

# MODEL DAX 3F: EXPLOSIVE GAS DETECTOR



The DAX 3F detector was designed to continuously measure the presence of various explosive gases in the air and also the presence of solvent vapours, hydrogen and hydrocarbons.

Its measurement principle, catalytic combustion, gives it its major benefits:

- very short response time,
- accuracy and reliability of measurements.

By connecting it to a Dalemans unit, you will obtain a very high performance installation.

ATEX certified, this detector is especially suitable for the industrial sector, whose applications are located in an explosive atmosphere.

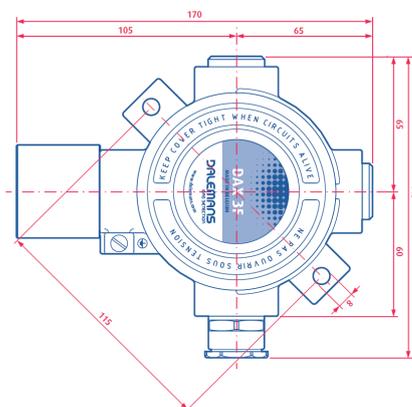


## Technical specifications

<b>MODEL</b>	DAX 3F		<b>INTERMITTENT HUMIDITY</b>	10 - 99 % HR
<b>SENSING HEAD</b>			<b>PRESSURE</b>	90 - 110 kPa
<b>SINTERED METAL FILTER</b>	Inox 1.4404 (AISI 316L)		<b>CABLE CROSS SECTIONAL AREA</b>	1,5 - 2,5 mm <sup>2</sup> (solid wires)
<b>JUNCTION BOX</b>	Aluminio		<b>MAX. CABLE LENGTH</b>	Refer to the installation instructions of the control unit
<b>DIMENSIONS / WEIGHT</b>	170 x 145 x 90 mm / 1400 g		<b>INGRESS PROTECTION</b>	IP6X (dust tight)
<b>SENSOR TYPE / SIGNAL</b>	Catalytic (Pellistor) / 3-wire mV (Wheatstone bridge)		<b>CABLE ENTRIES</b>	1 x M20 / 6,1 - 11,7 mm (other size upon request)
<b>MEASURING RANGE</b>	0 - 100 % LEL		<b>HAZARDOUS AREAS</b>	Zones 1 or 2 (gas) - Zones 21 or 22 (dust)
<b>RESOLUTION</b>	±3 % full scale < 60 % LEL ±5 % full scale > 60 % LEL		<b>EQUIPMENT GAS GROUPING</b>	IIC (methane, propane, ethylene, hydrogen, acetylene)
<b>RESPONSE TIME (T90)</b>	< 30 sec.		<b>EQUIPMENT DUST GROUPING</b>	IIIC (conductive dust)
<b>EXPECTED OPERATING LIFE SPAN</b>	> 2 years		<b>STANDARDS</b>	EN 60079-0:2009, EN 60079-1:2007, EN 60079-31:2009 IEC 60079-0:2007, IEC 60079-1:2007, IEC 60079-31:2008
<b>SENSOR CHARACTERISTICS*</b>	DAL17	DAL21	<b>APPROVAL (ATEX + IECEx)</b>	Ex II 2G Ex db IIC T6 - T4 Ex II 2D Ex tb IIIC Tx °C
<b>SUPPLY VOLTAGE</b>	2,00 V	2,00 V	<b>AMBIENT TEMPERATURE</b>	Tamb = -20 °C a +55 °C for T6 and T85 °C Tamb = -20 °C a +75 °C for T5 and T100 °C Tamb = -20 °C a +90 °C for T4 and T135 °C
<b>SUPPLY CURRENT</b>	175 mA ± 20 mA	300 mA	<b>CERTIFICATES</b>	FTZU 09 ATEX 0313X IECEx FTZU 10.0007
<b>POWER CONSUMPTION</b>	0,4 W	0,75 W		
<b>STORAGE TEMPERATURE</b>	-40 °C to +80 °C			
<b>OPERATING TEMPERATURE</b>	-20 °C a +55 °C for T6 temperature class -20 °C a +70 °C for T5 y T4 temperature class			
<b>AMBIENT HUMIDITY</b>	20 - 90 % HR			

\* Ensure that the sensor electrical characteristics meet the capability of the associated control unit.

## DIMENSIONS (mm)



## ELECTRICAL WIRING

Wiring must comply with local regulations and standards in force and meet the electrical requirements of the detector DAX 3F. Dalemans recommends the use of colour cable with solid wires. The acceptable cross sectional area of the cable is 1.5 to 2.5 mm<sup>2</sup> and depends on the type of sensor used and the distance between the detector and the control unit. For more information about the cross sectional area of the cable and the maximum cable length, please refer to the instruction manual of the control unit. The overall cable diameter must be within the range given in figure 4 below. The cable gland must be sufficiently tightened on the cable to ensure a good sealing.

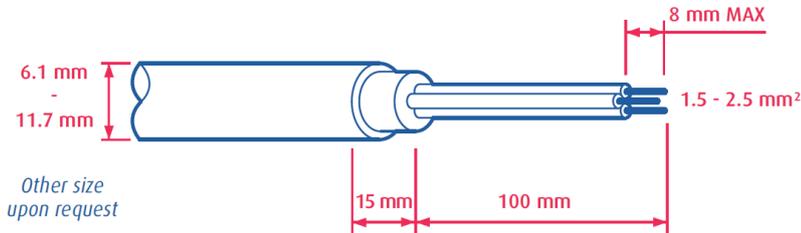
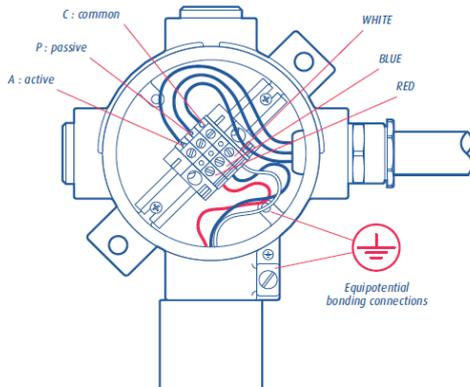


Figura 4: Cable stripping

## CONNECT THE DETECTOR



- Loosen the locking screw of the junction box cover using the 1.5 mm hex key OUT0000115 and completely turn the cover counterclockwise to unscrew it.
- Wires must be stripped and plugged so that the gap between insulation and the metallic edge of the terminal connection does not exceed 1 mm distance.
- Connect wires according to the diagram given in image.
- Equipotential bonding may be provided using either the internal or the external connection. If the external connection is used, the cross sectional area of the bonding conductor should be of at least 4 mm<sup>2</sup>.
- Screw up the cover on the junction box, hand tighten 1/4 turn. Put the locking screw of the cover back in place and tighten with the 1.5 mm hex key OUT0000115.

## EXAMPLE OF PLACEMENT FOR SOME FLAMMABLE GASES\*

GAS	FORMULA	DENSITY (air=1)	DETECTOR(S) POSITION
Acetylene	(CH) <sub>2</sub>	0,90	Ceiling + floor
Butane	C <sub>4</sub> H <sub>10</sub>	2,05	Floor
Cracked gas	-	0,47	Ceiling
Ethylene oxide	C <sub>2</sub> H <sub>4</sub> O	1,52	Floor
Hydrogen	H <sub>2</sub>	0,07	Ceiling
Isobutane	(CH <sub>3</sub> ) <sub>3</sub> CH	2,00	Floor
Methane	CH <sub>4</sub>	0,55	Ceiling
Natural gas	-	0,68	Ceiling
Propane	C <sub>3</sub> H <sub>8</sub>	1,56	Floor
Propane-air	-	±1,15	Ceiling + floor

\*This list is not exhaustive. Contact Dalemans for further information.