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.

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

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.
600T EN Series Transmitters
Model 695FI

Functional specification

Input range
4 to 20mA nominal

Operating range
3.6 to 22mA

Maximum overload (for 2 minutes)
Analogue indicator: 150% of input range
ProMeter: 110mA (23mA indication). A current less than 3.4mA will blank the display

Voltage drop
Analogue indicator: 0.2Vdc
ProMeter: 2Vdc

Meter/indication range
ProMeter LCD:
5-digit (±99999 counts) programmable with 7.6mm. high (3in),
10-segment bargraph display (10% per segment) for analogue indication of output value in percentage, current or engineer unit;
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
Analogue indicators: 0.5sec
ProMeter: 0.7sec

Operative limits

Temperature limits

Ambient (is the operating limit)
analogue indicator: –40 to +85°C (–40 to +185°F)
ProMeter: –20 to +70°C (–4 to +158°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°C (–40 to +185°F)

Environmental limits

Relative humidity
Reference: 60% ±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 T5G (–40°C ≤ Ta ≤ +40°C)
ATEX II 1 G Ex ia IIC T6 Gb (–40°C ≤ Ta ≤ +85°C)
ATEX II 1 D Ex ia IIC T5°C Da (–40°C ≤ Ta ≤ +40°C)
ATEX II 1 D Ex ia IIC T9°C Da (–40°C ≤ Ta ≤ +85°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°C ≤ Ta ≤ +40°C)
ATEX II 2 G Ex ia IIC T6 Gb (–40°C ≤ Ta ≤ +85°C)
ATEX II 2 D Ex ia IIC T5°C Db (–40°C ≤ Ta ≤ +40°C)
ATEX II 2 D Ex ia IIC T9°C Db (–40°C ≤ Ta ≤ +85°C)

– FLAMEPROOF/EUROPE
ATEX/CESI approval
EC-Type Examination Certificate no. CESI 01ATEX011
ATEX II 2 G Ex d IIC T6 (–40°C ≤ Ta ≤ +70°C)
ATEX II 2 G Ex d IIC T5 (–40°C ≤ Ta ≤ +85°C)
ATEX II 2 D Ex d ID A21 IP67 T8°C (–40°C ≤ Ta ≤ +70°C)
ATEX II 2 D Ex d ID A21 IP67 T9°C (–40°C ≤ Ta ≤ +85°C)

– TYPE “N”/EUROPE
ATEX CESI type examination
Design compliance by Certificate no. CESI 02 ATEX074
II 3 GD T5°C, Ex nL IIC T6 (–40°C ≤ Ta ≤ +40°C)
T9°C, Ex nL IIC T4 (–40°C ≤ Ta ≤ +85°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 (Kazakhstan), based on ATEX

Manual
600T EN Series Transmitters
Model 695FI

**Performance specification**

Stated at ambient temperature of 23°C ± 3K (75°F ± 5), relative humidity of 50% ± 20% and atmospheric pressure

**Indication accuracy**

- analog indicator : ± 2% fsd
- ProMeter
  - digital : ± 0.10% of max span (16 mA) ± 1 digit
  - analog (bargraph) : 10%

**Resolution for ProMeter**

± 0.025% (12-bit conversion)

**Ambient temperature**

Total effect per 1K (1.8°F) change between the limits of –20 and +80°C (–4 and +176 °F).

ProMeter: ± 0.15% of max span (16 mA)

**EMI/RFI**

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

**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 2.5mm² (14AWG) and three connection points for test and communication purposes.

**Grounding**

Internal and external 6mm² (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.

**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.
MOUNTING DIMENSIONS (not for construction unless certified) - dimensions in mm (in)
WIRING DIAGRAM

WIRING DIAGRAM AVAILABLE ONLY WITH ANALOG OUTPUT METER

WIRING DIAGRAM FOR ALL METER VARIANTS
**ORDERING INFORMATION model 695FI Field Indicator**

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

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

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
Contact us

ABB Ltd.
Process Automation
Howard Road
St. Neots
Cambridgeshire PE19 8EU
UK
Tel: +44 (0)1480 475321
Fax: +44 (0)1480 217948

ABB Inc.
Process Automation
125 E. County Line Road
Warminster
PA 18974
USA
Tel: +1 215 674 6000
Fax: +1 215 674 7183

ABB Automation Products GmbH
Process Automation
Schillerstr. 72
32425 Minden
Germany
Tel: +49 551 905 534
Fax: +49 551 905 555

ABB S.p.A. Process
Automation Via Statale 113
22016 Tremezzina (CO) Italy
Tel: +39 0344 58111
Fax: +39 0344 56278

Note
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents - in whole or in parts – is forbidden without prior written consent of ABB.

Copyright© 2015 ABB
All rights reserved