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QA: OBL

EMC specification of product FlexTop 2231

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1. Introduction

1.1 Aim:

To set up minimum requirements to meet the protection requirements in the EMC directive EEC 89/336 according to article 10.2.

2. The product

2.1 The product:

Temperature amplifier for PT100 sensor, and with Profibus PA interface.
FlexTop 2231 is mounted in a DIN-housing form B, and fitting into the Baumer CombiTemp system.

2.2 Type:

Product type no. FlexTop 2231-xxxx.

2.3 Environmental use:

Industry.

2.4 Description of the product:

Construction:

The product contains a circuit board, built into a round plastic cabinet for mounting in a DIN-housing form B. The module contains analogue circuits and a low power CPU circuits.

The module has the following ports:

- Profibus PA (two terminals).
- Sensor connections (four terminals).

Adjustments:

The product has been adjusted from factory.

Measuring range and sensor type to be configured by means of a standard PC, Profibus PA interface and SW.

Accuracy:

According to the data sheet the inaccuracy of the module is $\pm 0.1^{\circ}\text{C}$ depending of sensor-type. At continuous noise exposure, error criterion A is valid.

3. Relevant standards**3.1 Emission: EN 61326 and NAMUR NE21.****3.2 Immunity: EN 61326 and NAMUR NE21.**

The following tests are estimated to be relevant:

- CISPR 16 and 16-1: Emission.
- EN 61000-4-3: HF field, 80 - 1000 MHz and 1,4 - 2GHz, 80% AM, 10 V/m. Criterion A.
- EN 61000-4-2: ESD discharge 8/6 kV. Criterion A.
- EN 61000-4-4: Burst transients 2 kV CM. Criterion A.
- EN 61000-4-5: Surge transients 1 kV CM. Criterion B.

All ports are considered signal ports.

EN 61000-4-6 Conducted HF is not estimated to be relevant, since

- 1) The test will prevent communication on the Profibus
- 2) Profibus PA standards requires the use of shielded cable in order to prevent this type of interference.

4. Test plan

- 4.1 The unit is programmed for 2-wire Pt 100, and mounted in a DIN-housing form B with 30 cm sensor tube and a Pt 100. The output is controlled via Profibus PA during the test, and according to Profibus PA standards, a shielded PA-cable has been used for connecting the bus.
- 4.2 Regarding emission. No test has been made. FlexTop 2231 is considered to be comparable to previous tested FlexTop HRT II, and the very low power consumption also indicates, that the device does not radiate any noise.

5. Error criterions

5.1 Criterion A:

Max. accepted deviation from nominal is $\pm 0,1\%$ of sensor range (approx. ± 1 °C for PT100) .

5.2 Criterion B:

No requirements during the test run.

After the test run, the module shall operate normally.

5.3 Criterion C:

Not relevant.

DECLARATION OF CONFORMITY

We,

Baumer A/S
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declare under our sole responsibility that the product

Product Name: FlexTop 2231

Product Description: Temperature transmitter to Profibus PA.

Product Type: FlexTop 2231 xxxx

to which this declaration relates is in conformity with
the following European Directives:

89 / 336 EMC Directive
92 / 31 Amendment
93 / 68 Amendment

And related European Standards.

EN 61 326 Issue 1. 1997 incl. Amendment 1 1998-05 and Amendment 2 May 2001
NAMUR NE 21 Issue 1.8 Feb. 1998

Date: 1/2 2007 Sign.: Kurt Møller Jensen
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