: AISI 400 ss.

Electrical connections

Two 1/2 NPT or M20x1.5 or PG 13.5 or 1/2 GK threaded conduit entries, direct on housing.

Terminal block

Three screw terminals suitable for wirings up to 2.5mm^2 (14AWG) and three connection points for test and communication purposes.

Grounding

Internal and external 6mm^2 (10AWG) ground termination points are provided.

Mounting

Vertical position on a 60mm or 2in pipe by bracket.

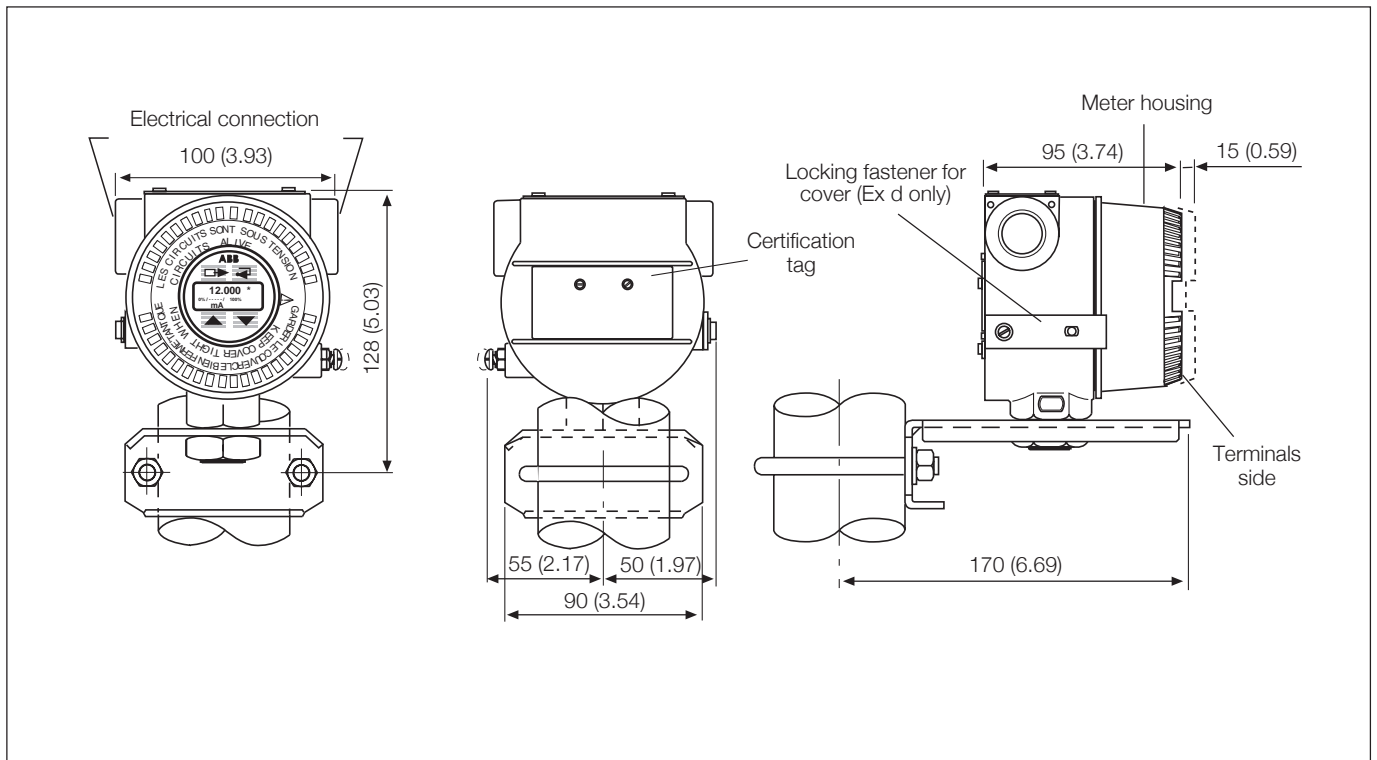
Net weight

0.9kg. approx (2lb) (without mounting bracket).

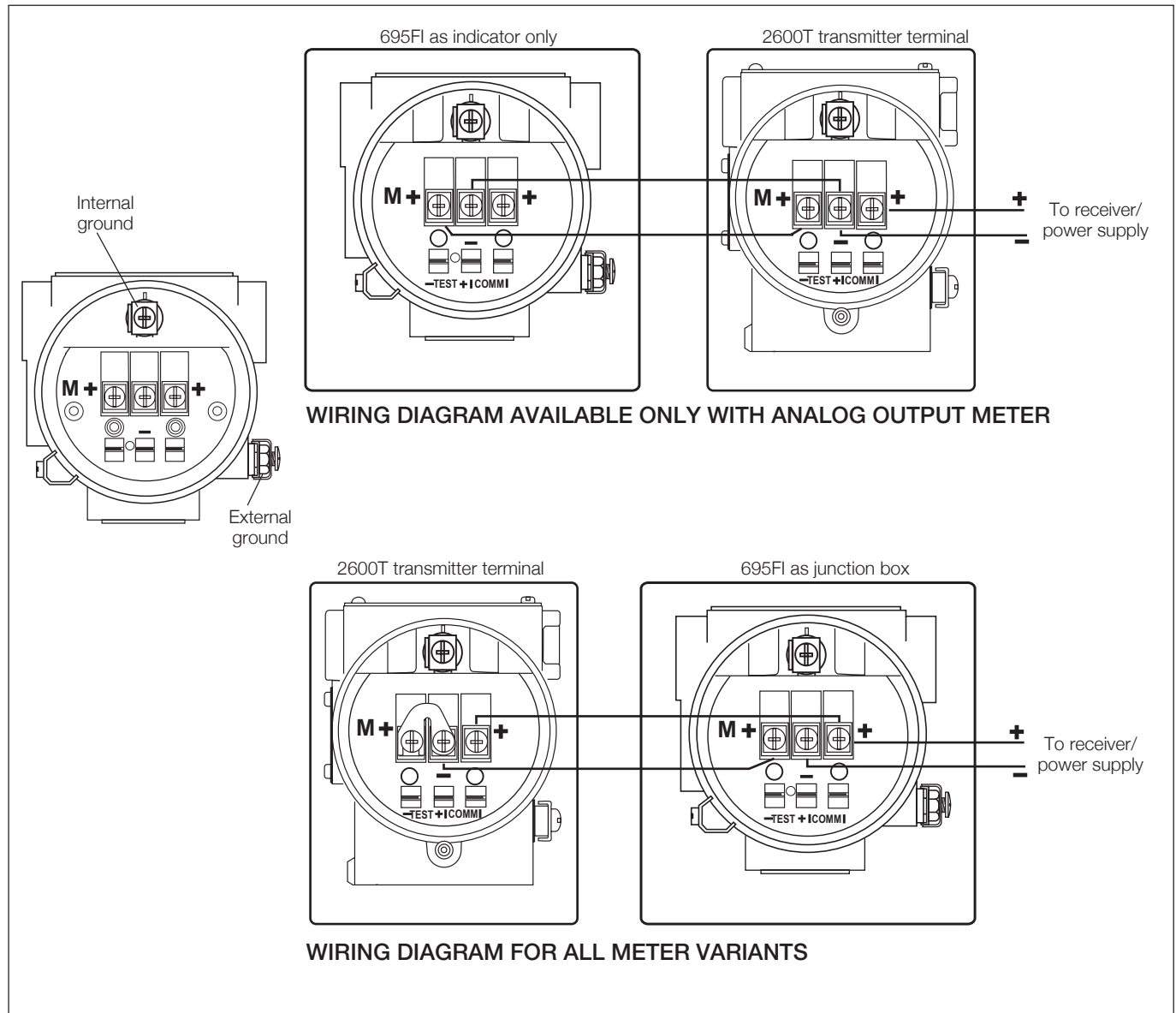
Packing

Expanded polythene box.

MOUNTING DIMENSIONS (not for construction unless certified) - dimensions in mm (in)



WIRING DIAGRAM



ORDERING INFORMATION model 695FI Field Indicator

Select one character or set of characters from each category and specify complete catalog number.

BASE MODEL – 1 st to 5 th characters			6	9	5	F	I	XXXXX	X	X	X	X	X
Field Indicator													
6 th to 10 th characters Use code								00000					
Mounting bracket – 11th character													
Carbon steel (not suitable with AISI housing)												2	
AISI 316 ss												3	
Electrical certification – 12th character													
General purpose													1
ATEX Group II Category 2 GD - Flameproof Ex d II C T6, T5													F
ATEX Group II Category 1 GD - Intrinsic Safety Ex ia II C T6, T5, T4													L
ATEX Group II Category 2 GD - Intrinsic Safety Ex ia II C T6, T5, T4													M
ATEX Group II Category 3 GD - Type of protection "N" Ex nL design compliance													N
Factory Mutual (FM) and Canadian Standard Association (CSA) approvals													8
GOST (Russia) EEx ia													R
GOST (Russia) EEx d													U
GOST (Kazakistan) EEx ia													K
GOST (Kazakistan) EEx d													A
Housing material and electrical connection – 13th character													
Aluminium alloy		1/2in NPT					(Note 3)						1
Aluminium alloy		M20 x 1.5 (CM20)					(Note 3)						2
Aluminium alloy		Pg 13.5					(Notes 1, 3)						3
Aluminium alloy		1/2in GK					(Notes 1, 3)						4
AISI 316L ss		1/2in NPT					(Note 2)						A
AISI 316L ss		M20 x 1.5 (CM20)					(Note 2)						C
AISI 316L ss		Pg 13.5					(Notes 1, 2)						D
AISI 316L ss		1/2in GK					(Notes 1, 2)						F
Output meter - 14th character													
ProMeter, Standard calibration													3
ProMeter, Special calibration													5
Analog output indicator linear 0–100% scale													7
Analog output indicator square root 0–10 scale													8
Analog output indicator, special graduation (to be specified for linear scale)													9
Analog output indicator, special graduation (to be specified for square root scale)													Z
Labels language - 15th characters													
English													E
German													G

Note 1: Not available with Electrical certification code 8

Note 2: Not available with Carbon steel bracket code 2

Note 3: Not available with Electrical certification code L

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