

1 Concept of Control

- SHE Control with 24 V- impulse output for controlling electromagnets / solenoid valves (**CA** / **CFR**), pneumatic valves with electric add-on components (**EA** / **EZ**) or pyrotechnical pressure gas generators (**DG**)
- One SHE-group, two signal lines:
 - Line : automatic fire detectors or Fire Alarm Control Panel (FACP)
 - Line : manual call points **RT 2** as
 - a) Main alarm point with indicators operation , alarm , malfunction  and button Reset 
 - b) Secondary alarm point with indicator alarm 
- Reset the alarm / detector using the button in the main alarm point or in the Control
- One potential-free contact (PFC) for alarm forwarding. For controlling external warning devices, wiring to the internal 24 V- output is possible
- A second PFC for alarm / malfunction forwarding (switchable)
- Selectable functions:
 - “Continuous signal” (5 s duration of output pulse, e.g. for actuation of pneumatic valves with electric add-on components **EA** or **EZ**)
 - “Delay” (1 minute delay of the output signal in case of alarm)
 - “Malfunction = Alarm” (alarm upon malfunction of signal line)
 - “2-detector-dependency” (2-detector-dependency for automatic fire detectors in line )
 - “Function selection 2nd PFC” (2nd PFC switches in case of malfunction or alarm)
- Indicators operation , alarm  and malfunction 
- Internal service display for detailed status information for installation and maintenance
- Plastic enclosure, light grey (RAL 7035)



1.1 Option

- **SG:** Enclosure as described above, but with transparent door opening to the left, protection IP54

2 Technical data

2.1 Version

Type	IS 2-4d
Product code (with option SG)	8140 2404 0000 (8140 2404 0002)
Output current	3.75 A (24 V $\overline{=}$ / 90 W)
Current input	0.04 A / 230 V $\sim$
Lead-gel accumulators, VdS approved	2 x 0.8 Ah / 12 V
I / U charge	0.08 A (28.8 V) / 27.4 V
Dimensions in mm (W x H x D)	165 x 155 x 75 200 x 155 x 95 (option SG)

The Control complies with the requirements of the 2006/95/EC and 2004/108/EC Directives (emission: EN 61000-6-3 and EN 55022, immunity: EN 61000-6-2 and EN 50130-4).

2.2 Performance data and characteristics

General

Line voltage supply	230 V $\sim$ / 50 - 60 Hz
Internal voltage supply / standby time	24 V $\overline{=}$ / 72 hrs. (mains failure)
Cable feed through membrane grommets (from below)	4 x M16
Environmental Class 1 / III (to EN 12101-10 / VdS 2581)	-5 °C ... +40 °C
Relative humidity	20 % ... 80 %, non-condensing
Enclosure protection rating (to DIN EN 60529)	IP40 (IP54 with option SG)
Not suitable for use outdoors. Protect from direct sunlight, humidity and excessive formation of dust! Preferably, the installation should be carried out in dry, heated rooms.	

Signal lines

Line monitoring	wire-break, short-circuit
Line  : Automatic fire detectors: Smoke detector / heat detector (RM 2 / TM 2 or RM 3 / TM 3)	20 pieces
or	
Fire Alarm Control Panel (FACP): - Terminating resistor - Alarm resistor	normally open contact 10 k Ω (± 10 %, $\frac{1}{4}$ W) 1 k Ω ... 1.5 k Ω (± 10 %, $\frac{1}{2}$ W)
Line  , manual call points: - Secondary alarm point (RT 2-*) - Main alarm point (RT 2-*-BS)	in total 10 pieces

Output

Rated voltage / current for 5 s

(designed for 12 solenoid valves **CA** or window unlocking devices **CFR**,
17 electric add-on parts **EA** or **EZ** for ventilation valves,
or about 30 pyrotechnical pressure gas generators **DG**)24 V $\overline{\text{=}}$ (+6 V / -4 V) / 3.75 A

Maximum cable cross-section of the supply line

Allowed voltage drop between Control and solenoid

Line monitoring (unbranched common line)

2 x 6 mm² (rigid), 3 x 6 mm² for DG

1 V at full load

wire-break

Allowed cable length with simple and moderately branched arrangement of the solenoids

Current Cross-section	0.3 A (1 CA/CFR)	0.6 A (2 CA/CFR)	0.9 A (3 CA/CFR)	1.2 A (4 CA/CFR)	1.5 A (5 CA/CFR)	1.8 A (6 CA/CFR)	2.1 A (7 CA/CFR)	2.4 A (8 CA/CFR)	3.0 A (10 CA/CFR)	3.6 A (12 CA/CFR)
2 x 1.5 mm ²	145 m	73 m	48 m	36 m	29 m	24 m	21 m	18 m	15 m	12 m
2 x 2.5 mm ²	242 m	121 m	81 m	60 m	48 m	40 m	35 m	30 m	24 m	20 m
2 x 4.0 mm ²	387 m	193 m	129 m	97 m	77 m	64 m	55 m	48 m	39 m	32 m
2 x 6.0 mm ²	580 m	290 m	193 m	145 m	116 m	97 m	83 m	73 m	58 m	48 m

Allowed cable length for each branch line with up to 10 **DG** (each 0.8 - 1.5 Ω / 0.6 - 1 A) connected in series

Current Cross-section	1.0 A (10 DG)
3 x 1.5 mm ²	200 m
3 x 2.5 mm ²	333 m
3 x 4.0 mm ²	533 m
3 x 6.0 mm ²	800 m

Fuses

Primary mains (miniature fuse 5 x 20 mm)

Potential-free contacts (miniature fuse 5 x 20 mm)

F1: T 125 mA

F2, F3: F 2.5 A

Alarm and malfunction forwardingContact load rating PFC-, PFC- (change-over contacts)2.5 A / 30 V $\overline{\text{=}}$ / 230 V $\sim$ **Actuating external warning devices in case of alarm**Multiple tone sounder **MS** / Strobe **BL**24 V $\overline{\text{=}}$ / 55 mA