



(1) **EU-Type Examination Certificate**

- (2) Equipment or protective system intended for use in potentially explosive atmospheres - **Directive 2014/34/EU**
- (3) Certificate number: **SEV 22 ATEX 0625 X**
- (4) Product: **Microwave units Micropilot FMR6xB**
- (5) Manufacturer: **Endress+Hauser SE+Co. KG**
- (6) Address: **Hauptstrasse 1, 79689 Maulburg, Germany**
- (7) The equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- (8) Eurofins, notified body No. 1258, in accordance with article 17 of Directive 2014/34/EU of the European parliament and of the council, dated 26 February 2014, certifies that this product has been found to comply with the essential health and safety requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.  
The examination and test results are recorded in confidential report no 21CH-00998OR02.X02
- (9) Compliance with the essential health and safety requirements has been assured by compliance with:
- EN IEC 60079-0:2018**  
**EN 60079-1:2014**  
**EN 60079-11:2012**  
**EN 60079-26:2015**  
**EN 60079-31:2014**
- Except in respect of those requirements listed at item 18 of the schedule.
- (10) If the sign «X» is placed after the certificate number, it indicates that the product is subjected to special conditions for safe use specified in the schedule to this certificate. The sign "U" is placed after the certificate number. It indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.
- (11) This EU type examination certificate relates only to design and construction of the specified product. Further requirements of this directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
- (12) The marking of the product shall include the following:



**Refer to marking at general product information**

**Eurofins Electric & Electronic Product Testing AG**  
**Notified Body ATEX**

Munira Gamma  
 Product Certification




(13)

## Appendix

(14)

**EU-Type Examination Certificate no. SEV 22 ATEX 0625 X**

(15) **General product information**

The microwave units Micropilot, type series FMR6xB are used for the contactless, continuous level measurement of liquid and solid media in explosion hazardous areas with gas or dust atmosphere. The Micropilot is a "down-looking" measuring system that works according to the principle of the modulated continuous wave radar (Frequency Modulated Continuous Wave, FMCW). The antenna shines an electromagnetic wave with continuously changing frequency. This wave is reflected by the product and received again by the antenna. The measured variable is the distance between the reference point R and the product surface. The product can be a liquid or a solid product. The electronic transforms this into an electrical signal which is evaluated and put out as analogue (e.g. 4..20mA) measurement values.

Classification of installation and use:

stationary

Ingress protection:

IP66 / IP67 / IP68

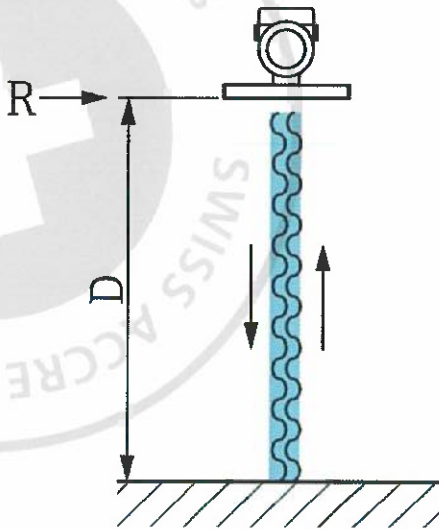
Rated ambient temperature range (°C):

Refer to Temperature classification at general product information for details

Rated ambient temperature range (°C) for Ex Components:

N/A

Measurement principle for Level:



**Rating:**
Type of protection ia:

For MA10 - 4..20 mA (HART):

 $U_i \leq 30 \text{ V DC}$ ,  $I_i \leq 300 \text{ mA}$ ,  $P_i \leq 1 \text{ W}$ ,  $C_i \leq 10 \text{ nF}$ ,  $L_i = 0$  or

 $U_i \leq 28 \text{ V DC}$ ,  $I_i \leq 250 \text{ mA}$ ,  $P_i \leq 650 \text{ mW}$ ,  $C_i \leq 10 \text{ nF}$ ,  $L_i = 0$ 

For MA11 - Profibus PA, Foundation Fieldbus:

 FISCO :  $U_i \leq 17.5 \text{ V DC}$ ,  $I_i \leq 380 \text{ mA}$ ,  $P_i \leq 5.32 \text{ W}$ ,  $C_i \leq 5 \text{ nF}$ ,  $L_i = 0$ 

 Entity :  $U_i \leq 24 \text{ V DC}$ ,  $I_i \leq 300 \text{ mA}$ ,  $P_i \leq 1.2 \text{ W}$ ,  $C_i \leq 5 \text{ nF}$ ,  $L_i = 0$ 

For MA12 - PROFINET APL:

 2-WISE:  $U_i \leq 17.5 \text{ V DC}$ ,  $I_i \leq 380 \text{ mA}$ ,  $P_i \leq 5.32 \text{ W}$ ,  $C_i \leq 5 \text{ nF}$ ,  $L_i = 0$ 

 Entity :  $U_i \leq 17.5 \text{ V DC}$ ,  $I_i \leq 300 \text{ mA}$ ,  $P_i \leq 1.2 \text{ W}$ ,  $C_i \leq 5 \text{ nF}$ ,  $L_i = 0$ 

For MA13 - 4-20 mA HART + 4-20 mA analog:

 Channel 1, 4..20 mA HART:  $U_i \leq 30 \text{ V DC}$ ,  $I_i \leq 300 \text{ mA}$ ,  $P_i \leq 1 \text{ W}$ ,  $C_i \leq 10 \text{ nF}$ ,  $L_i = 0$ 

 Channel 2, 4..20 mA:  $U_i \leq 30 \text{ V DC}$ ,  $I_i \leq 300 \text{ mA}$ ,  $P_i \leq 1 \text{ W}$ ,  $C_i \leq 10 \text{ nF}$ ,  $L_i = 0$ 

For MA14 - 4-20 mA HART, switch output (not for EPL Da):

 Channel 1, 4..20 mA HART:  $U_i \leq 30 \text{ V DC}$ ,  $I_i \leq 300 \text{ mA}$ ,  $P_i \leq 1 \text{ W}$ ,  $C_i \leq 10 \text{ nF}$ ,  $L_i = 0$ 

 Channel 2, switch output:  $U_i \leq 30 \text{ V DC}$ ,  $I_i \leq 300 \text{ mA}$ ,  $P_i \leq 1 \text{ W}$ ,  $C_i \leq 10 \text{ nF}$ ,  $L_i = 0$ 
Types of protection ta, tb or db:

For MA10: 4..20 mA (HART):

 $U \leq 35 \text{ V DC}$ ,  $P \leq 0.8 \text{ W}$ 

For MA11: Profibus PA, Foundation Fieldbus :

 $U \leq 32 \text{ V DC}$   $P \leq 0.6 \text{ W}$ 

For MA12 : Profisafe APL:

 $U \leq 15 \text{ V DC}$   $P \leq 0.6 \text{ W}$ 



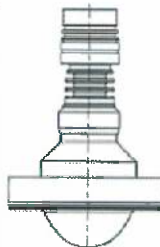
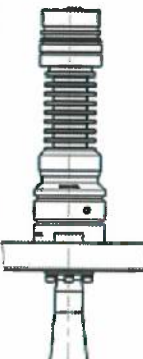
For MA13 - 4-20 mA HART + 4-20 mA analog:

 $U \leq 35 \text{ V DC}$   $P \leq 1.6 \text{ W}$ 

For MA14 - 4-20 mA HART, switch output (not for Da):

 $U \leq 35 \text{ V DC}$   $P \leq 2.6 \text{ W}$

Temperature classification:

Type 1 Compact dust/gas	Type 2 Stand- ard	Type 3 Standard	Type 4 XT/HT
$T_{p\_max}$			
80°C /130°C	150°C	200°C	280°C/450°C
			

Ex ia IIC T6...T1:		Type 1	Type 2	Type 3	Type 4
T-Class	$T_{p\_range}^{1)}$ [°C]	$T_{amb\_range}$ [°C]			
T6	-40...80	-50...58			
T5	-40...95	-50...63			
T4-T1	-40...130	-50...55			
T3	-40...150	-	-50...51		
	-40...195	-	-	-50...57	
T2-T1	-40...200	-	-	-50...46	
	-40...280	-	-	-50...52	
T1	-40...440	-	-	-	-50...39

1) Possible down to -196°C

Ex db IIC T6...T1:		Type 1	Type 2	Type 3	Type 4
T-Class	$T_{p\_range}^{1)}$ [°C]	$T_{amb\_range}$ [°C]			
T6	-40...80	-	-60...73		
T5	-40...95	-	-60...78		
T4-T1	-40...130	-	-60...75		
T3	-40...150	-	-60...52		
	-40...195	-	-	-60...68	
T2-T1	-40...200	-	-	-60...46	
	-40...280	-	-	-60...58	
T1	-40...440	-	-	-	-60...39














Ex ta/tb IIIC Txxx °C Da/Db:					
	T <sub>p_range</sub> [°C]	Type 1	Type 2	Type 3	Type 4
		T <sub>amb_range</sub> [°C]			
T <sub>L</sub> 80 °C	-20...80	-20...65	-40...65	-	-
T <sub>L</sub> 100 °C	-40...100	-	-40...60	-40...60	-
T <sub>L</sub> 130 °C	-40...130	-	-40...55	-	-
T <sub>L</sub> 150 °C	-40...150	-	-40...50	-40...55	-40...65
T <sub>L</sub> 200 °C	-40...200	-	-	-40...50	-40...60
T <sub>L</sub> 280 °C	-40...280	-	-	-	-40...55
T <sub>L</sub> 450 °C	-40...450	-	-	-	-40...45

Ex ta IIIC Txxx °C Da:				
	Type 1	Type 2	Type 3	Type 4
	Output:	T <sub>process</sub> and T <sub>amb_range</sub> [°C]		
T <sub>z00</sub> 100 °C	BA	-40 °C ≤ T <sub>p</sub> = T <sub>a</sub> ≤ 60 °C		
T <sub>z00</sub> 105 °C	BB	-40 °C ≤ T <sub>p</sub> = T <sub>a</sub> ≤ 45 °C		
T <sub>z00</sub> 110 °C (U <sub>max</sub> =35V)	BC	-40 °C ≤ T <sub>p</sub> = T <sub>a</sub> ≤ 40 °C		
T <sub>z00</sub> 100 °C (U <sub>max</sub> =24V)		-40 °C ≤ T <sub>p</sub> = T <sub>a</sub> ≤ 55 °C		
T <sub>z00</sub> 95 °C	DA/FA	-40 °C ≤ T <sub>p</sub> = T <sub>a</sub> ≤ 65 °C		

### Marking:

The following marking strings are possible for all types and in combination with each other.

-  II 2G Ex db IIC T6...T1 Gb
-  II 1/2G Ex db IIC T6...T1 Ga/Gb
-  II 1G Ex ia IIC T6...T1 Ga
-  II 2G Ex ia IIC T6...T1 Gb
-  II 1/2G Ex ia IIC T6...T1 Ga/Gb
-  II 1D Ex ia IIIC Txxx °C Da
-  II 2D Ex ia IIIC Txxx °C Db
-  II 1/2D Ex ia IIIC Txxx °C Da/Db
-  II 1D Ex ta IIIC Txxx °C Da
-  II 2D Ex tb IIIC Txxx °C Db
-  II 1/2D Ex ta/tb IIIC Txxx °C Da/Db

For types with MA11 module and FISCO the following text is added to the marking:  
FISCO field device

For types with MA12 module and 2-WISE the following text is added to the marking:  
2-WISE  
2-WISE power load

(16) **Report number** 21CH-00998OR02.X02

(17) **“Special conditions for safe use” / “Schedule of limitations”**

1. For EPL Ga enclosures made of aluminium must be installed protected from impact and friction.
2. To avoid electrostatic charging: Do not rub surfaces with a dry cloth.

(18) **Essential health and safety requirements**

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject
None	

(19) **Drawings and Documents**

See test report “Manufacturer’s Documents”

