

MODEL DAX 420-IR: EXPLOSIVE OR TOXIC GAS DETECTOR CH₄ - C_xH_y - CO₂...



The DAX 420-IR detector was designed to continuously measure the presence of various gases in the air.

Its operating principle, infrared, gives it its major benefits:

- very long lifetime,
- increased gas detection selectivity,
- immunity to poisons and,
- low maintenance cost.

By connecting it to a Dalemans unit or to any other instrument that can receive a 4..20 mA signal, you will benefit from a highly flexible installation.



TECHNICAL SPECIFICATIONS

MODEL		DAX 420-IR	EXPECTED OPERATING LIFE SPAN	> 5 years
SENSING HEAD		Stainless steel 1.4404 (AISI316L)	ELECTRICAL CHARACTERISTICS	19 - 30 Vdc / Max. 90 mA
SINTERED METAL FILTER			STORAGE TEMPERATURE	-20°C to +50°C
JUNCTION BOX		Aluminium	TEMPERATURE RANGE	-20°C to +50°C
DIMENSIONS / WEIGHT		170 x 145 x 90 mm / 1.400 g	AMBIENT HUMIDITY	0 - 95 % HR
SENSOR TYPE / SIGNAL		Infrared / 3-wires 4..20mA current loop	CABLE CROSS SECTIONAL AREA	0.75 - 2.5 mm² (solid wires)
ADJUSTMENTS		Zero and calibration by internal potentiometers	MAX. CABLE LENGTH	1.000 m
MEASURING RANGE*	BUTANE (C ₄ H ₁₀)	0 - 100 % LEL	LOOP RESISTOR	50 - 750 ohms
	METHANE (CH ₄)		INGRESS PROTECTION	IP 6X (dust tight)
	PROPANE (C ₃ H ₈)		CABLE ENTRIES	1 x M20 / 6.1 - 11.7 mm (other size upon request)
	CARBON DIOXIDE (CO ₂)	0 - 0.5 % vol., 0 - 1 % vol., 0 - 2 % vol., 0 - 4% vol.	HAZARDOUS AREAS	Zones 1 or 2 (gas) - Zones 21 or 22 (dust)
RESOLUTION		± 0.5 % full scale < 50% LEL	EQUIPMENT GAS GROUPING	IIC (methane, propane, ethylene, hydrogen, acetylene)
		± 1% full scale >50% LEL	AMBIENT TEMPERATURE	Tamb= -20°C to +55°C
RESPONSE TIME (T90)		< 30 sec.	CERTIFICATES	FTZU 09 ATEX 0182

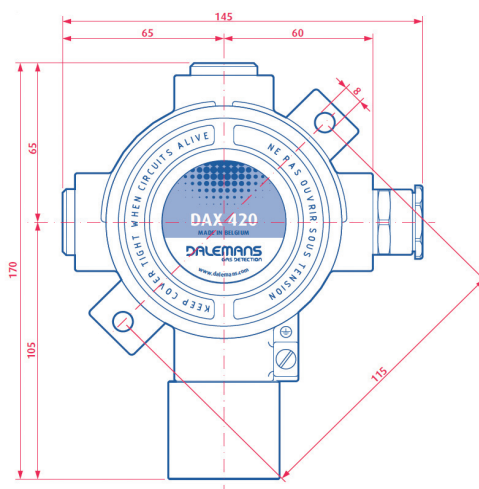
* Other gases upon request.

Approval (ATEX + IECEx):

II 2G Ex d IIC T6
II 2D Ex tD A21 IP6X T85°C

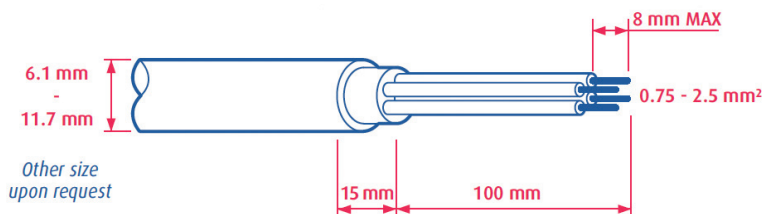
Standards: EN 60079-0:2006, EN 60079-1:2007
EN 61241-0:2006, EN 61241-1:2004

DIMENSIONS (mm)

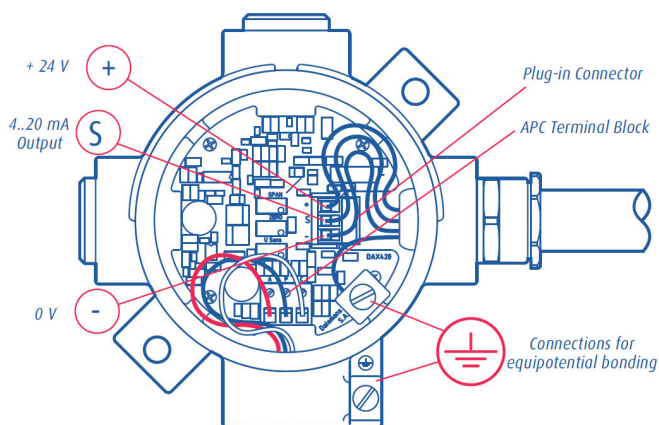


ELECTRICAL WIRING

Wiring must comply with local regulations and standards in force and meet the electrical requirements of the DAX 420-IR gas detector. Dalemans recommends the use of colour coded cable with solid wires (3 + 1 for junction box earthing). The acceptable cross sectional area of the cable is 0.75 to 2.5 mm² and depends on the type of sensor used and the distance between the detector and the control unit/PLC. 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/PLC. The overfall cable diameter must be within the range given in image. The junction box may be earthed through the cable shield. The cable shield must be connected to the ground at the control unit/PLC. The cable gland must be sufficiently tightened on the cable to ensure a good sealing.



CONNECT THE DETECTOR



- Loosen the locking screw of the junction box cover using the 1.5 mm hex key OUT00000115 and completely turn the cover counterclockwise to unscrew it.
- Connect wires according to the diagram given in image. 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.
- Internal and external connections are available for equipotential bonding. For the external connection, the cross sectional area of the bonding conductor should be of at least 4 mm².
- 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 OUT00000115.

EXAMPLE OF PLACEMENT FOR SOME FLAMMABLE GASES*

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

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