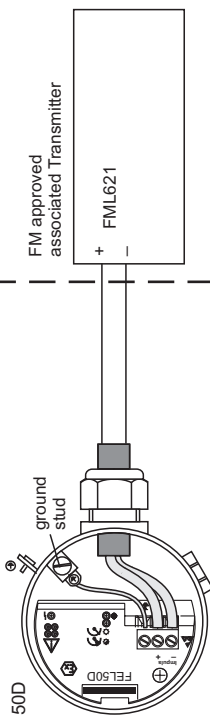


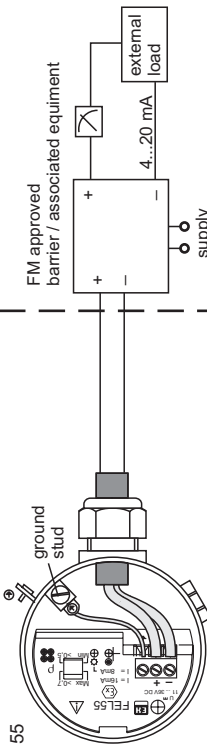
## Hazardous classified location

Class I, Div. 1, 2, Groups A, B, C, D  
Class I, Zone 0  
Class II, Div. 1, 2, Groups E, F, G  
Class III

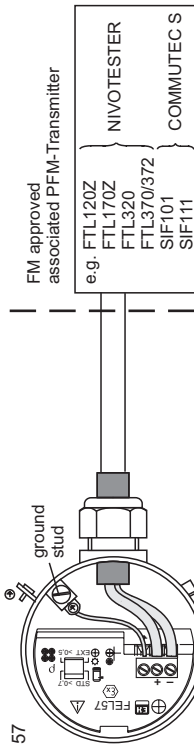
FEL50D



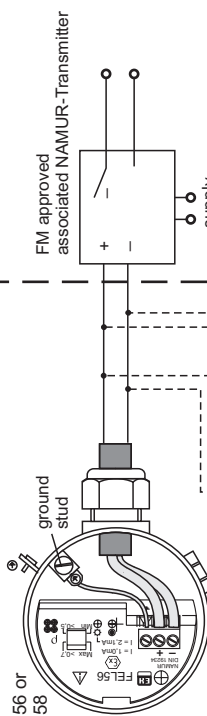
FEL55



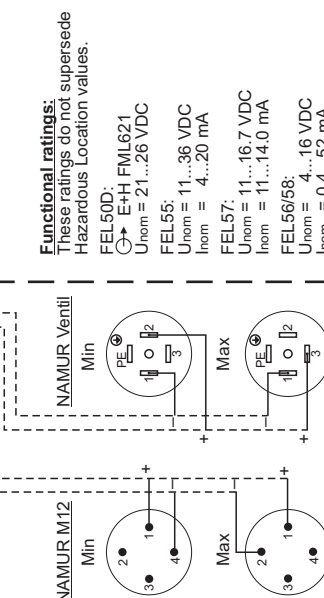
FEL57



FEL56 or  
FEL58



NAMUR  
Housing compact



### Functional ratings:

These ratings do not supersede  
Hazardous Location values.

FEL50D:  
E+H FML621  
U<sub>nom</sub> = 21...26 VDC  
FEL55:  
U<sub>nom</sub> = 11...36 VDC  
I<sub>nom</sub> = 4...20 mA  
FEL57:  
U<sub>nom</sub> = 11...16.7 VDC  
I<sub>nom</sub> = 11...14.0 mA  
FEL56/58:  
U<sub>nom</sub> = 4...16 VDC  
I<sub>nom</sub> = 0.4...52 mA

## Intrinsically safe (entity), Class I, Div. 1, Groups A, B, C, D Hazardous Location Installations

- Control room equipment may not use or generate over 250 V<sub>rms</sub>.
- Wire all circuits for power supply per NEC ANSI/NFPA 70 and ISA RP 12.06.01.
- Use entity approved safety barrier or other associated equipment that satisfy the following conditions:  
V<sub>oc</sub> ≤ V<sub>max</sub>, I<sub>sc</sub> ≤ I<sub>max</sub>, C<sub>a</sub> ≥ C<sub>i</sub> + C<sub>able</sub>, L<sub>a</sub> ≥ L<sub>i</sub> + L<sub>able</sub>.

Transmitter entity parameters are as follows:

FEL50D insert:  
Entity Parameters:  
V<sub>max</sub> ≤ 27.6 V  
I<sub>max</sub> ≤ 93 mA  
P<sub>i</sub> ≤ 640 mW  
C<sub>i</sub> ≤ 2 nF  
L<sub>i</sub> ≤ 0.133 mH

FEL55 insert:  
Entity Parameters:  
V<sub>max</sub> ≤ 36 V  
I<sub>max</sub> ≤ 100 mA  
P<sub>i</sub> ≤ 1 W  
C<sub>i</sub> ≤ 0  
L<sub>i</sub> ≤ 0

FEL57 insert:  
Entity Parameters:  
V<sub>max</sub> ≤ 16.7 V  
I<sub>max</sub> ≤ 150 mA  
P<sub>i</sub> ≤ 1 W  
C<sub>i</sub> ≤ 0  
L<sub>i</sub> ≤ 0

FEL56/FEL58 insert+  
NAMUR housing compact  
Entity Parameter:  
V<sub>max</sub> ≤ 16 V  
I<sub>max</sub> ≤ 52 mA  
P<sub>i</sub> ≤ 169 mW  
C<sub>i</sub> ≤ 0  
L<sub>i</sub> ≤ 0

- WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
- Ex ia is defined as Intrinsically Safe.
- Use supply wires suitable for 5°C above surrounding ambient.

## Division 2 and Zone 2 Installation

- Installation shall be in accordance with NEC using threaded conduit or other wiring methods in accordance with articles 500 to 510.
- Nonincendive field wiring installation.  
The Nonincendive Field Wiring Circuit Concept allows interconnection of nonincendive field wiring apparatus with associated nonincendive field wiring apparatus or associated apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when V<sub>max</sub> ≥ V<sub>oc</sub> or V<sub>i</sub>, C<sub>a</sub> ≥ C<sub>i</sub> + C<sub>able</sub>, L<sub>a</sub> ≥ L<sub>i</sub> + L<sub>able</sub>.

Transmitter parameters are as follows:

FEL50D insert:  
Entity Parameters:  
V<sub>max</sub> ≤ 27.6 V  
I<sub>max</sub> ≤ 93 mA  
P<sub>i</sub> ≤ 640 mW  
C<sub>i</sub> ≤ 2 nF  
L<sub>i</sub> ≤ 0.133 mH

FEL55 insert:  
Entity Parameters:  
V<sub>max</sub> ≤ 36 V  
I<sub>max</sub> ≤ 100 mA  
P<sub>i</sub> ≤ 1 W  
C<sub>i</sub> ≤ 0  
L<sub>i</sub> ≤ 0

FEL57 insert:  
Entity Parameters:  
V<sub>max</sub> ≤ 16.7 V  
I<sub>max</sub> ≤ 150 mA  
P<sub>i</sub> ≤ 1 W  
C<sub>i</sub> ≤ 0  
L<sub>i</sub> ≤ 0

FEL56/FEL58 insert  
(voltage controlled circuit)+  
NAMUR housing compact  
Entity Parameter:  
V<sub>max</sub> ≤ 16 V  
I<sub>max</sub> ≤ 52 mA  
P<sub>i</sub> ≤ 169 mW  
C<sub>i</sub> ≤ 0  
L<sub>i</sub> ≤ 0

- For these current and voltage controlled circuits, the parameter I<sub>max</sub> is not required and need not to be aligned with parameters I<sub>sc</sub> and I<sub>t</sub> of the associated nonincendive field wiring or associated apparatus.
- WARNING: EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2 OR CLASS I, ZONE 2.

## Class II, III installation (without barrier)

- Installation of transmitter circuit wiring according to NEC using threaded conduit or other wiring methods in accordance with articles 500 to 510.

| Temperature code | Permissible ambient temperature<br>electronic compartment | Device                                                  |
|------------------|-----------------------------------------------------------|---------------------------------------------------------|
| T6               | -50°C...+60°C                                             | FEL50D                                                  |
| T5<br>T4<br>T3   | -50°C...+70°C                                             | FEL5x without FEL50D<br>All electronic inserts<br>FEL5x |

ZD041F-I/00/EN/10.09  
CCS/FM6.0  
FM/I 26.03.09



71105522

## FM Control Drawing 960392-1060 I

Liquiphant M/S (IS and NI)  
Current output PFM, NAMUR  
Entity installation

Endress+Hauser

People for Process Automation

