



THORNE &
DERRICK
INTERNATIONAL

Thorne & Derrick
+44 (0) 191 410 4292
www.heatingandprocess.com

Hydra

Addressable Gas
Detection System

CO
NO₂
LPG
CO
NO₂
LPG
CO
NO₂



Hydra₃₂

- 1-32 channel addressable control system

Hydra₂₅₆

- 1-256 channel addressable control system

Hydra₊

- Addressable CO, NO₂ or LPG gas detector

Hydra

Vehicle exhaust fumes present a health hazard because they contain significant levels of toxic gases such as carbon monoxide (CO) and oxides of nitrogen (NO/NO₂).

Exhaust gases can accumulate in enclosed car parks without adequate ventilation; exposure to high concentrations could occur and result in death. Gas detection is therefore essential to control ventilation systems and protect car park workers and users.

Addressable gas detection systems cost far less to install than conventional point-to-point systems. The cable and installation/labour cost savings are often greater than the cost of the gas detection system. The Hydra addressable gas detection system provides a cost-effective solution for monitoring CO and NO₂ gas levels within car parks, as well as significantly reducing energy costs by triggering ventilation fans only when gas accumulations have been detected.

Hydra is also ideal for detecting flammable gas leaks from LPG pipes, valves and meters within residential and commercial buildings.



Low installation cost

Cable and installation costs are minimised:

- Up to 32 detectors on a single 4-core cable using the Hydra₃₂ control panel.
- Up to 64 detectors on a single 4-core cable using the Hydra₂₅₆ control panel.
- Up to 256 detectors on a single Hydra₂₅₆ control panel.

Low operating cost

- Electrochemical CO and NO₂ sensors provide superior performance compared with semi-conductor type sensors used in some car park systems. False alarms and excess ventilation fan usage are significantly reduced.
- 4-year sensor life minimises sensor replacement costs.

Simple to use

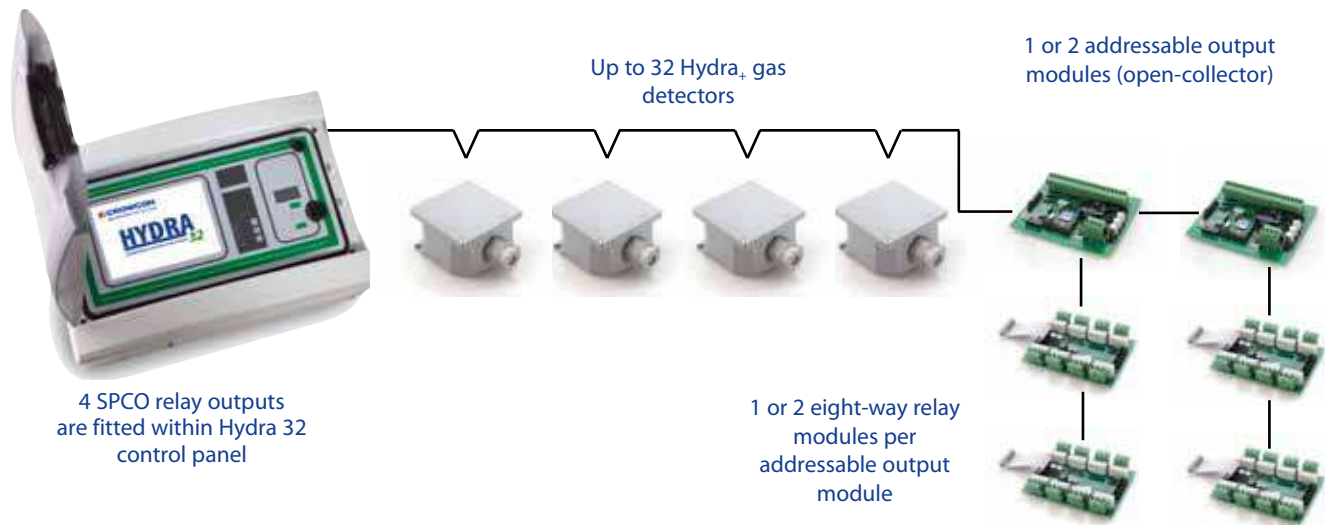
- Bright, clear display on control panel shows gas levels as well as alarm and fault status.
- Simple push-button operation.
- Plug-in calibration tool for gas detectors.
- Level 1 alarms can be set to operate 'silently' so that ventilation fans can be controlled without raising alarms

Flexible operation

- Systems can operate independently or connect to BMS/DCS systems.
- Programmable relay outputs for BMS connection or direct fan control.
- Event logging feature provides system alarm and fault history.

Hydra Configuration Options

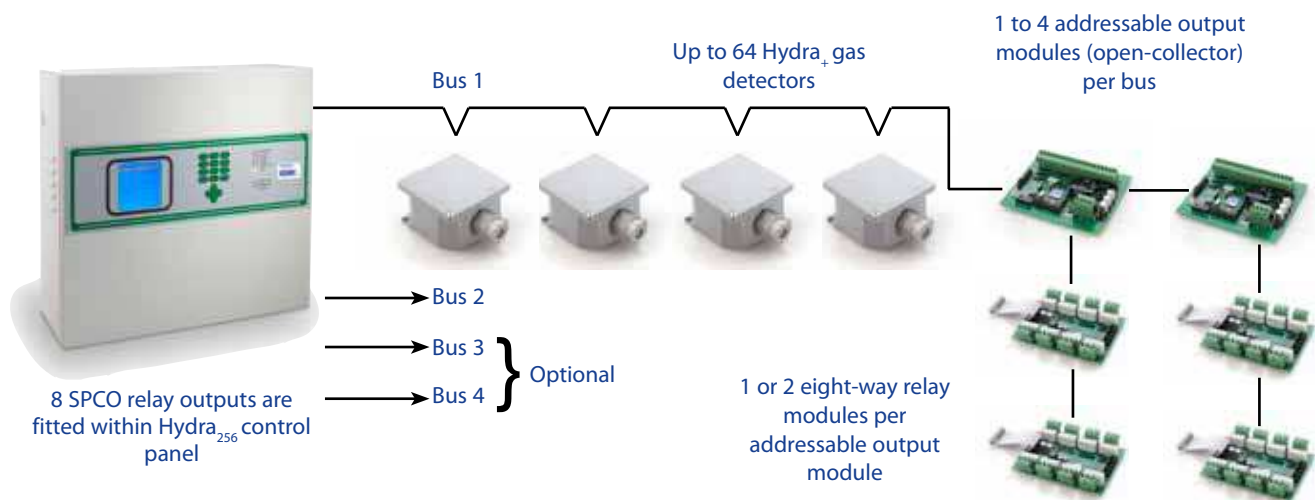
Hydra₃₂ System Configuration



Up to 32 Hydra₊ gas detectors can be connected to the Hydra₃₂ control panel on one RS-485 bus. A 4-core cable is required to provide the detector power supply and transmit gas level and status data.

One or two addressable 16-way output modules can also be connected at any point on the detector bus for driving auxiliary devices such as sounders and beacons. These modules have open-collector outputs which must be used in conjunction with auxiliary 24Vdc relays for device control. 8-way relay modules are also available for use in conjunction with addressable output modules. Each addressable output module can drive two relay modules to provide a maximum of 32 single-pole, change-over relay outputs per system.

Hydra₂₅₆ System Configuration



Up to 64 Hydra₊ gas detectors can be connected to the Hydra₂₅₆ control panel on one RS-485 bus. Two RS-485 bus modules are fitted as standard (128 detectors maximum), a further two buses may be fitted to extend to 256 detectors.

One to four addressable 16-way output modules can also be connected at any point on each detector bus for driving auxiliary devices such as sounders and beacons. These modules have open-collector outputs which must be used in conjunction with auxiliary 24Vdc relays for device control. 8-way relay modules are also available for use in conjunction with addressable output modules. Each addressable output module can drive two relay modules to provide a maximum of 256 single-pole, change-over relay outputs per system.

	Hydra ₃₂	Hydra ₂₅₆	Hydra ₊ Detector
Size	486W x 288H x 148D mm (19.1 x 11.3 x 5.8 ins)	430W x 405H x 140D mm (16.9 x 16 x 5.5 ins)	100W x 180H x 65D mm (3.9 x 7 x 2.5 ins)
Weight	3.8Kg (8.4lbs)	7.9Kg (17.4lbs)	0.4kg (0.9lbs)
Enclosure material	ABS	Painted steel	Painted alloy
Ingress protection	IP65	N/A	IP55
Operating Temperature	0 to +55°C (32 to 131°F)	0 to +55°C (32 to 131°F)	-10 to +55°C (14 to 131°F)
Storage Temperature	-20 to +60°C (-4 to 140°F)	-20 to +60°C (-4 to 140°F)	-20 to +60°C (-4 to 140°F)
Humidity	15-85%RH non-condensing	15-85%RH non-condensing	20-90%RH non-condensing (RH @40°C)
Power	220Vac +/-10%, 110Vac version also available. 6VA max	100-120Vac 0.4A Max 200-240Vac 0.2A Max	12-27Vdc CO & NO ₂ : 40mA LPG: 60mA
Battery Back-Up	2 x 12V 7Ah lead-acid batteries (optional)	2 x 12V 7Ah lead-acid batteries (optional)	N/A
Inputs	1-32 addressable Hydra ₊ gas detectors (RS-485, maximum cable length 1Km typically)	Up to 256 addressable Hydra ₊ gas detectors. Two RS-485 buses supplied (max. 128 detectors), two extra buses may be added	N/A
Outputs	3 x alarm relays (alarm level 1,2,3) 1 x fault relay All relays are single-pole change- over (SPCO) with contacts rated 1A 24Vdc.	3 x alarm relays (alarm level 1,2,3) 1 x fault relay 1 x power fail relay 1 x battery relay 1 x sounder relay 1 x test relay SPCO contacts rated 16A 230Vac.	RS-485 Modbus
Addressable output modules	One or two 16-way modules can be connected to provide up to 32 additional open-collector type outputs, or up to 32 SPCO relays when used with 8-way relay modules. Relays can be energised/de-energised, latched/non-latched, time-delayed, pulsed. Contacts rated 16A 230Vac	One to four 16-way modules can be connected per RS-485 bus to provide up to 64 additional open-collector outputs, or up to 64 SPCO relays when used with 8-way relay modules. 256 outputs maximum.	N/A
Digital communications	RS-485 Modbus communication to BMS/DCS/PLC systems. System configuration software and PC lead/converter supplied.	RS-232 port for system configuration via a PC (software and lead supplied), or for Modbus communication to BMS/DCS/PLC systems.	N/A
Event Log	Up to 1000 alarm, power, fault, system events are stored in NVM.	Up to 1000 alarm, power, fault, system events are stored in NVM and on SD card.	N/A
Panel Indication	OLED text display, 96 x 64 pixels LED's: 6 x red Alarm (alarm level 1,2,3) 2 x yellow Fault 2 x green TX/RX Piezo sounder	Graphic LCD LED's: 6 x red Alarm (alarm level 1,2,3) 2 x yellow Fault 2 x yellow Over-range 2 x yellow Under-range 2 x green Power/battery 2 x yellow Inhibit/test	N/A
Gases and ranges			CO: 0-300ppm NO ₂ : 0-20ppm LPG/Propane: 0-100%LEL
Sensor life			4 years typical
Approvals	EMC: EN50270, EN61000-6-3: 2001 + A11 (2004), FCC CFR 47 Part 15, ICES-002	EMC: EN50270, EN61000-6-3: 2001 + A11 (2004)	

Crowcon reserves the right to change the design or specification of the product without prior notice.

Hydra Accessories



Addressable
output module
(open-collector)



Relay Module



Calibration
Keypad



Calibration
Adaptor



Test gas cylinders
and regulators

A HALMA COMPANY



**THORNE &
DERRICK
INTERNATIONAL**

Thorne & Derrick
+44 (0) 191 410 4292

www.heatingandprocess.com

CROWCON
Gas Detection You Can Trust