

1151 Boston-Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA
T: 781 762 4300 F: 781 762 9375 www.fmglobal.com

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

TP290-ab-cd/e, TP301-ab-cd/e. Position Transmitter.

IS/I,II,III /1/ABCDEFGH/T4 Ta=60°C; Entity-102A0604; DIP/II,III/1/EFG/T4 Ta=60°C;
NI/I/2/ABCD/T4 Ta=60°C; Type 4X; Entity Parameters: Vmax = 30Vdc, Imax = 110 mA, Ci = 5nF,
Li = 12µH

- a = Digital indicator 1 (with Digital Indicator).
- b = Mounting bracket 0 or 1.
- c = Electrical connections 0 (½-14 NPT), A (M20×½) or B (Pg 13.5 DIN).
- d = Type of actuator (not included) 1, 3, 5, 7 or Z.
- e = Optional items H1 (316 SST Housing).

TP302-ab-cd/e, TP303-ab-cd/e. Position Transmitter.

IS/I,II,III /1/ABCDEFGH/T4 Ta=60°C; Entity-102A0605; DIP/II,III/1/EFG/T4 Ta=60°C;
NI/I/2/ABCD/T4 Ta=60°C; Type 4X; Entity Parameters: Vmax = 24Vdc, Imax = 250 mA, Ci = 5nF,
Li = 12µH

- a = Digital indicator 1 (with Digital Indicator).
- b = Mounting bracket 0 or 1.
- c = Electrical connections 0 (½-14 NPT), A (M20×½) or B (Pg 13.5 DIN).
- d = Type of actuator (not included) 1, 3, 5, 7 or Z.
- e = Optional items H1 (316 SST Housing).

Equipment Rating: Intrinsically safe for Class I, II and III, Division 1, Groups A, B, C, D, E, F and G in accordance with entity requirements and Control Documents 102A0604 (TP290, TP301) and 102A0605 (TP302, TP303); dust-ignitionproof for Classes II and III, Division 1, Groups E, F and G; nonincendive for Class I, Division 2, Group A, B, C and D hazardous (classified) outdoor (Type 4X) locations.

Approved for: Smar Equipamentos Industriais LTDA, Av. Dr. Antonio Furlan Jr. 1028, Sertaozinho - SP
CEP 14.160, Brazil

This certifies that the equipment described has been found to comply with the following Factory Mutual Research Approval Standards:

Approval Standard Class 3600 - November 1998
Approval Standard Class 3610 - October 1988
Approval Standard Class 3611 - October 1999
Approval Standard Class 3810 - March 1989, Including Supplement #1, 1995

Original Approval Job Identification: 3010145

Approval Granted: May 21, 2002

Subsequent Revision Reports/Date Approval Amended:

None

Factory Mutual Research Corporation


Andrew Lozinski
Technical Team Manager


Date

**APPROVED PRODUCT/SPECIFICATION TESTED - REVISION REPORT
OR ADDRESS/CONTACT CHANGE REPORT**



SENDER: Forward with updated drawings or other appropriate change information to the attention of the **Approvals Division**. Original will be returned showing course of action taken.

Additional forms may be requested by writing to the attention of the **Factory Mutual Stock Room**.

FORWARD TO:
FACTORY MUTUAL RESEARCH
1151 Boston-Providence Turnpike
P.O. Box 9102
Norwood MA 02062

Please type below: Attention of, Company Name, Address, City, State & Zip Code.

Attn: Ricardo Leite
Smar Research Corp.
4250 Veterans Memorial HWY
Holbrook - NY
ZIP 11741

Phone: 631-737-3111

Fax: 631-737-3892

PRODUCT(S) TP290/TP301 - POSITION TRANSMITTER

DOES THIS REVISION RESULT IN MODEL/TYPE NO. CHANGE TO THE CURRENT APPROVAL GUIDE LISTING? YES NO
IF YES, EXPLAIN (USE SEPARATE SHEET IF REQUIRED):

HAS THE MANUFACTURING LOCATION, LISTING ADDRESS, TELEPHONE NUMBER OR CONTACT PERSON CHANGED? IF YES, EXPLAIN BELOW: YES NO

Attention: **Mr. Andrew Lozinski**

Date
April 15, 2002

FORWARD BY
Ricardo Leite

TITLE
Electronic Engineer

SIGNATURE
Ricardo Leite

MODEL(S) AFFECTED
TP290/TP301

Position Transmitter

INDICATE FACTORY MUTUAL RESEARCH JOB IDENTIFICATION(S) AFFECTED
J.I. 3007267
J.I. 3010145

REVISION DETAILS	DWG. NO. AFFECTED	REV.	NEW DWG. NO.	REV.
- Lay-out PCB model GLL928 was changed from multilayer (04 layers) to double side.	102A-0267	00	102A-0267	01 <i>OK</i>

1.6mm thick board Meets creep + clearance

REASON FOR CHANGE(S)/COMMENTS:

* This new option of filter is more inexpensive.
The material control system was changed to comply with production process. *??*

BELOW FOR FACTORY MUTUAL RESEARCH USE

COMMENTS: <i>- change does not affect safety - creepage and clearance distances measure OK.</i> <i>- CDL updated</i>	REVISION REPORT J. I.	REVISION NOTICE NO. <i>E01061-283-2</i>	CLASS NO. <i>3610</i>
	FORWARD APPROVAL/SPECIFICATION TESTED AGREEMENT <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
	REVISION ACCEPTED <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
	EXAMINED BY <i>[Signature]</i>	DATE <i>May 9, 2002</i>	
REVIEWED BY <i>[Signature]</i>	DATE <i>6/6/02</i>		

**APPROVED PRODUCT/SPECIFICATION TESTED - REVISION REPORT
OR ADDRESS/CONTACT CHANGE REPORT**



SENDER: Forward with updated drawings or other appropriate change information to the attention of the **Approvals Division**. Original will be returned showing course of action taken.

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FACTORY MUTUAL RESEARCH
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Attn: Ricardo Leite
Smar Research Corp.
4250 Veterans Memorial HWY
Holbrook - NY
ZIP 11741

Phone: 631-737-3111

Fax: 631-737-3892

PRODUCT(S)

TP302/TP303 - POSITION TRANSMITTER

DOES THIS REVISION RESULT IN MODEL/TYPE NO. CHANGE TO THE CURRENT APPROVAL GUIDE LISTING? IF YES, EXPLAIN (USE SEPARATE SHEET IF REQUIRED):

YES NO

HAS THE MANUFACTURING LOCATION, LISTING ADDRESS, TELEPHONE NUMBER OR CONTACT PERSON CHANGED? IF YES, EXPLAIN BELOW:

YES NO

Attention: **Mr. Andrew Lozinski**

Date
April 16, 2002

FORWARD BY
Ricardo Leite

TITLE
Electronic Engineer

SIGNATURE
Ricardo Leite

MODEL(S) AFFECTED
TP302/303

Position Transmitter

INDICATE FACTORY MUTUAL RESEARCH JOB IDENTIFICATION(S) AFFECTED
J.I. 3007267
J.I. 3010145

REVISION DETAILS

	DWG. NO. AFFECTED	REV.	NEW DWG. NO.	REV.
-Main Board model GLL1000 The resistors R15,22,23 and 25 were changed from 1/8W to 1/4W and R40 was changed the value from 249K to 221K - OK	102B-0205	06	102B-0205	07
The resistor R14 was changed the value from 127K to 10K and was added C32 - 1nF - OK			102B-0205	08
The Transil diode was changed from SMBJ6,5A to SM6T7V5A - OK	102B-0205	08	102B-0205	09
- Lay-out PCB model GLL1000 were added the electronic component C28 - OK	102A-0320	02	102A-0320	03
- Lay-out PCB model GLL928 was changed from multilayer (04 layers) to double side - OK	102A-0267	00	102A-0267	01

REASON FOR CHANGE(S)/COMMENTS:

The Transil diode was changed to reduce the leakage current in operational condition.

BELOW FOR FACTORY MUTUAL RESEARCH USE

COMMENTS: - changes do not affect safety - R40 is not a safety component. - R14 is not a safety comp. - CDL updated. - Addition of capacitors does not exceed safe level and is not seen at terminals due to clamping by diodes.	REVISION REPORT J. I.	REVISION NOTICE NO. ED1061-283-1	CLASS NO. 3610/3615
	FORWARD APPROVAL/SPECIFICATION TESTED AGREEMENT		
	REVISION ACCEPTED <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
	EXAMINED BY <i>[Signature]</i>		
REVIEWED BY <i>[Signature]</i>		DATE May 9, 2002	
		DATE 16/7/02	