



Wiring diagram 960326-3133 D

Micropilot FMR 130

Endress + Hauser



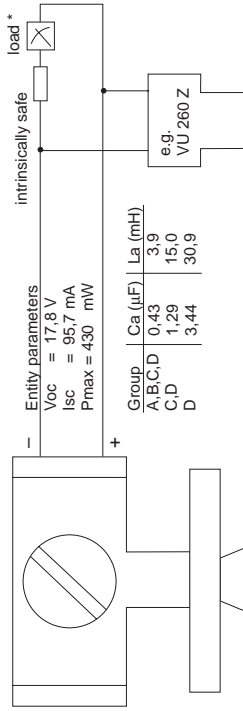
HAZARDOUS LOCATION

CLASS I, Div. 1 & 2, Groups A, B, C, D
CLASS II, Div. 1 & 2, Groups E, F, G
CLASS III

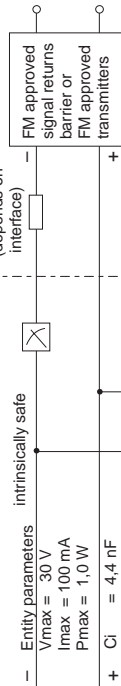
SAFE AREA

Signal output (I.S.)
4...20 mA

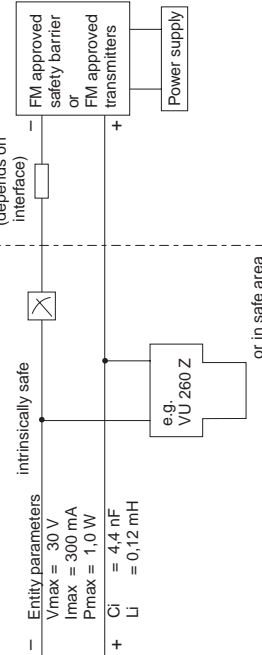
Active signal mode without barrier



Active signal mode with barrier



Passive signal mode



NOTE:

- Keep tight when circuit is alive. After disconnection power wait when temp. Cl. T6 30 min, T4 2 min before removing cover.
- Max. ambient temperature = 65 °C
- Temperature class with LCD display T4 at Tamb. = 40 °C
T3 C at Tamb. = 65 °C
- Control room equipment may not use or generate over 250 Vrms.
- The voltage (Vmax.) and current (Imax.) of the intrinsically safe apparatus (FMR13x and VU260Z) must be equal to or greater than the voltage (Voc or Vt) and current (Isc or It) levels of the associated apparatus (safety barrier). In addition, the sum of the unprotected capacitance (Ci) and inductance (Li) of the intrinsically safe apparatus, including interconnecting wiring, must be equal to or less than the capacitance (Ca) and inductance (La) which can be safely connected to the associated apparatus. When the model VU260Z handheld terminal is used the allowed inductance (La) of the barrier must be reduced to a value chosen from Table A. If the barrier Isc or It falls between two values in Table A, the lower value of La must be chosen. The "entity" parameters of the model VU260Z are:
Input: Vmax. = 30 V, Imax. = 500 mA, Ci = 0, Li = 0
Output: Voc = 7,3 V, Isc = 6,1 mA, Ca = 10 µF, La = 700 mH
When an active mode safe area barrier is used the FMR13x and the barrier currents must be added together (Im). For example: active mode safe area barrier = 50 mA. Im = 96 mA + 50 mA + 6,1 mA (for VU260Z) = 152,1 mA
Enter Table A at Im = 160 mA for La = 0,8 mH for GP A, B

Table A

Barrier Isc or It or Im (mA)	Allowed Inductance, La (mH)			
	GP A, B	GP C, E	GP D, F, G	GP D, F, G
300	0,19	1,6	2,8	2,8
280	0,20	1,8	3,2	3,2
260	0,23	2,2	3,9	3,9
240	0,27	2,7	4,6	4,6
220	0,3	3,0	5,4	5,4
200	0,4	4,0	6,5	6,5
180	0,5	5,0	7,9	7,9
160	0,8	5,5	9,9	9,9
150	1,0	6,2	11,2	11,2
140	1,3	7,0	12,7	12,7
130	1,6	8,0	14,6	14,6
120	2,0	9,0	16,9	16,9
110	2,5	10,0	20,0	20,0
100	3,0	12,0	23,0	23,0
90	4,0	15,0	28,0	28,0
80	5,0	18,0	35,0	35,0
70	6,0	22,0	44,0	44,0
60	7,5	28,0	58,0	58,0
50	10,0	40,0	79,0	79,0
40	15,0	56,0	113,0	113,0
30	23,0	87,0	176,0	176,0

Max. permissible medium temperature	Max. permissible ambient temperature	Temperature class without display / operating module	Temperature class with built-in display / operating module
40 °C	40 °C	T6	T4
65 °C	65 °C	T6	T3C
85 °C	65 °C	T5	T3C
100 °C	55 °C	T4	T3C
135 °C	55 °C	T3C	T3C
150 °C	55 °C	T3C	T3C
Micropilot FMR13x...D or E or H (with extended temperature range of medium)			
85 °C	65 °C	T6	T3C
100 °C	55 °C	T5	T3C
135 °C	55 °C	T4	T3C
200 °C	55 °C	T3	T3
250 °C	55 °C	T2B	T2B

- Install per National Electrical Code (NEC).
- Warning: Substitution of components may impair intrinsic safety.
- A dust tight seal must be used at the conduit entries when the transmitter is used in a Class II location.
In Class I, seal all conduit entries within 18 inches.
- For more informations see installation and operating instruction.
- Use the handheld unit e.g. E+H VU260Z or use any other handheld unit which is FM-approved, with entity parameter.

* for more information see Instruction Manual

Agency controlled drawing.
No changes without prior
Agency approval.