1. DEVICE REQUIREMENTS

1.1 GENERAL REQUIREMENTS

- fire doors are construction products covered by the harmonized product standard EN 16034:2014-11. Therefore, they must be marked with the "CE" mark, and the condition for placing them on the market is that the manufacturer issues a Declaration of Performance for them, which indicates the intended use in the construction facility,
- fire doors should have the parameters specified in the Declaration of Performance for at least the following essential characteristics for fire-resistant products compliant with the product standards EN 16034:2014-11 and EN 13241+A2:2016-10:
  - fire resistance,
  - the ability to release and the durability of the ability to release,
  - self-closing,
  - self-closing degradation resistance,
  - wind load resistance;

1.2 REQUIREMENTS FOR INSTALLATION/INSTALLATION CONDITIONS

- can be installed in building partitions made of various materials,
- low height of the lintel required for installation,
- indoor and outdoor use,
- for outdoor locations, can be mounted on spacers brackets to avoid dismantling the building's thermal insulation layer,
- Can be installed in tandem with a gate/roller shutter without fire resistance;

1.3 REQUIRED DEVICE PARAMETERS

- range of fire resistance classes according to PN-EN 13501-2:2023: **EW120/E120**, **EW60/E120**, **EW60/E90**,
- resistance to wind load according to PN-EN 12424:2002: **1**, **2**, **3** or **4**,
- Utility category (number of duty cycles) according to EN 16034:2014-11: **C0**, **C1** or **C2**,
- anti-corrosion according to PN-EN ISO 12944-2:2018: **C1**, **C2**, **C3**, **C4** or **C5**,
- gate curtain weight: up to **2** kg/m^2;

1.4 REQUIREMENTS FOR THE DEVICE'S CONSTRUCTION/EQUIPMENT

- exposed elements of the gate (casings, covers, guides, bottom strip) with the possibility of finishing the surface in any color from the RAL palette or in the stainless version,
- possibility of connecting a wide range of electrical equipment, such as fire alarm systems, gate position monitoring, access control,
- In the event of mechanical damage to the jacket, it should be possible to repair / regenerate it without the need to dismantle the entire winding shaft with the coat,
- the door manufacturer should provide an extended technical description of the device (in p. 2 of this Fire Protection Equipment Characteristic) and the Instructions for Use, Operation and Maintenance to ensure proper assembly, installation, use, maintenance and disassembly in a safe manner;

2. DEVICE DESCRIPTION

The MARC-EVO type fire curtain door consists of the following basic components: gate shell, winding shaft, shaft brackets, guide system, ballast strip, housing and drive.

The roll-up coat of the MARC-EVO curtain door is made of horizontal strips of fabric with the catalog number **KMM1** and **KMM1+** (for classes: **EW120/E120, EW60/E120, EW60/E90,** and **EW itself**), **or KMM3, KMM3+** (for classes: **E120, E90**). The mentioned materials differ in color, the **material of KMM1 and KMM1+** is **black.** On the other hand, the material **of KMM3** and **KMM3+** is **gray.** Individual strips of fabric are connected along the horizontal edges with an overlap and sewn together with three stitches at a distance of 10 mm, with a thread with the catalog number KMM2. It is also possible to connect fabrics vertically to the overlap, using the same method of sewing.

The coat is attached to the winding shaft with a steel strip made of galvanized steel sheet of DX51D+Z275 grade according to the PN-EN 10346:2015-09 standard and a thickness of 1.5 mm.

Along the closing edge of the jacket there is a lower ballast strip made of galvanized steel sheet sections of the DX51D+Z275 grade according to the PN-EN 10346:2015-09 standard, 0.7 - 1.0 mm thick.

On both vertical edges of the jacket, chains are fixed with the help of M6 hexagonal head screws, an extended washer and an M6 hexagon nut, with a spacing of no more than 50 cm.

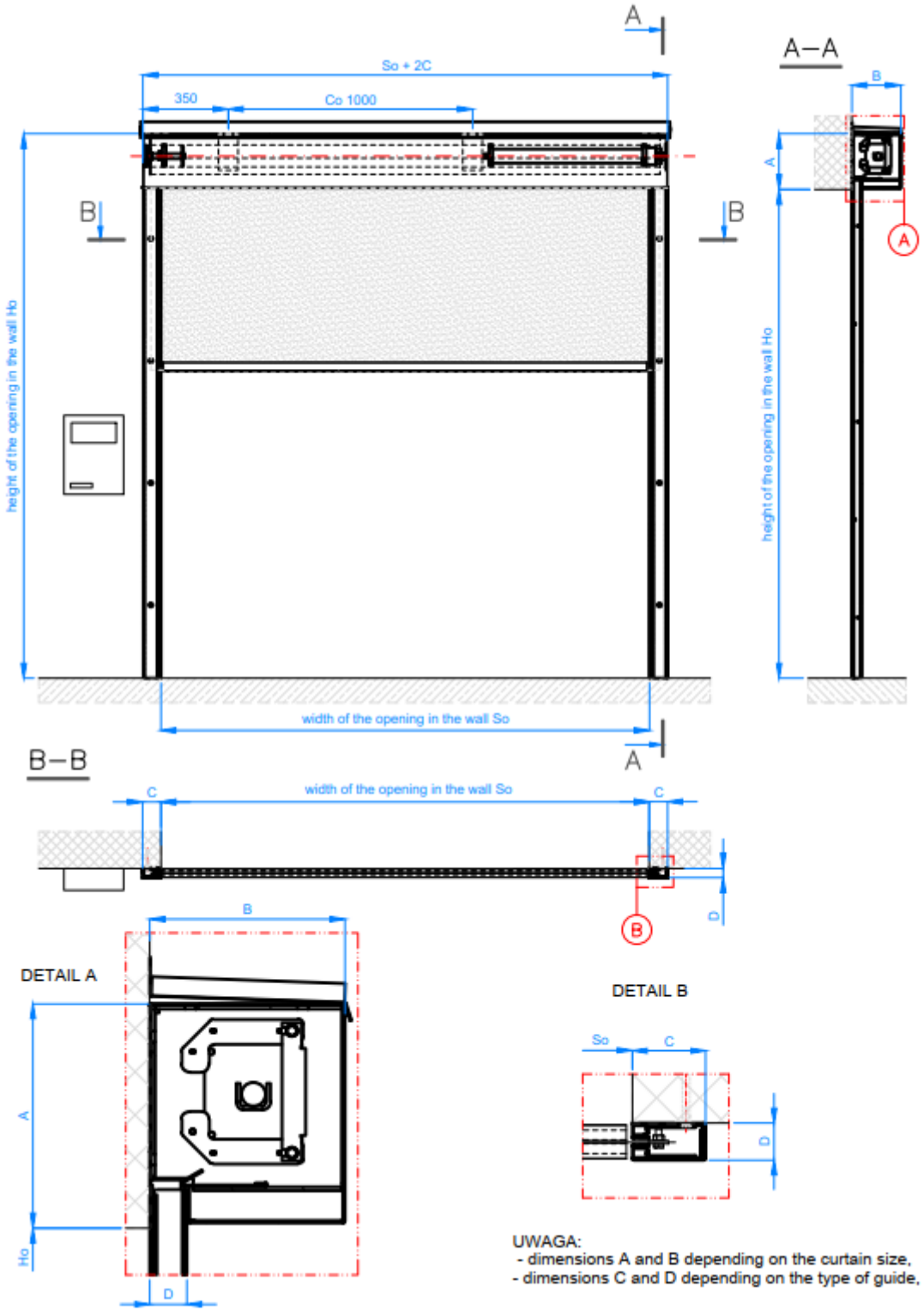
The steel shaft with a diameter of 88.9 mm or 127 mm, depending on the size of the curtain, is finished on one side with a steel journal with a diameter of 20, 30 mm, depending on the size of the gate, embedded in a UCF bearing attached to a steel shaft support. On the other hand, the shaft is fixed to the shaft support by a steel handle and an electric internal (tubular) drive unit of the VIC type.

Both shaft supports are made of galvanized steel sheet of DX51D+Z275 grade according to PN-EN 10346:2015-09 and 4.0 mm thick. The rear and front housing components are attached to the brackets using 4.0 mm steel rivets. The elements of the housing are made of properly profiled galvanized steel sheet of DX51D+Z275 grade according to the PN-EN 10346:2015-09 standard, with a thickness of 0.75 mm.

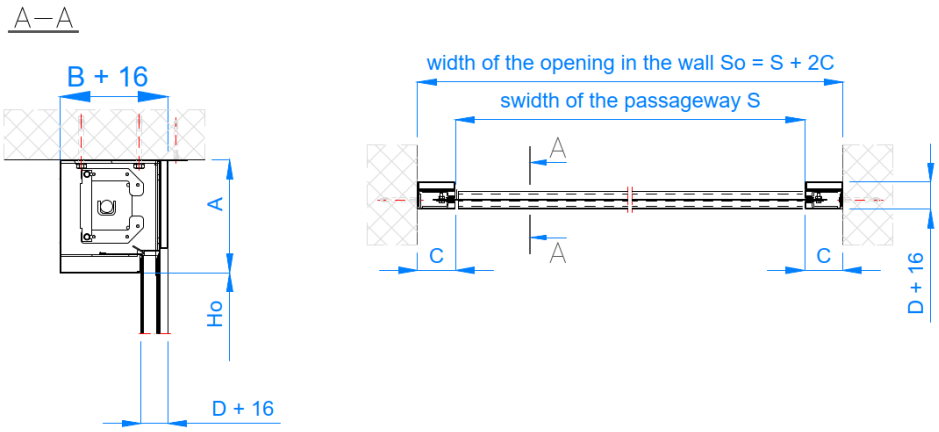
The slide assemblies are made of main sections made of properly profiled galvanized steel sheet of DX51D+Z275 grade according to the PN-EN 10346:2015-09 standard, thickness 2.0 mm. External and internal guide elements made of properly profiled galvanized steel sheet 1.5 mm thick are attached to the main sections with steel rivets with a diameter of 4.0 mm, at a distance of no more than 20 cm.

For electrically operated curtain doors, the wound jacket is held in the open position by a brake or a self-locking drive transmission. In the event of a fire hazard signal, the jacket is released and moved to a closed position by means of a drive or by gravity. Reopening is carried out by means of a drive.

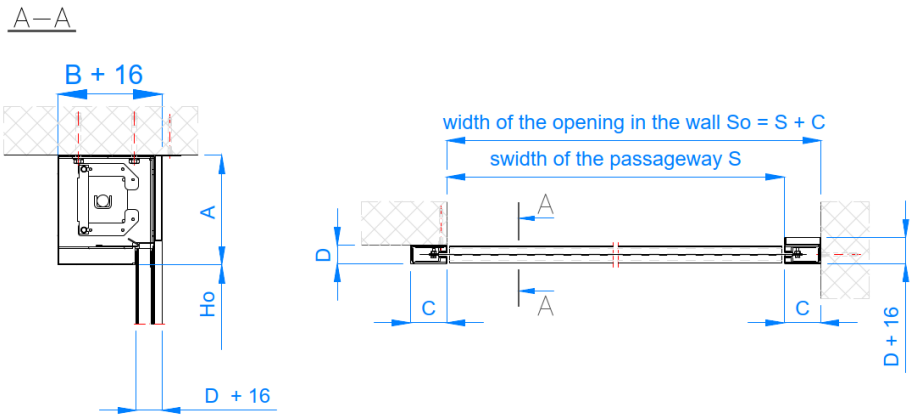
3. DRAWING DOCUMENTATION



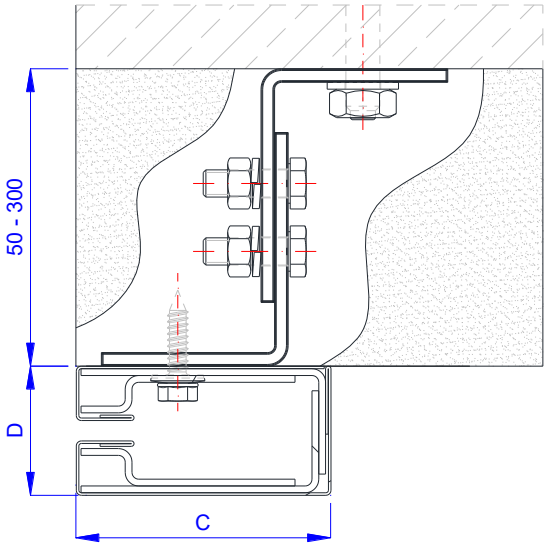
Rys. 1 – MARC-K EVO type fire curtain door with electric internal drive



Rys. 2 – MARC-EVO curtain door in a corridor (recess) installation - missing both jambs and lintel



Rys. 3 – MARC-EVO curtain door in mixed installation - missing one jamb and lintel



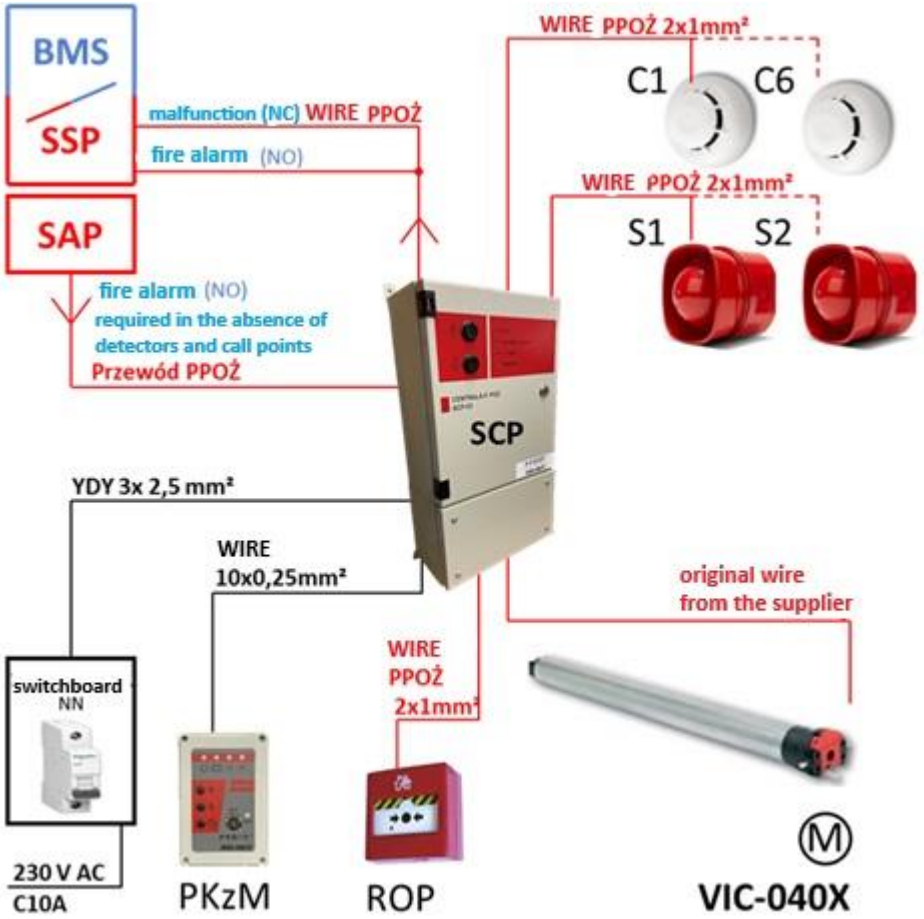
Rys. 4 – Guides mounted on spacer brackets

4. DEVICE SPECIFICATION

Name	**Curtain Gate**
Type	**MARC-EVO**
Fire resistance class [wg PN-EN 13501-2:2023]	**Małkowski-Martech S.A.**
Producer	**(EW120 / E120), (EW60 / E120), (EW60 / E90), E120, E90**
Certyfikat Stałości Właściwości Użytkowych	**2775-CPR-023**
User Manual Document	**Instructions for Use, Operation and Maintenance**

DESIGN AND QUALITY PARAMETERS	(**S** – *Standard,* **O** – *Optional,* **Z** – *on request*)	
Weight of the coat	**1,9** [kg/m^2]	
Coat thickness	**1,5** [mm]	
Dimensions [W x H of the construction opening in the partition]	< 7 **000** x **10 000** [mm] (**10 000** do **10 000**) x **10 000** [mm] > **10 000** x **10 000** [mm]	**S** O Z
Required minimum headboard height	**200** [mm]	**S**
Location of the buildings	**Internal** **exterior** [installation inside the building] **exterior** [outdoor installation]	**S** **S** **S**
Building conditions	**wall/ceiling mounting** **corridor [**recessed] installation **mixed** installation [wall-mounted - recessed] **intermediate installation** [on spacers]	**S** **S** **S** **S**
Tandem gate installation	**with gate or roller shutter without fire resistance**	O
Utility category [wg EN 16034:2014-11]	**C0** [1 – 499] **C1** [500 – 9 999], **C2** [10 000 – 49 999]	**S** O
Resistance to wind load [wg PN-EN 12424:2002]	**1** [≤ 300 Pa] **2** [≤ 450 Pa]	**S** O
Anti-corrosion [wg PN-EN ISO 12944-2:2018]	**C1**, **C2**, **C3** **C4**, **C5**	**S** O
Stainless version [wg PN-EN ISO 10088-1]		Z
Cassette housing and guide colour	**galvanized** **RAL 7016, 7035, 9002, 9010** **dowolny RAL**	**S** **S** O
Drive Type	**Electric** [internal]	**S**
Fire alarm control panel [wg PN-EN 54-2:1997+AC:1999+A1:2006]	**with a buffer power supply, prepared to work with a field fire alarm system and/or local smoke/temperature detectors.**	O
Electrical Components [available in a set with fire alarm control panel]	**Technical key button** detectors [smoke, temperature, smoke/temp.] **Siren** [acoustic, optical-acoustic] **Opening and/or closing sensor** **Electromagnetic holder**	**S** O O O O

5. ELECTRICAL DIAGRAM



Rys. 5 – Control system for MARC-EVO with internal (tube) drive 24 V DC

N.o.	Marking in the drawing	Element Type	Symbol element
1.	SCP	Conventional Fire Control Panel	SCP-03 Extended version
2.	C	Conventional Optical Smoke Detector & Base	ID100 + EB0010
3.	S	Signalization acoustics	SPP-110
4.	PKzM	Key switch with monitoring	SX
5.	M	Tubular drive 24 V DC	VIC-040X
6.	ROP	Manual Fire Alarm, Indoor	IRIS IC0020

N.o.	Signal designation	Signal Type	Resting
1.	Fire alarm	Input signal - starting the control panel in fire alarm mode	NO
2.	Failure	Output signal - confirmation of control failure	NC
3.	Alarm	Output signal - fire control alarm confirmation	NO