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Safety Instructions
Flow and Energy Manager, Density controller FML621

[Ex ia Ga] IIC

Safety instructions for electrical apparatus certified for use in explosion-hazardous areas.

Endress+Hauser [EH]

People for Process Automation

Flow and Energy Manager, Density controller FML621

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About this document

ℹ This document has been translated into several languages. Legally determined is solely the English source text.

The document translated into EU languages is available:
- In the download area of the Endress+Hauser website: www.endress.com -> Downloads -> Manuals and Datasheets -> Type: Ex Safety Instruction (XA) -> Text Search: ...
- In the Device Viewer: www.endress.com -> Product tools -> Access device specific information -> Check device features

ℹ If not yet available, the document can be ordered.

Associated documentation

This document is an integral part of the following Operating Instructions:

- Operating instructions: BA02024R
- Brief operating instructions: KA01478F
- Technical information: TI01466F

Supplementary documentation

Explosion-protection brochure: CP00021Z/11

The Explosion-protection brochure is available:
- In the download area of the Endress+Hauser website: www.endress.com -> Downloads -> Brochures and Catalogs -> Text Search: CP00021Z
- On the CD for devices with CD-based documentation

Manufacturer's certificates

EAC certificate of conformity

Certification body: ООО "НАНИО ЦСВЭ"

Certificate number: ЕАЭС RU C-DE.AA87.B.00939/22

Affixing the certificate number certifies conformity with the following standards:

- GOST IEC 60079-14-2013
- GOST 31610.11-2014 (IEC 60079-11:2011)
- GOST 31610.0-2014 (IEC 60079-0:2011)

Manufacturer address

Endress+Hauser Wetzer GmbH + Co. KG
Obere Wank 1
87484 Nesselwang, Germany

Safety Instructions: General	• Install the unit according to the manufacturers recommendations and local national norms and regulations.
	• The unit is an associated electrical apparatus and can only be installed outside the hazardous area.
	• The unit must be installed in such a way that a minimum IP ingress protection is achieved.
	• When installing the unit care must be taken that there must be a spacing of at least 50 mmto the intrinsically safe terminals. When interconnecting intrinsically safe circuits, observe that currents and voltages muss be summed up.
	• In applications for Zone 20 or 21 only sensors that fulfil the requirements for category 1D or 2D can be connected to the intrinsically safe input circuit.

Electrical connection data

FML621	**Protection class: [Ex ia] IIC**		
Supply set Terminals L/L+ and N/L-	U_m = 90 to 250 V_{AC}, $^{50}/_{60}$ Hz U_m = 20 to 28 V_{AC}, $^{50}/_{60}$ Hz, 20 to 36 V_{DC}		
Current input active (intrinsically safe) Terminals 82, 81 resp. 83, 81 Terminals (optional) 182, 181 resp. 183, 181	$U_0 \leq 27.6$ V $I_0 \leq 88.6$ mA $P_0 \leq 612$ mW		
Internal capacitance Internal inductance	C_i = negligibly small L_i = negligibly small		
Max. connection values	Ex ia IIC Ex ia IIB Ex ia IIA	$C_0 \leq 44$ nF $C_0 \leq 260$ nF $C_0 \leq 260$ nF	$L_0 \leq 1.6$ mH $L_0 \leq 16$ mH $L_0 \leq 16$ mH
Current input active (intrinsically safe) Terminals 82, 10 resp. 83, 110 Terminals (optional) 182, 112 resp. 183, 113	$U_0 \leq 27.6$ V $I_0 \leq 92.3$ mA $P_0 \leq 637$ mW		
Internal capacitance Internal inductance	C_i = negligibly small L_i = negligibly small		
Max. connection values	Ex ia IIC Ex ia IIB Ex ia IIA	$C_0 \leq 48$ nF $C_0 \leq 260$ nF $C_0 \leq 420$ nF	$L_0 \leq 1.3$ mH $L_0 \leq 15$ mH $L_0 \leq 25$ mH
Current input passive (intrinsically safe) Terminals 10, 11 resp. 110, 11 Terminals (optional) 112, 111 resp. 111, 113	$U_0 \leq 27.6$ V $I_0 \leq 3.7$ mA $P_0 \leq 26$ mW	$U_i \leq 30$ V $I_i \leq 100$ mA $P_i \leq 750$ mW	
Internal capacitance Internal inductance	C_i = negligibly small L_i = negligibly small		

FML621		Protection class: [Ex ia] IIC	
Max. connection values	Ex ia IIC Ex ia IIB Ex ia IIA	$C_0 \leq 64$ nF $C_0 \leq 350$ nF $C_0 \leq 350$ nF	$L_0 \leq 100$ mH $L_0 \leq 100$ mH $L_0 \leq 100$ mH
RTD input (intrinsically safe) Terminals 1, 5, 6, 2 resp. 3, 7, 8, 4 Terminals (optional) 117, 116, 115, 114 resp. 121, 120, 119, 118		$U_0 \leq 9.6$ V $I_0 \leq 16.2$ mA $P_0 \leq 39$ mW	
Internal capacitance Internal inductance		C_i = negligibly small L_i = negligibly small	
Max. connection values	Ex ia IIC Ex ia IIB Ex ia IIA	$C_0 \leq 410$ nF $C_0 \leq 2.5$ µF $C_0 \leq 2.5$ µF	$L_0 \leq 100$ mH $L_0 \leq 100$ mH $L_0 \leq 100$ mH
Internal capacitance Internal inductance		C_i = negligibly small L_i = negligibly small	
Max. connection values	Ex ia IIC Ex ia IIB Ex ia IIA	$C_0 \leq 600$ nF $C_0 \leq 2.9$ µF $C_0 \leq 4.2$ µF	$L_0 \leq 100$ mH $L_0 \leq 100$ mH $L_0 \leq 100$ mH
Current/pulse output Terminals 131, 132 resp. 133, 134		$^0/_4$ to 20 mA	
Transmitter power supply Terminals 91 and 92		$U = 24$ $V_{DC} \pm 5\%$ $I \leq 80$ mA	
Relay output Terminals 52 and 53 Terminals (optional) 152 and 153 resp. 142 and 143		$U_{max} \leq 250$ V_{AC} $U_{max} \leq 30$ V_{DC}	$I_{max} \leq 3$ A $I_{max} \leq 3$ A
Interface connection RS 485 Terminals 104, 103, 102, 101			
Temperature range		$T_a = -20$ to $+60$ ℃	

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