

Herstellererklärung Manufacturer Declaration

Company Endress+Hauser Flowtec AG, Kägenstrasse 7, CH-4153 Reinach

erklärt als Hersteller, dass das folgende Produkt
declares as manufacturer, that the following product

Product **Proline Promag 300/500**
5*3B**-BB/BD/BS *MC/RC*
5*3B**-UB/UD/US*MC/RC*
5*5B**-BB/BD/BN/BS/B7/B8 **MC/RC*
5*5B**-UB/UD/UN/US/U7/U8**MC/RC*

Proline Promass 300/500, Proline Cubemass 300/500
8*3B**-BA/BB/BC/BD/BS*MC/RC*
8*3B**-UA/UB/UC/UD/US*MC/RC*
8*5B**-BA/BB/BC/BD/BM/BN/BS *MC/RC*
8*5B**-UA/UB/UC/UD/UM/UN/US *MC/RC*

Für Messgeräte Proline Promag 300/500, Proline Promass 300/500 und Proline Cubemass 300/500 mit Bestelloption

- Zulassung "BA", "BB", "BC", "BC", "BM", "BN", "BS", "B7", "B8", "UA", "UB", "UC", "UC", "UM", "UN", "US", "U7" oder "U8" in Verbindung mit
- Eingang/Ausgang 1 "MC" (Modbus TCP Ex i) oder "RC" (Profinet Ex i)

kann zur Erläuterung zur verwendeten Norm IEC TS 60079-47 die angehängte Zeichnung auf Blatt 2 in dieser Herstellererklärung als Ergänzung zu ethernet-apl™ (Intrinsically safe Ethernet / 2-WISE – System Concept) herangezogen werden.

For measuring systems Proline Promag 300/500, Proline Promass 300/500 and Proline Cubemass 300/500 with order codes

- approval code "BA", "BB", "BC", "BC", "BM", "BN", "BS", "B7", "B8", "UA", "UB", "UC", "UC", "UM", "UN", "US", "U7" or "U8" in combination with
- Input/Output 1 "MC" (Modbus TCP Ex i) or "RC" (Profinet Ex i)

the attached drawing on page 2 of this declaration may be used as a supplement to the applicable standard IEC TS 60079-47 for ethernet-apl™ (Intrinsically safe Ethernet / 2-WISE – System Concept)


Diese Herstellererklärung gilt ausschließlich für den im Anschreiben der zuständigen Endress+Hauser Vertriebsgesellschaft genannten Kunden und die aufgeführten Produkte im Auslieferungszustand.

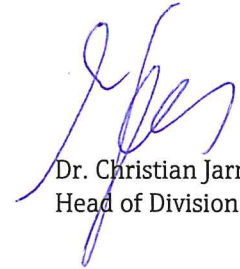
This manufacturer declaration is exclusively valid for the customer listed in the cover letter of the respective Endress+Hauser sales center and for the listed products in delivery status.

Diese Herstellererklärung gilt für das Inverkehrbringen bis zu 2 Jahren nach dem Ausstellungsdatum.

The validity of this manufacturer declaration expires 2 years after date of issue.

Reinach, 17.05.2022
Endress+Hauser Flowtec AG


Dr. Mirko Lehmann
Chief Executive Officer


Dr. Christian Jarms
Head of Division Quality Management

Non-hazardous classified area or Hazardous Locations

a) 2-WISE auxiliary device ports connected with short wires (stubs) to the cable

b) 2-WISE auxiliary device ports connected via a series connection in the cable

| | |
|---|--|
| <p>1 2-WISE device</p> <p>2 2-WISE power source port</p> <p>4 2-WISE auxiliary device port</p> <p>5 2-WISE auxiliary device port that is physically split into two terminations, but electrically connected through and therefore counted as one 2-WISE auxiliary port per 2-WISE device.</p> <p>6 2-WISE power load port</p> | <p>Approved 2-WISE device (1) with intrinsically safe 2-WISE power source port (2)</p> <p>$U_0 (V_{oc}) = 14,0 \dots 17,5$ V $C_i \leq 5$ nF</p> <p>$I_0 (I_{sc}) \leq 380$ mA $L_i \leq 10$ μH</p> <p>$P_0 (P_{max}) \leq 5,32$ W</p> |
|---|--|

| | |
|---|--|
| <p>Approved 2-WISE device (1) with intrinsically safe 2-WISE auxiliary device port (4 or 5)</p> <p>$U_i (V_{max}) = 17,5$ V $C_i \leq 5$ nF</p> <p>$I_i (I_{max}) = 380$ mA $L_i \leq 200$ nH</p> <p>$P_i (P_{max}) = 5,32$ W</p> <p>Leakage current: ≤ 50 μA</p> | <p>Approved 2-WISE device (1) with intrinsically safe 2-WISE power load port (6)</p> <p>$U_l (V_{max}) = 17,5$ V $C_l \leq 5$ nF</p> <p>$I_l (I_{max}) = 380$ mA $L_l \leq 10$ μH</p> <p>$P_l (P_{max}) = 5,32$ W</p> <p>Leakage current: ≤ 1 mA</p> |
|---|--|

The 2-WISE Concept allows interconnection of intrinsically safe apparatus and associated apparatus not specially assessed for such a combination. For the acceptance of the interconnection of the different intrinsically safe circuits of these apparatus, the comparison of the voltage $U (V_{max})$ with $U_0 (V_{oc})$, the current $I (I_{max})$ with $I_0 (I_{sc})$, and the power $P (P_{max})$ with $P_0 (P_{max})$ of the interconnected circuits must demonstrate that $U (V_{max})$, $I (I_{max})$ and $P (P_{max})$ are equal to or greater than $U_0 (V_{oc})$, $I_0 (I_{sc})$ and $P_0 (P_{max})$ of the connected circuits. In addition, the maximum internal capacitance (C_i) and maximum internal inductance (L_i) of each apparatus (other than those from auxiliary devices) connected to a 2-WISE system must not exceed 5 nF and 10 μ H respectively.

In a powered 2-WISE system only 2 ports (power source and power load) are allowed to be connected at the opposite ends of a cable, with a maximum of two auxiliary devices connected in between. The power source port supplies DC power to the system, and the power load port consumes DC power from the system. Auxiliary device ports may also consume DC power from the system.

The voltage $U_0 (V_{oc})$ of a power source port must be in the range of 14 V to 17,5 V. Any other device connected to the cable shall be passive, meaning that it is not allowed to provide energy to the system, with the exception of a leakage current of 1 mA for a power load port and a leakage current of 50 μ A for each auxiliary device port. The intrinsically safe circuit of a 2-WISE port shall be galvanically isolated from non-intrinsically safe circuits.

The parameters of cable used to interconnect 2-WISE ports must be as follows:

| | |
|--|-----------------|
| cable resistance R_c : | 15...150 Ohm/km |
| cable inductance L_c : | 0,4...1 mH/km |
| cable capacitance C_c : | 45...200 nF/km |
| $C_c = C_c \text{ line/line} + 0,5 C_c \text{ line/screen}$, if both lines are floating, or | |
| $C_c = C_c \text{ line/line} + C_c \text{ line/screen}$, if the screen is connected to one line | |
| Length of cable (not including cable stubs): | ≤ 200 m |
| Length of cable stubs: | ≤ 1 m |

If the above rules are respected, the inductance and the capacitance of the cable will not impair the intrinsic safety of the installation.



Installation Drawing – Device End Users

Intrinsically safe Ethernet
2-WISE – System Concept

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| | |
|--|----------------|
| | designed |
| | approved |
| | cert. approved |
| | seen |

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