DURAN electrónica
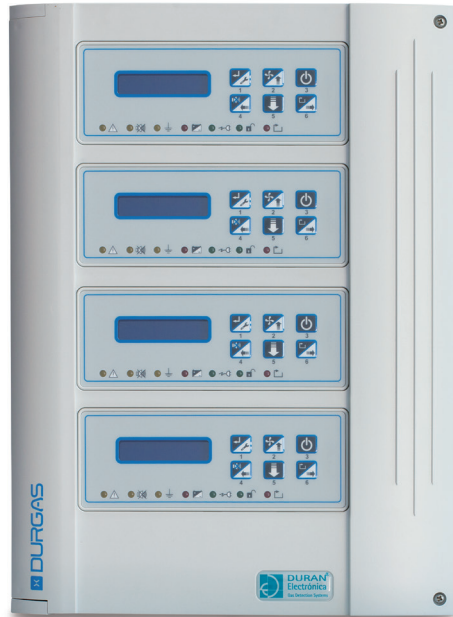
www.duranelectronica.com

DURGAS

Presentation
DURGAS

DETECTION AND MEASUREMENT
OF TOXIC AND EXPLOSIVE GASES

DURAN
Electrónica
Gas Detection Systems

X DURGAS

X DURGAS Mini

- Expandable control panels from 1 to 4 module lines, with a capacity of up to 16 DETECTORS PER MODULE LINE.

- A MINI VERSION, non expandable with a capacity of 16 detectors, is available.

- Digital communication with detectors through FOUR WIRES in RS 485 format.

- Maximum installation distance 1 KM PER MODULE LINE.

- Simultaneous detection of up to FOUR DIFFERENT GASES PER MODULE LINE, in real time.

- "PLUG AND PLAY", automatically detects the quantity, type and family of the detectors installed, auto-adjusting the adequate ranges and ventilation levels depending on the various TLVs.

- Possibility of selecting up to THREE DIFFERENT FULL SCALES PER GAS, and various ventilation and alarm levels.

- Two standards included: SPANISH & PORTUGUESE.

- Includes five languages: SPANISH, ENGLISH, PORTUGUESE, GERMAN & FRENCH.

- Tension outputs PROTECTED with automatic rearm fuses.

- Optionally a COMMUNICATIONS MODULE WITH DOUBLE OUTPUT, RS232 and RS485,can be added, allowing integration of the system in OPC-SERVER or MODBUS format.

MAIN CHARACTERISTICS

- Intuitive and simplified use.

- Access to independent user and engineer menus, password protected.

- Specific menus for installation and control panel testing.

- Option allows setting detectors in test mode.

- System is backward compatible with earlier detector families, EUROSONDELCO, DURTEX, DIREX & DURTOX.

- Up to 4 groups with single speed ventilation can be programmed or 2 double speed ventilation groups.

- Each module line includes 4 tension free outputs, one 12V bistable alarm tension output and a 12V auxiliary tension fixed output.

DISPLAY INFORMATION IN **ON MODE**

GROUP NUMBER
INFORMATION
GR1-GR2 OR GR4

GROUP GAS
$CO-H_2S-SO_2$
$HCN-NO_2-NO-$
NH_3-CL_2-HCL-
CO_2-O_2-EXP

INFORMATION ON VENTILATION
STATUS PER GROUP. AUTO-STOP-
MANUAL-VENT-1 VENT.2 -G.OFF-
V.CICLI- AND MAX ALTERNATING
WITH THE OTHERS, ONLY WHEN THE
READING MODE IS PROGRAMMED TO
MAXIMUMS.

GR1   CO   AUTO

D01   000PPM   NVE1

DETECTOR NUMBER
FROM 01 TO 16.

DETECTOR GAS
CONCENTRATION IN
REAL TIME, PPM- %
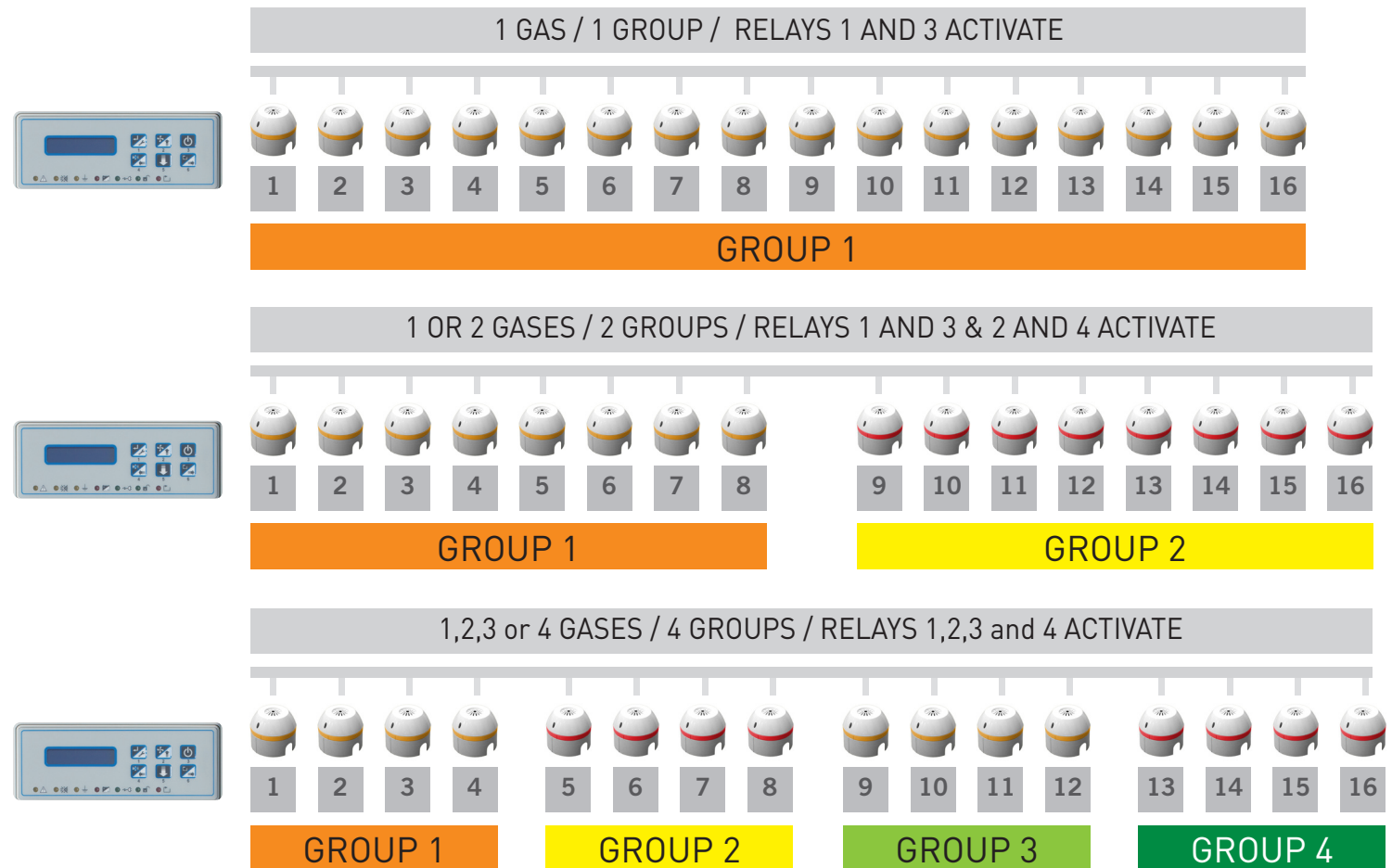LEL- ERROR- FAULT
SENSOR- SATURATION
AND DETECTOR
GENERAL STATUS.

INFORMATION REGARDING
MANEOUVRE LEVELS REACHED OR
INHIBITED DETECTORS.
LVe1-LVe2-NANa-INH

MODULE LINE CONFIGURATIONS: SPANISH STANDARD

Each module line can be divided into 1, 2 or 4 groups/gases (each of which has available 1 relay for actuation) controlling 1, 2 or 4 actuation groups independently.
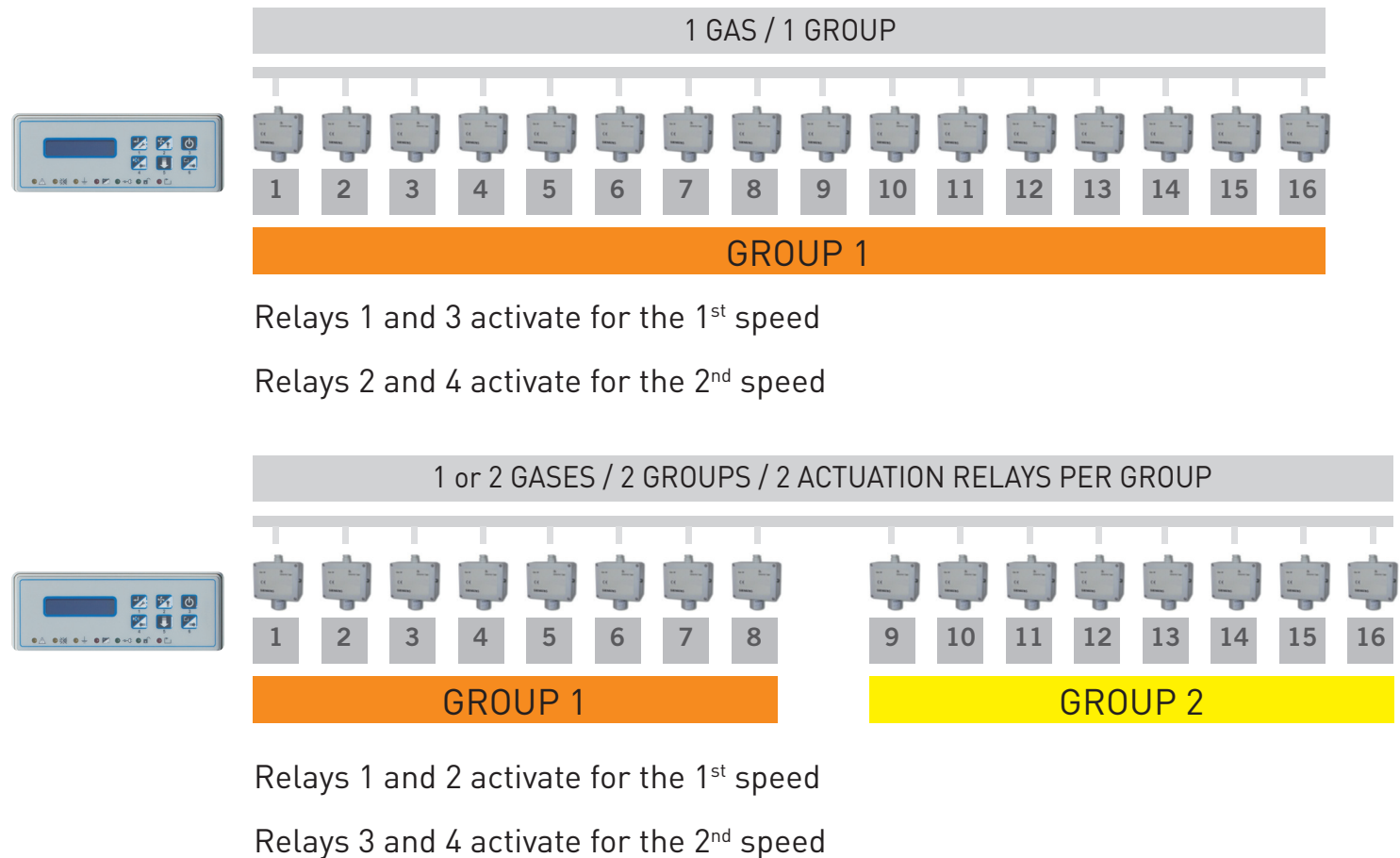
Each group can only be composed of detectors for the same gas (plastic or ATEX housing). The Durpark RS485 detectors are not compatible with the rest of detectors.

POSSIBLE MODULE LINE CONFIGURATIONS

1 GAS / 1 GROUP / RELAYS 1 AND 3 ACTIVATE

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

GROUP 1

1 OR 2 GASES / 2 GROUPS / RELAYS 1 AND 3 & 2 AND 4 ACTIVATE

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

GROUP 1 — GROUP 2

1,2,3 or 4 GASES / 4 GROUPS / RELAYS 1,2,3 and 4 ACTIVATE

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

GROUP 1 — GROUP 2 — GROUP 3 — GROUP 4

# MODULE LINE CONFIGURATIONS: PORTUGUESE STANDARD

Each module line can be divided into 1 or 2 groups. Each group has 2 relays assigned that make it possible to carry out two actuations at two different levels.

Each group can only be composed by detectors for the same gas (plastic or ATEX housing).

POSSIBLE MODULE LINE CONFIGURATIONS

1 GAS / 1 GROUP

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

GROUP 1

Relays 1 and 3 activate for the 1st speed

Relays 2 and 4 activate for the 2nd speed

1 or 2 GASES / 2 GROUPS / 2 ACTUATION RELAYS PER GROUP

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

GROUP 1   GROUP 2

Relays 1 and 2 activate for the 1st speed

Relays 3 and 4 activate for the 2nd speed

8

INSTALLATION EXAMPLE WITH 1 DURGAS 4-20MA INTERFACE AND RS485 DETECTORS

• 1 Interface for 8 4-20mA detectors + 8 detectors compatible with DURGAS

(except Durpark RS485)
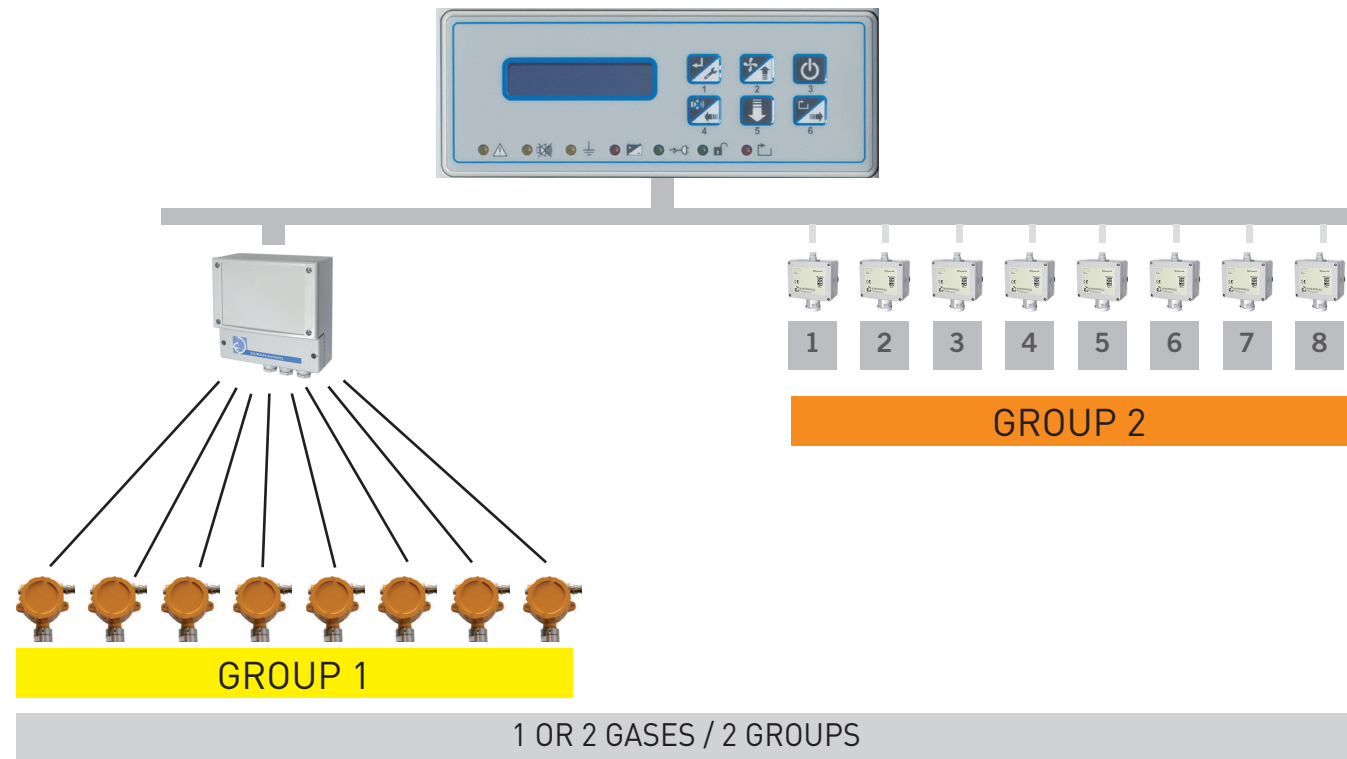
1 2 3 4 5 6 7 8

GROUP 2
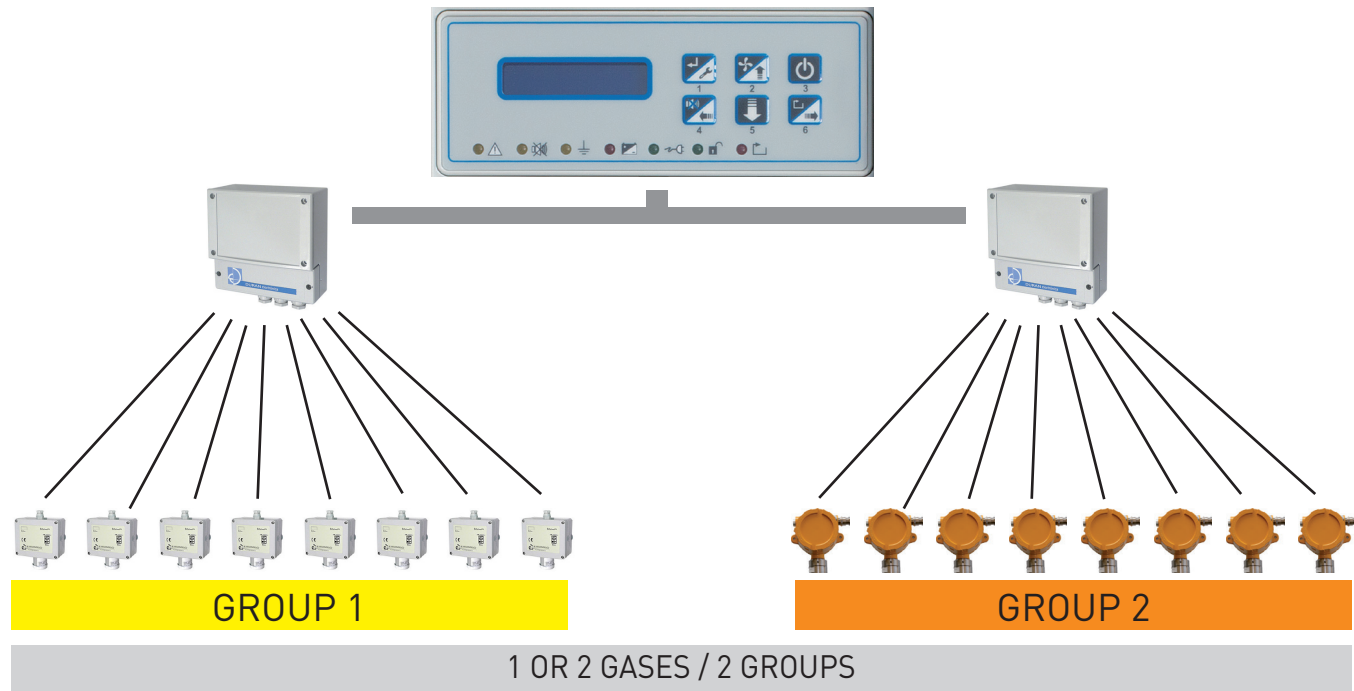
GROUP 1

1 OR 2 GASES / 2 GROUPS

The detectors connected to the interfaces are automatically addressed in accordance to the number of the input to which they are connected.

Connection of the 4-20mA detectors is point to point.

INSTALLATION EXAMPLE WITH 2 DURGAS 4-20MA INTERFACES

• 1 Interface for 8 standard 4-20mA detectors + 1 interface for 8 standard 4-20mA detectors

GROUP 1

GROUP 2

1 OR 2 GASES / 2 GROUPS

The detectors connected to the interfaces are automatically addressed in accordance to the number of the input to which they are connected.

Connection of the 4-20mA detectors is point to point.

REMOTE RELAY OPTIONAL MODULES

- To be connected in the module line loops, in whichever point of the installation desired.

- Very flexible programming and association modes.

- Mirror mode association.

- Associated to detectors (one relay output per detector).

- Combined mode, for example up to 4 modules associated to detectors+1 in mirror mode.

- Four maneouvre outputs + one fuse protected alarm relay.

- Individual optical indication of maneouvre status and communication status.

REMOTE RELAYS MODULE

They are connected in the module line loops, in whichever point of the installation desired, up to a maximum of 5 per loop.

They can act in two ways:

- Associated to detectors, with a relay output per detector (D)

- Associated in Mirror Mode, as clones of the module line relays. (E)

Combination example:
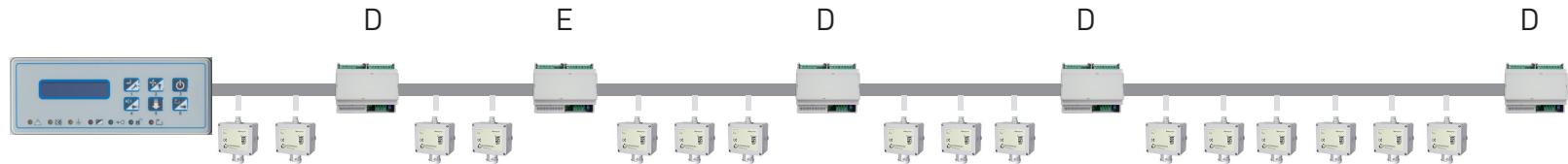
The module line allows programming of any kind of association between the module line relays, the remote module relays and the detectors allowing for example the association of 1 relay to each detector.
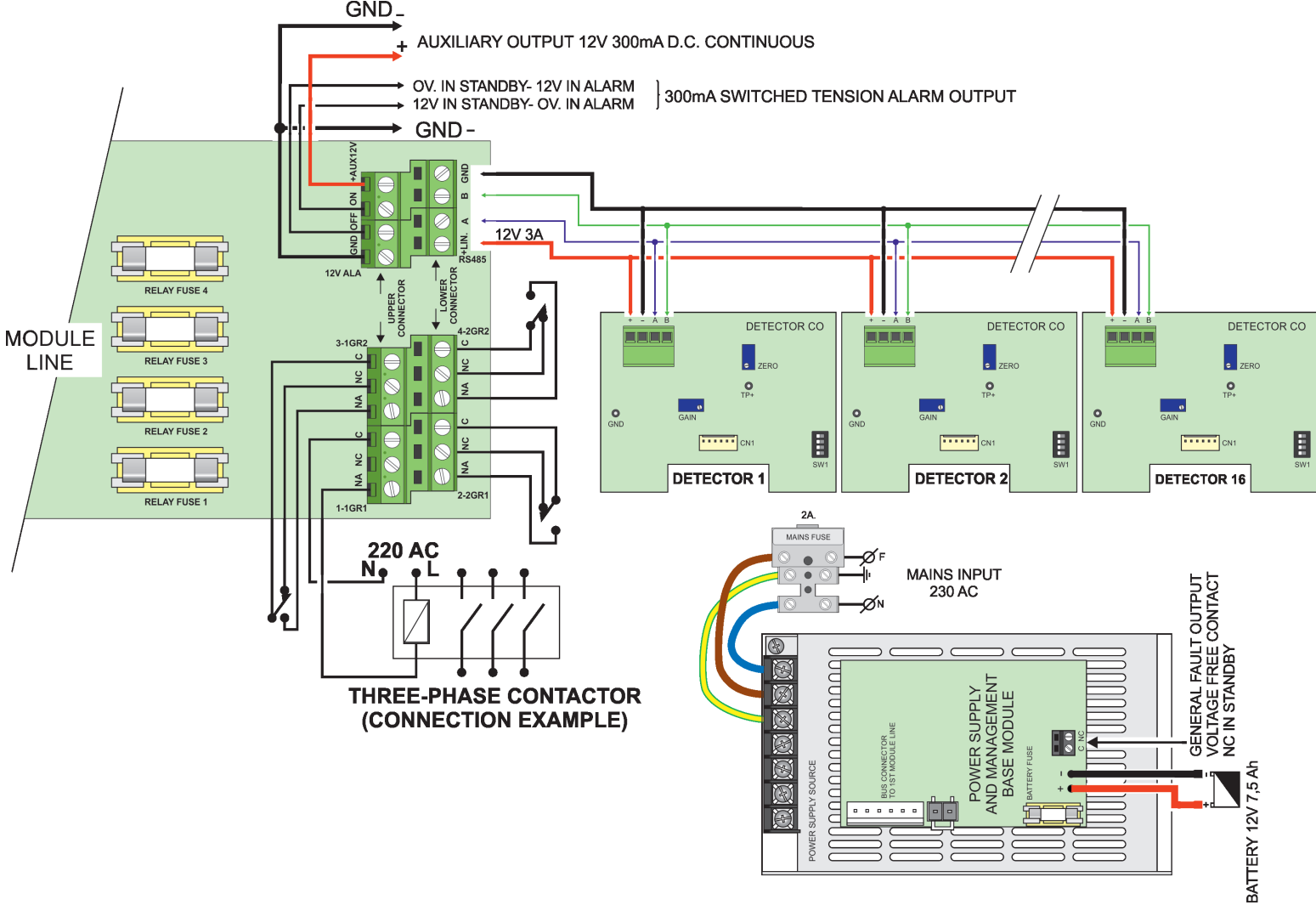
GENERAL CONNECTION AND EURODETECTORS

GND

AUXILIARY OUTPUT 12V 300mA D.C. CONTINUOUS

OV. IN STANDBY- 12V IN ALARM
12V IN STANDBY- OV. IN ALARM } 300mA SWITCHED TENSION ALARM OUTPUT

GND

12V 3A

MODULE LINE

RELAY FUSE 4
RELAY FUSE 3
RELAY FUSE 2
RELAY FUSE 1

UPPER CONNECTOR
LOWER CONNECTOR

DETECTOR CO
DETECTOR CO
DETECTOR CO

DETECTOR 1
DETECTOR 2
DETECTOR 16

ZERO
TP+
GND
GAIN
CN1
SW1

220 AC
N   L

THREE-PHASE CONTACTOR
(CONNECTION EXAMPLE)

2A.
MAINS FUSE

MAINS INPUT
230 AC

POWER SUPPLY SOURCE

BUS CONNECTOR
TO 1ST MODULE LINE

POWER SUPPLY
AND MANAGEMENT
BASE MODULE

BATTERY FUSE

GENERAL FAULT OUTPUT
VOLTAGE FREE CONTACT
NC IN STANDBY

BATTERY 12V 7,5 Ah

DURPARK RS485 DETECTORS CONNECTION
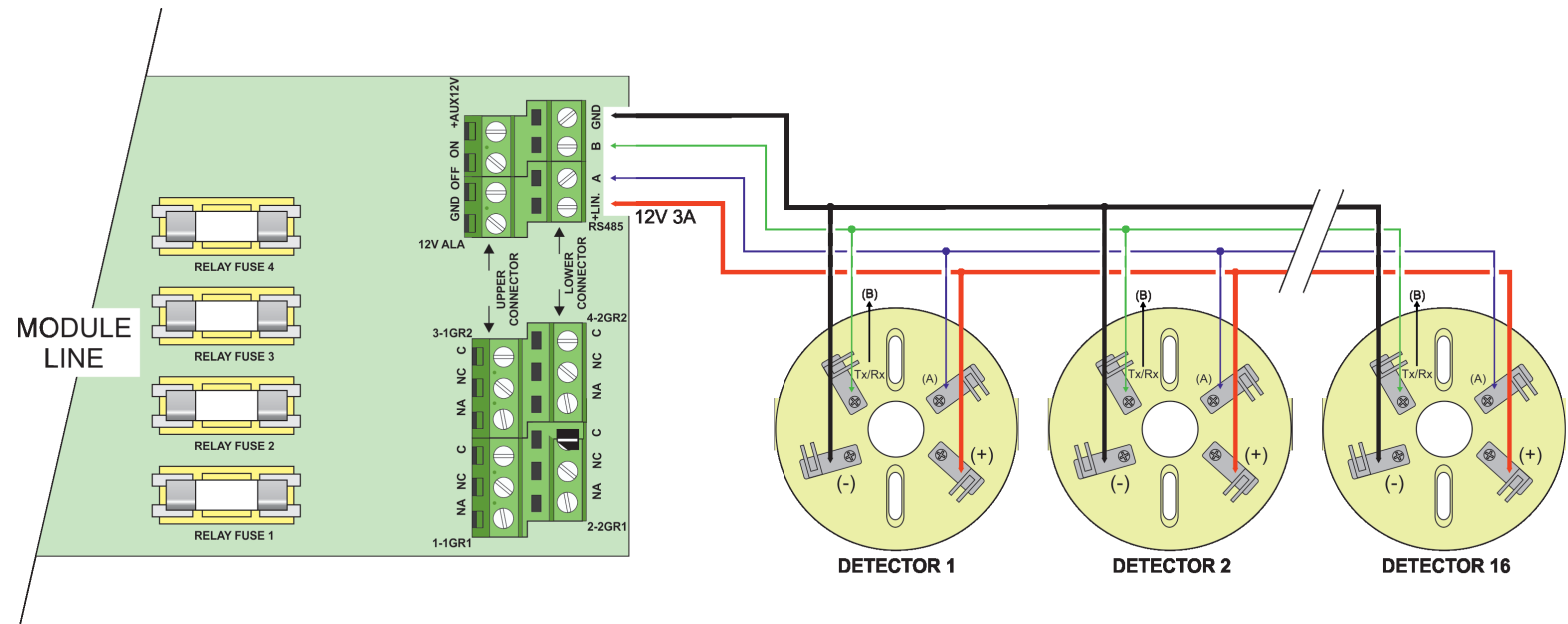
8 EURODETECTORS + 1 DURGAS 4-20MA INTERFACE CONNECTION
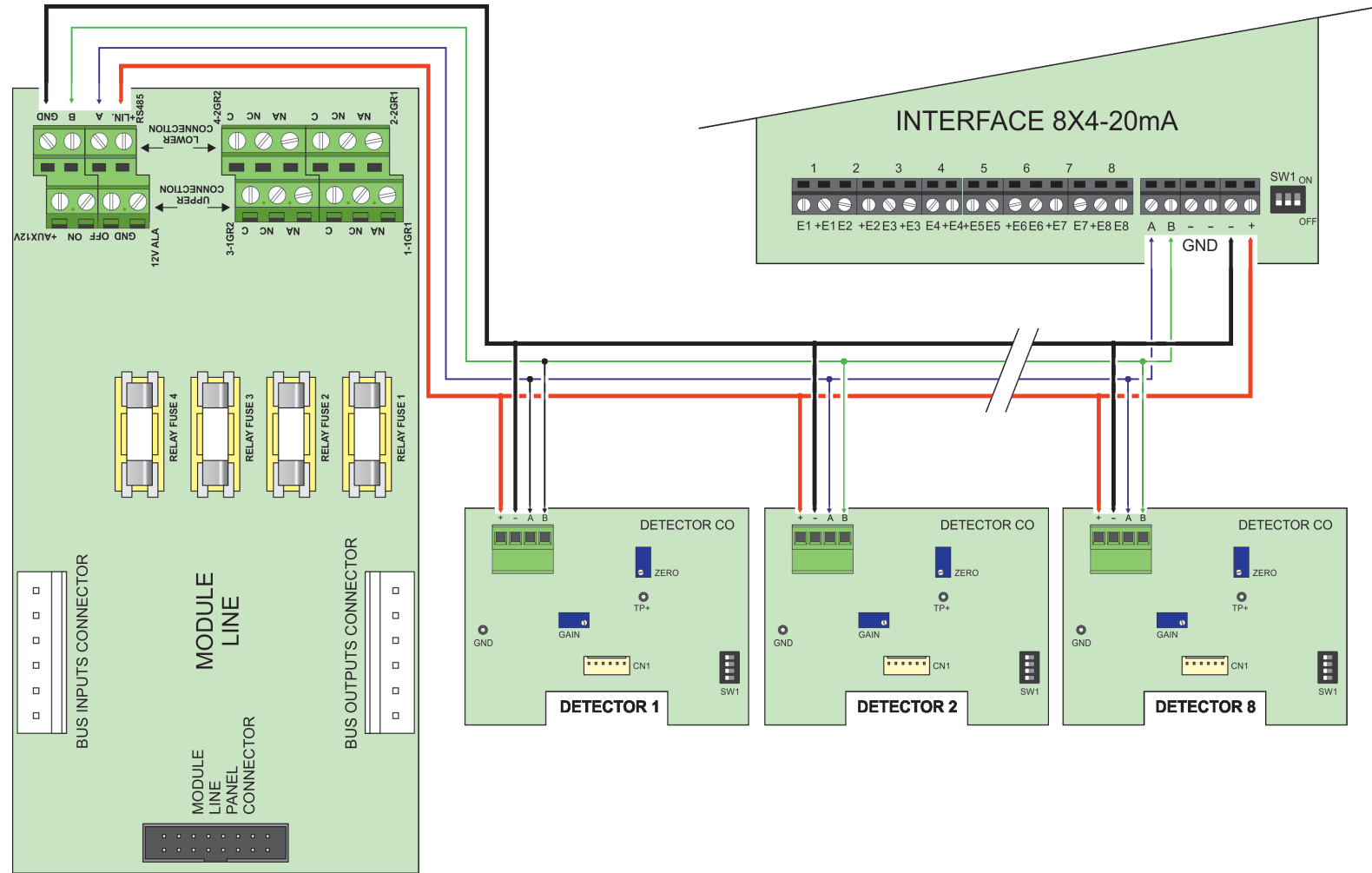
INTERFACE 8X4-20mA

DETECTOR CO

DETECTOR 1

DETECTOR 2

DETECTOR 8

MODULE LINE

BUS INPUTS CONNECTOR

BUS OUTPUTS CONNECTOR

MODULE LINE PANEL CONNECTOR

8 EURODETECTORS + 1 DURGAS 4-20MA INTERFACE +

1 REMOTE RELAY MODULE CONNECTION
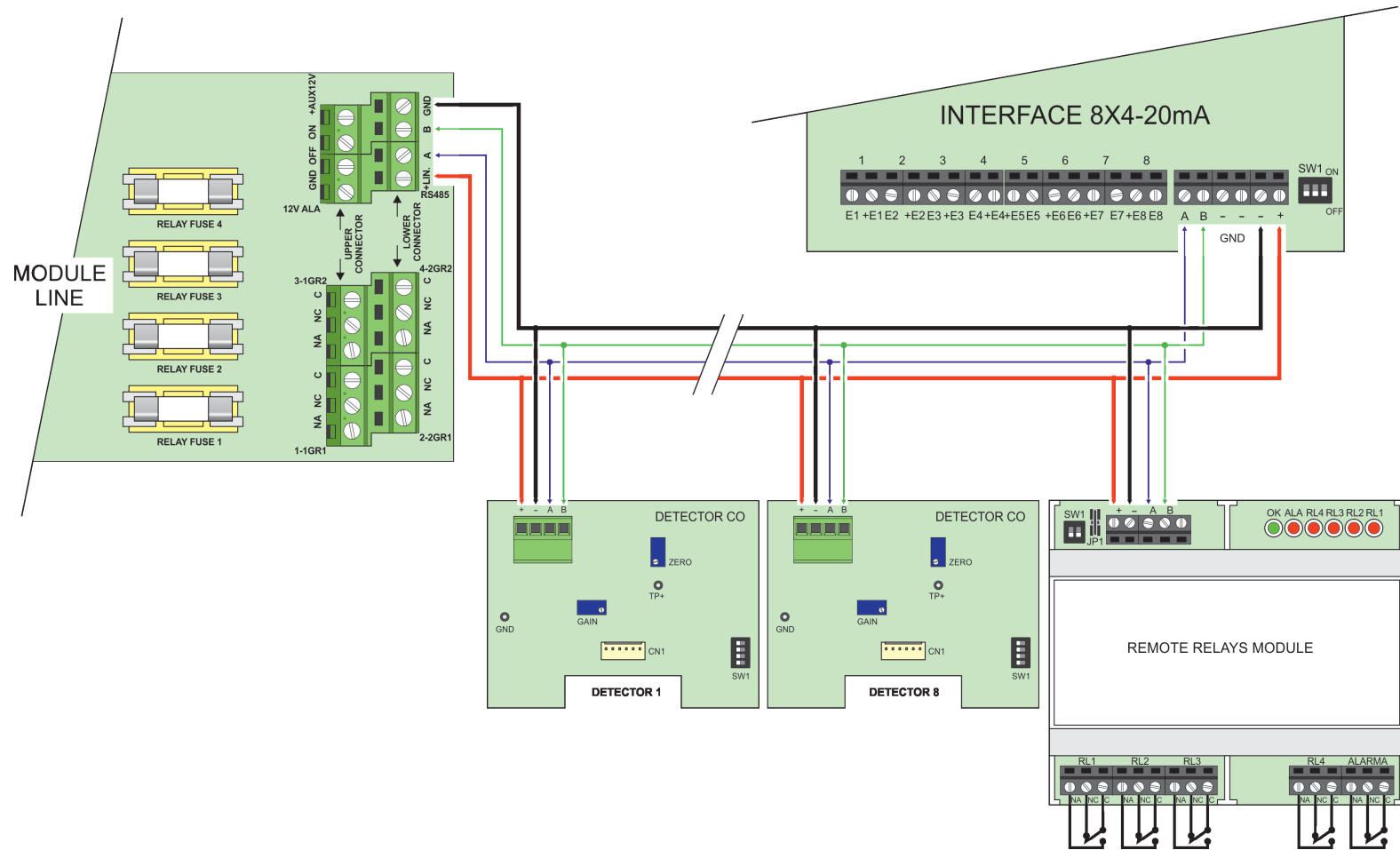
TWO DURGAS INTERFACES WITH 4-20MA DETECTORS CONNECTION

INTERFACE 8X4-20mA

INTERFACE 8X4-20mA

CONNECTION EXAMPLE 4-20mA 2 WIRES

CONNECTION EXAMPLE 4-20mA 3 WIRES

MODULE LINE
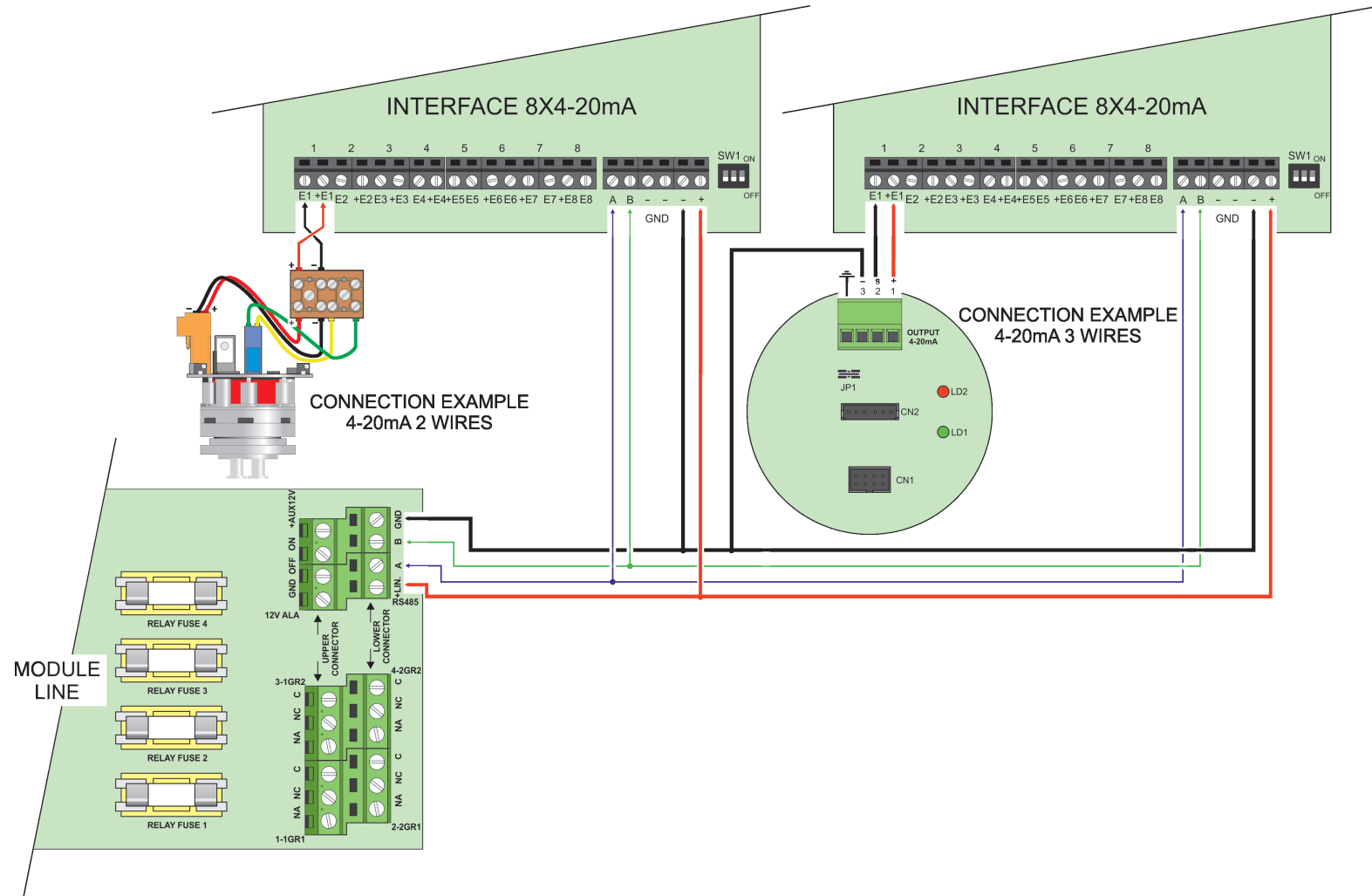
INSTALLATION OF AUXILIARY POWER SUPPLIES

18
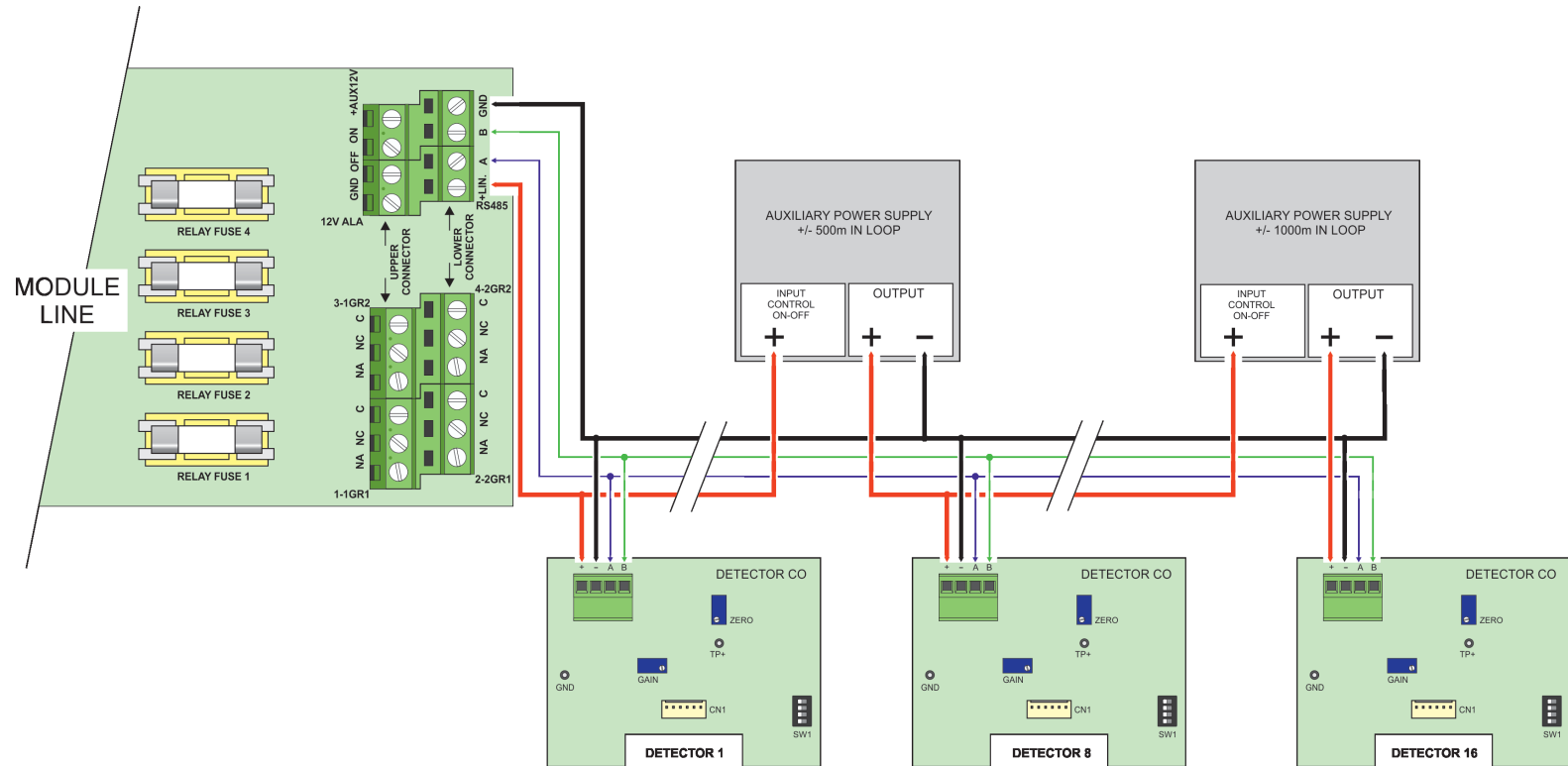
COMPATIBLE DETECTORS

DURGAS uses the following detectors

- **RS485**:

    - New DURPARK RS485 detectors (do not combine with other detector families)

    - Eurodetectors (toxic gases and O_2 using electrochemical technology)

    - DURTOX (toxic gases and O_2 using electrochemical technology)

    - DURTEX (explosive gases using catalytic technology)

    - DIREX (explosive gases and CO_2 using infrared technology)

- **4-20mA** Any standard model (using interface)

DURPARK RS485

CO DETECTOR

NO$_2$ DETECTOR

CO AND NO$_2$ DETECTORS USING LOW COST ELECTROCHEMICAL SENSOR

FOR UNDERGROUND CAR PARKS AND GARAGES

- Designed with a new type of electrochemical sensor without electrolyte.

- Useful life of up to 5 years (CO) and 3 years (NO$_2$) with almost no maintenance.

- Two models available,CO with a range of 0-300 ppm and a resolution of 1 ppm. NO$_2$ with a range of 0-20 ppm and a resolution of 0,5 ppm.

- RS 485 four-wire addressable communication.

- Simple calibration and maintenance procedures, incorporating software with special algorithms that interacts with the detectors and the module line to automatically calibrate zero and gain.

- Special hardware allows verifying CO sensor sensitivity without the need to apply gas.

- Low sensitivity to interferring gases.

DURAN electrónica

	O$_2$	CO	H$_2$S	SO$_2$	NO	NO$_2$	Cl$_2$	H$_2$ TOX	CO$_2$	HCl	NH$_3$	EXP
RESIDUAL WATERS	●	●	●						●		●	●
CAR PARKS		▲				▲						●
WINERIES	●★			●★					●★			
BOILERS	●★	●★				▲★						●★
AIR QUALITY	●★	●★		●★	●	▲★			●★		●★	
PRINTED CIRCUIT BOARDS				●			●			●		
BATTERY ROOMS								■				●★
TANNING INDUSTRY							●			●		
FUEL TANKS												●
FERTILIZERS	●		●						●		●	●
FUMIGATION	●						●		●	●		
SERVICE GALLERIES / UNDERG. CONST. WORKS	●	●	●	●					●		●	●
FARMS	●★		●★						●		●★	●★
GASEOUS FIRE SUPPRESSION	●	●							●			
INCUBATORS	●★								●★			
CHEMICAL INDUSTRY & LABORATORIES	●★	●★	●★	●★	●	▲	●★	■	●	●	●★	●★
GREENHOUSES	●	●							●			
LAUNDRY	●★						●★			●		
METALLURGY	●	●		●			●		●	●	●	●
NUCLEAR	●								●			
PAPER INDUSTRY	●			●			●		●			●
SWIMMING POOLS	●★			●★			●★		●	●		
RECYCLING PLANTS	●											●
FOOD PROCESSING	●★	●★	●★	●★					●★	●	●★	●★
REFRIGERATION / AIR CONDITIONING							●★		●★		●★	
SILOS	●		●			●			●			●
MECHANICAL WORKSHOPS		▲				▲						●★
TEXTILES	●						●			●		
WATER TREATMENT	●		●	●			●	■	●	●		●
ROAD TUNNELS		●				●						●
RAIL TUNNELS	●	●				●			●			●

● DURGAS RS485 /4-20mA DTRS.

▲ DURPARK DURGAS RS485 / 4-20mA DTRS.

■ 4-20mA DTR.

★ STANDGAS PRO LCD (stand-alone)

21

DURAN®
electrónica