

<b>MAŁKOWSKI MARTECH</b> Czołowo, ul. Leśna 57, 62-035 Kórnik tel. +48 61 222 75 00 fax. +48 61 222 75 01 email: biuro@malkowski.pl, www.malkowski.pl	<b>MOBILE SMOKE CURTAIN</b> type: <b>MARC-Kda</b>	number: <b>MM_Kda-1en</b>
	FIRE PROTECTION DEVICE CHARACTERISTICS	revision: <b>1</b> 10/2020

## 1. DEVICE REQUIREMENTS

### 1.1 GENERAL REQUIREMENTS

- smoke curtains are construction products defined in the EN 12101-1:2005+A1:2006 harmonised product reference standard. Therefore, they must be labelled with the “CE” mark, and the prerequisite for marketing them is the manufacturer’s obligation to issue a related Declaration of Performance which indicates their intended use in a building,
- the Declaration of Performance issued for fire protection gates should have parameters specified for at least one of the following essential fireproof product characteristics in compliance with the product reference standards, i.e. EN 12101-1:2005+A1:2006:
  - fire resistance,
  - smoke permeability,
  - response delay,
  - reliability,
  - unfolding safety;

### 1.2 REQUIREMENTS FOR BUILDING/INSTALLATION CONDITIONS

- possibility to install in construction partitions made of various materials,
- both indoor and outdoor application,
- application as a smoke zone separation without any dimensional constraints,
- possibility to create a smoke separation of any given shape,
- minimising (below values specified in EN 12101-1:2005+A1:2006) sizes of gaps and peripheral spaces,
- shaft box size limited to 16 x 16 cm;


### 1.3 REQUIRED DEVICE PARAMETERS

- fire resistance class range as per EN 12101-1:2005+A1:2006: **D30, D60, D90, D120, DA, DH30, DH60**,
- range of mobile smoke curtains: **ASB1, ASB2, ASB3, ASB4**,
- resistance to wind load as per PN-EN 12424:2002: **1** or **2** (with guides),
- smoke permeability through the curtain: up to **10 m<sup>3</sup>/h/m<sup>2</sup>**
- rolling curtain weight: up to **1 kg/m<sup>2</sup>**;

### 1.4 REQUIREMENTS FOR DEVICE DESIGN/EQUIPEMENT

- exposed elements of the curtain (enclosure, bottom strip, possible guides) come with the possibility of finishing the surface in any colour from the RAL palette or come in a stainless version,
- possibility of modular combination of single curtains, also to create an arch-like design,
- possibility to place graphic designations on the curtain surface,
- possibility to create escape passages through the curtain;
- in case the rolling curtain is mechanically damaged, it should be possible to repair/regenerate it without dismantling the entire shaft with the curtain,
- the gate manufacturer should provide an extended technical description of the device (in section 2 of this Fire Protection Device Characteristics) as well as the Application, Operation and Maintenance Manual to ensure correct and safe assembly, installation, operation, maintenance and disassembly



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## 2. DEVICE DESCRIPTION

The mobile smoke curtain type MARC-Kda consists of the following basic components: curtain, curtain shaft, shaft brackets, electric drive and enclosure. It can also be equipped with guides.

The curtain is made of a non-flammable glass-fibre woven fabric, in grey-silver colouring as a standard. A bottom (loading) profile is attached to the lower curtain edge, which is available in various shapes, dimensions and colours - tailored to Customer's needs.

The upper curtain edge comes with a pocket accommodating a steel bar. The bar is used to attach the curtain to a specially profiled shaft tube.

The curtain shaft is hung on side brackets made of steel sheet, grade DX51D+Z225 as per PN-EN 10346:2015-09, thickness 5,0 mm - on one side, it is attached by a bearing assembly and, on the other side, by a steel handle and electric drive.

The drive unit is located inside the shaft tube, and its type depends on the smoke curtain size and category. Side brackets are connected with each other using a top profile made of steel sheet, grade DX51D+Z225 as per PN-EN 10346:2015-09, thickness 3,0 mm. Steel guard supports are attached to the top profile, with correct spacing ensured. The curtain shaft box comes with three guards, i.e. the front, rear and lower guard. Each guard is riveted to the shaft brackets and guard supports. The guards are made of galvanised metal sheet, grade DX51D+Z225 as per PN-EN 10346:2015-09, thickness 0,7 – 1,0 mm.

The width of a standard type MARC-Kda mobile smoke curtain is 5000 mm. Individual modules can be used to create a line of curtains of unlimited dimensions, also as an arch-like design.



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### 3. DRAWINGS

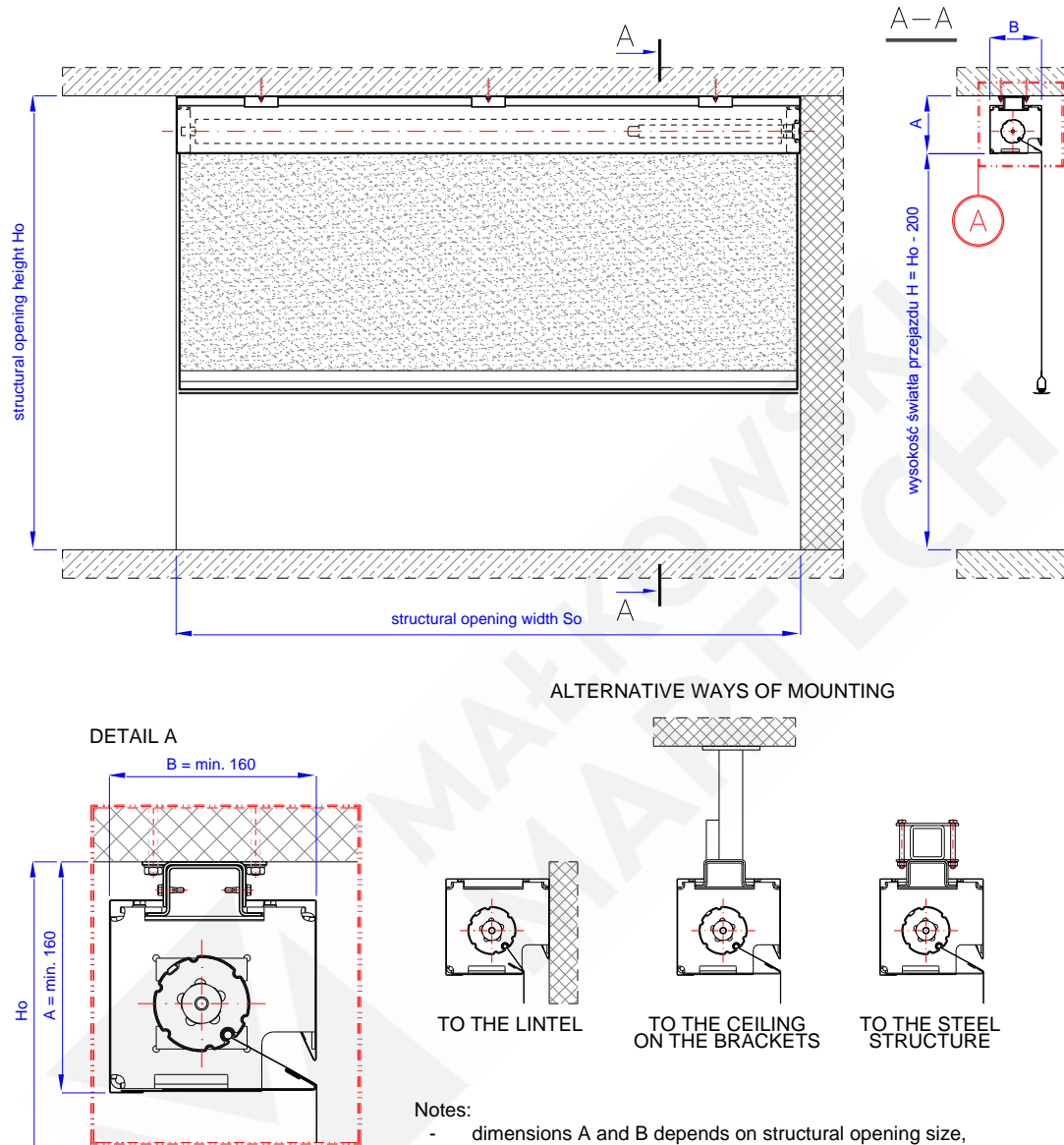


Fig. 1 – Mobile smoke curtain MARC-Kda

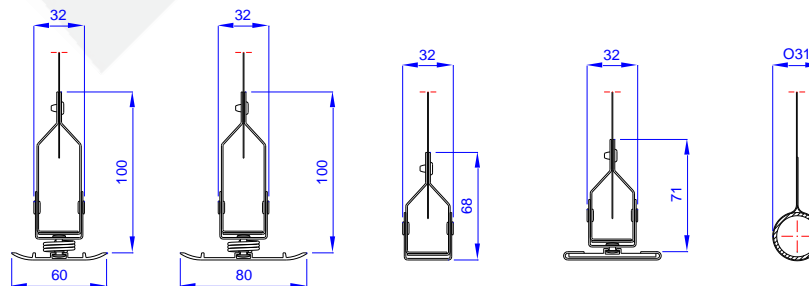


Fig. 2 – Bottom (loading) profile design examples



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#### 4. DEVICE SPECIFICATION

Name	<b>Mobile smoke curtain</b>
Type	<b>MARC-Kda</b>
Fire-resistance class [as per EN 12101-1:2005+A1:2006]	<b>D 30, D 60, D 90, D 120, D 155 DA, DH 30, DH 60</b>
Manufacturer	<b>Małkowski-Martech S.A.</b>
Certificate of Constancy of Performance	<b>2434-CPR-0001 2434-CPR-0002</b>
Operating manual document	<b>Use, Operation and Maintenance Manual</b>

STRUCTURAL AND QUALITY-RELATED PARAMETERS	(S – standard, O – option, Z – on request)	
Rolling curtain weight	0,6 [kg/m <sup>2</sup> ]	
Rolling curtain thickness	1,0 [mm]	
Dimensions [clear opening, W x H]	< 5 000 [mm] > 5 000 [mm]	S O
Minimum lintel clear height	160 [mm]	S
Installation location	internal	S
Installation requirements	wall-mounted / ceiling-suspended intermediate installation [on hangers] installation on steel structure mixed installation [combination of the above]	S S S S
Resistance to wind load [as per PN-EN 12424:2002]	1 [≤ 300 Pa] 2 [≤ 450 Pa] – for version equipped with guides	S O
Response delay [average speed of achieving the operating position]	0,06 – 0,15 [m/s]	S
Smoke permeability [at. 200°]	< 10 [m <sup>3</sup> /h/m <sup>2</sup> ]	S
Stainless version [as per PN-EN ISO 10088-1]		Z
Covers colour	galvanized RAL 7035, 9002, 9010 any RAL palette	S S O
Drive unit type	electric [internal]	S
Controller - fire alarm control panel [as per PN-EN 54-2:1997+AC:1999+A1:2006]	w/UPS, pre-wired with the field fire alarm system and/or local smoke/heat detectors	O
Electrical components [available only with a fire alarm control panel]	technical key switch detectors [smoke or heat, smoke and heat] signalling device [sounder, optical]	S O O



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## 5. ELECTRICAL DIAGRAM

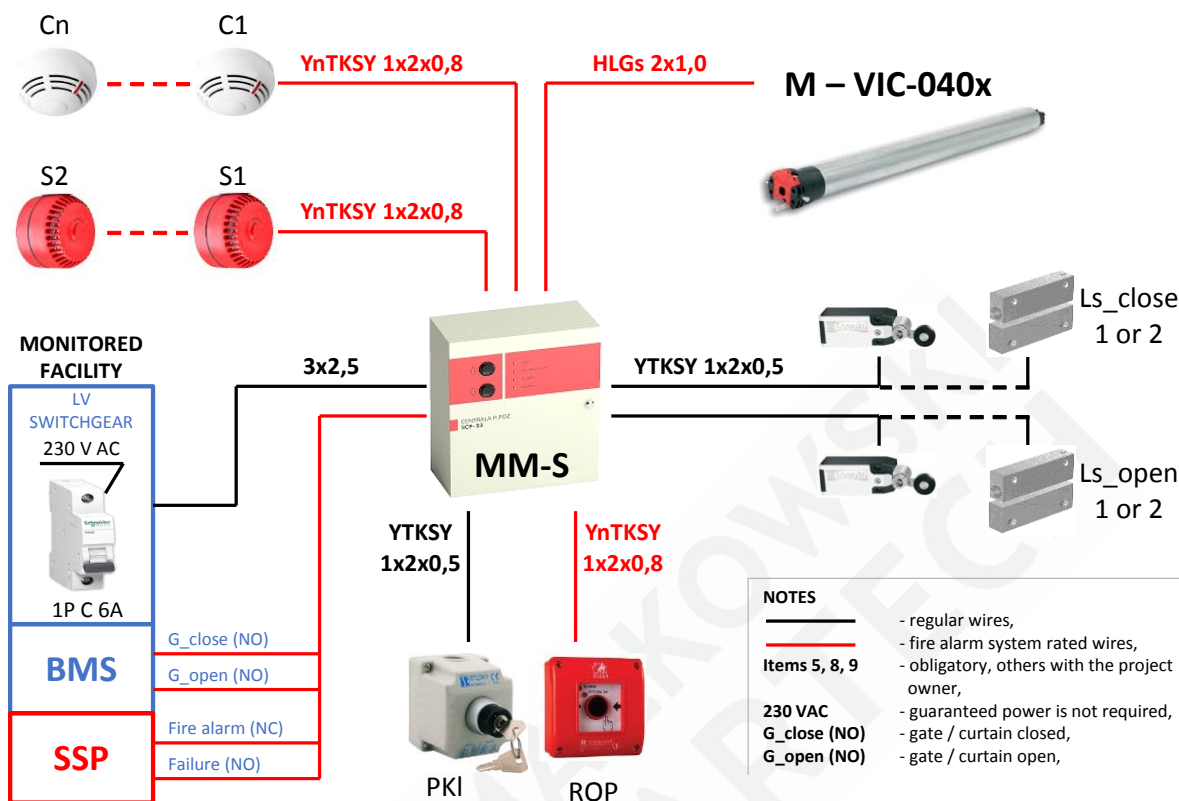


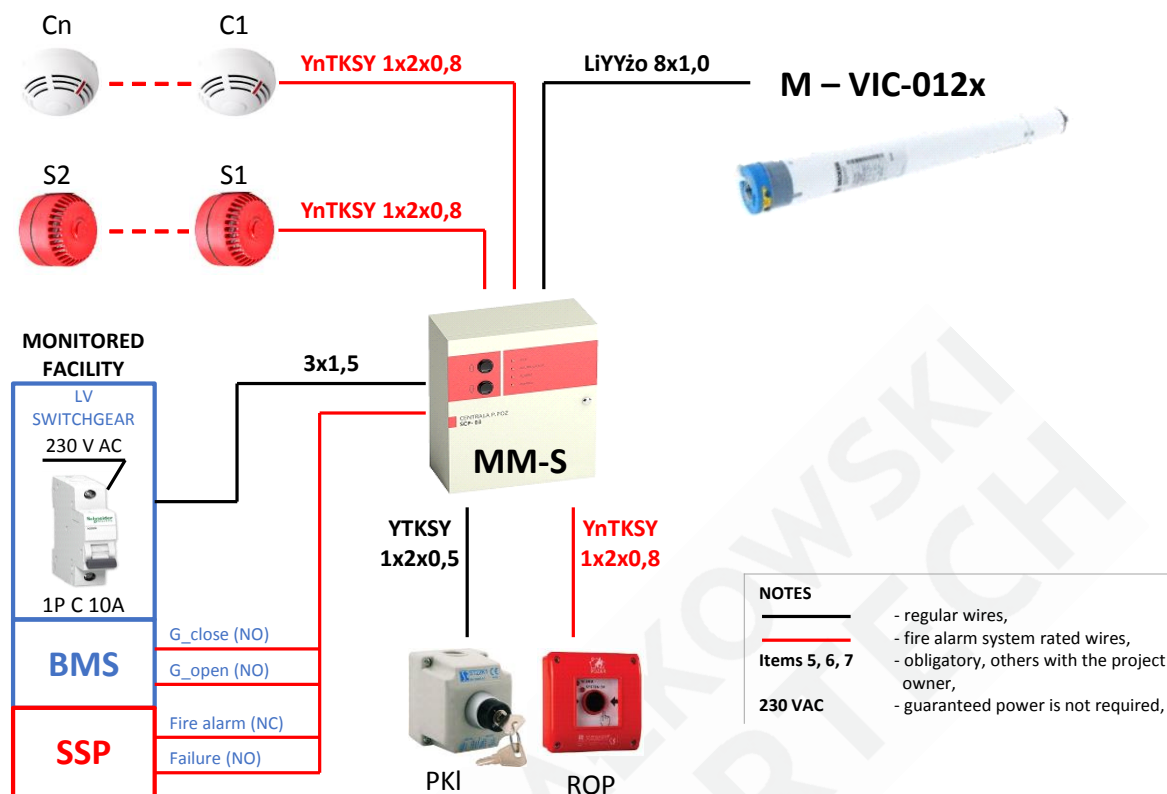
Fig. 5 – MARC-Kda control system with internally-mounted 24 V DC drive unit

No.	Figure item code	Item type	Item name	Item code	Rec. qty	Notes
1	C1 - Cn	point fire detector	optical smoke detector	ID100	2	model ID100, is recommended, max. 6 pcs.
			class A1R heat detector	ID200	2	
			some and heat	ID300	2	
2	C1 - Cn	detector receptable	standard fire detector receptacle	EB0010	2	qty = detector qty
3	ROP	manual call point	standard manual call point	ROP OP1	1	max. 10 pcs.
4	S1, S2	signalling device	fire alarm sounder, low base	SPP-100	1	max. current 200 mA
5	M	electric drive	internal (tubular)	VIC-040x	1	
6	Ls_close	limit switch „1” mag. sensor „2”	mechanical limit switch, magnetic reed relay switch	KB F1 S11 MS-240-S45	1	application option, selection 1 or 2
7	Ls_open	limit switch „1” mag. sensor „2”	mechanical limit switch, magnetic reed relay switch	KB F1 S11 MS-240-S46	1	
8	PKzM	console	remote console	PKzM	1	
9	MM-S	controller	standard fire alarm control panel	MM-S	1	





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**Fig. 6 – MARC-Kda control system with internally-mounted 230 V AC drive unit (gravity closing)**

No.	Figure item code	Item type	Item name	Item code	Rec. qty	Notes
1	C1 - Cn	point fire detector	optical smoke detector	ID100	2	model ID100, is recommended, max. 6 pcs.
			class A1R heat detector	ID200	2	
			some and heat	ID300	2	
2	C1 - Cn	detector receptable	standard fire detector receptacle	EB0010	2	qty = detector qty
3	ROP	manual call point	standard manual call point	ROP OP1	1	max. 10 pcs.
4	S1, S2	signalling device	fire alarm sounder, low base	SPP-100	1	max. current 200 mA
5	M	electric drive	Internal (tubular)	VIC-012x	1	
6	PKzM	console	remote console	PKzM	1	
7	MM-S	controller	standard fire alarm control panel	MM-S	1	

