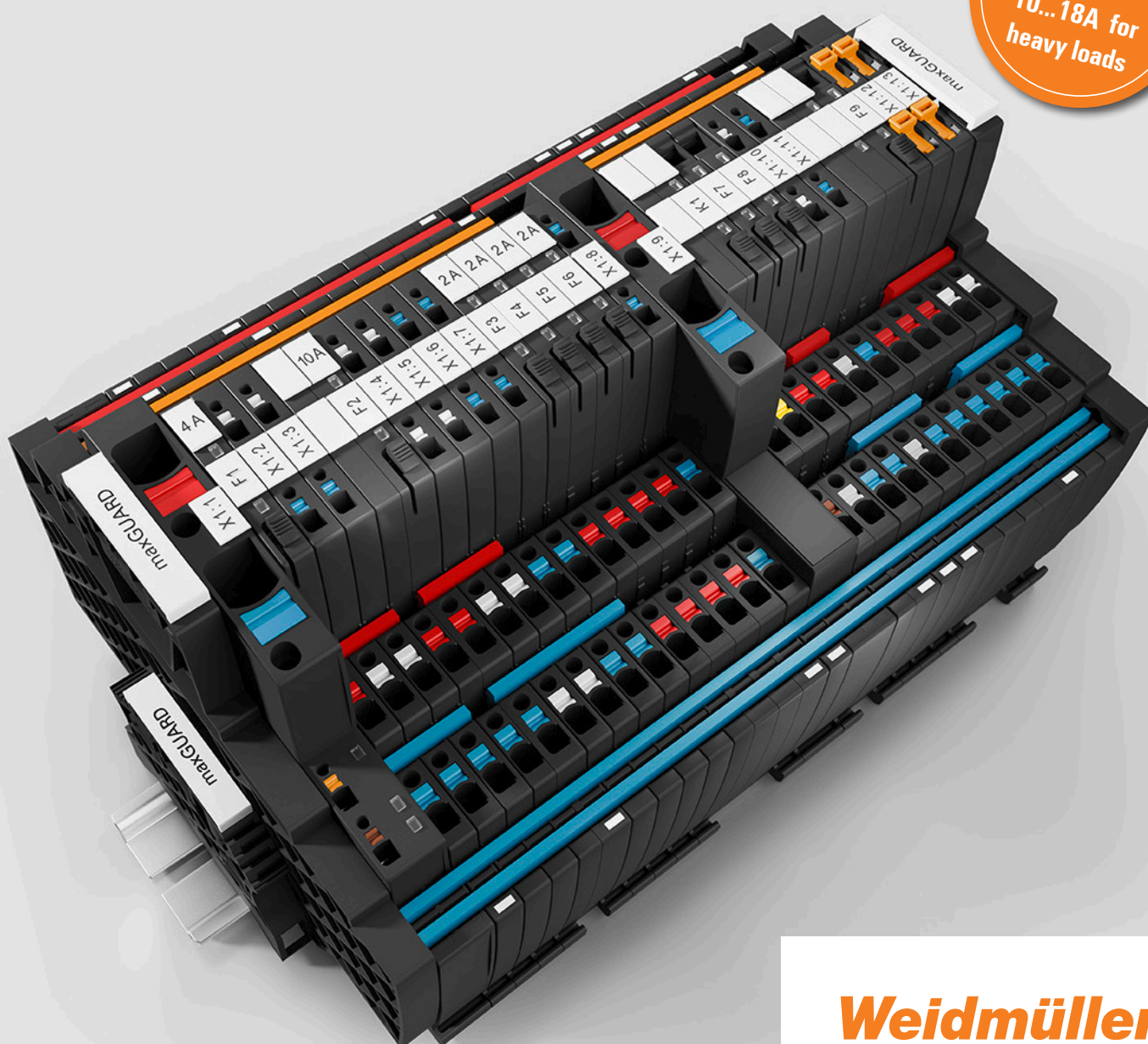


Power supply

## Load monitoring with integrated potential distribution maxGUARD – the innovative control voltage distribution system

0,1...1A for  
sensors  
10...18A for  
heavy loads



**Weidmüller** 

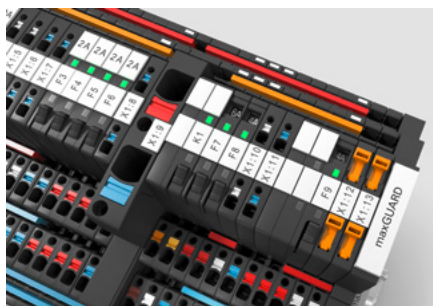
## Load monitoring and potential distribution in one complete solution maxGUARD – taking control voltage distribution to a new level

Fail-safe and maintenance-friendly control voltage distributions that can be installed in a time- and space-saving manner are a must for efficient machine and facility operation. With the new maxGUARD system, the terminal blocks (previously installed separately) for distributing potential to the outputs of the electronic load monitors become an integral part of a 24 V DC control voltage distribution solution. The new combination of load monitoring and potential distribution saves time during installation, increases safety against failure and reduces the amount of space required on the terminal rail by 50 %.



### Extreme ease of servicing

Sophisticated operating, testing and connection elements permit safe access to all voltage potentials and load circuits during commissioning and maintenance.



### Particularly space-saving

Electronic load monitors and potential distributors with a 6.1 mm pitch.



6.1 mm

Space saving  
of up to  
**50 %**

#### Integrated test point

Consistently integrated test points in the maxGUARD control voltage distribution's input and output speed up troubleshooting operations.



#### Practical disconnecting lever

Potential distributor with a disconnecting lever for simple galvanic isolation of the load circuit for testing and checking purposes.



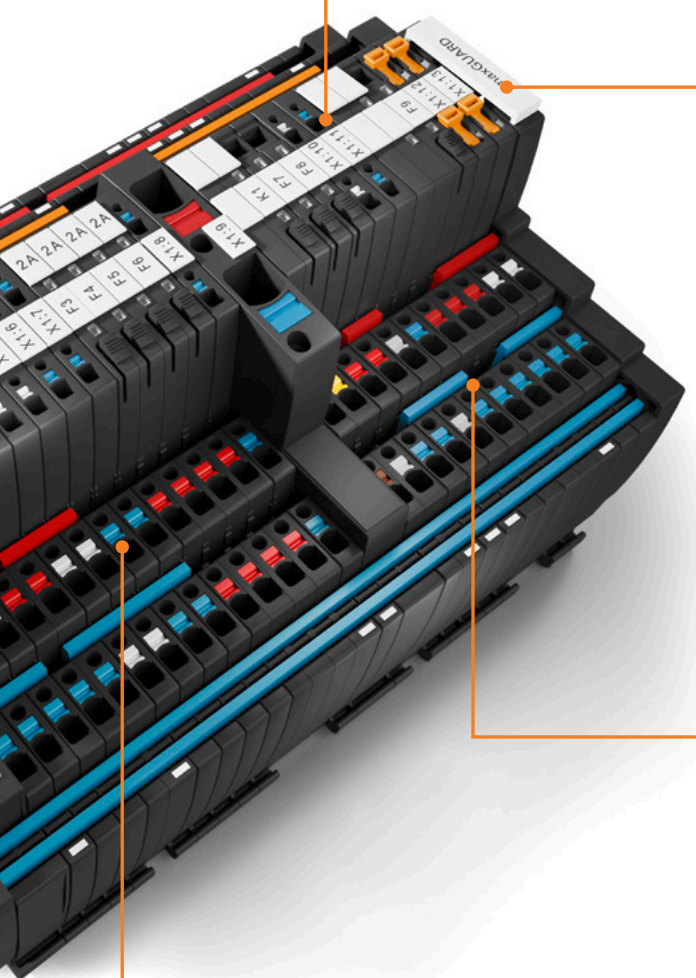
#### Unique cross-connectors

Less time and effort needed for wiring due to cross-connections between load monitoring and potential distribution terminals.



#### Can be used in a customised way

The sheer range of variants and the very different potential distribution terminals and additional components enable customised solutions at all times.

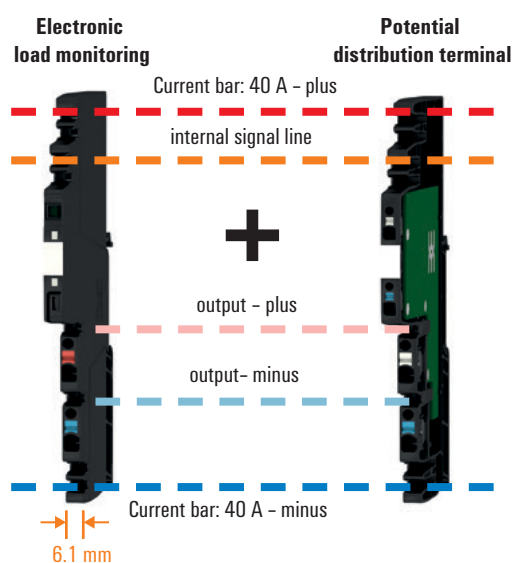




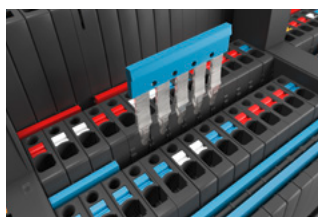
## maxGUARD – the concept

### Time- and space-saving control voltage distribution

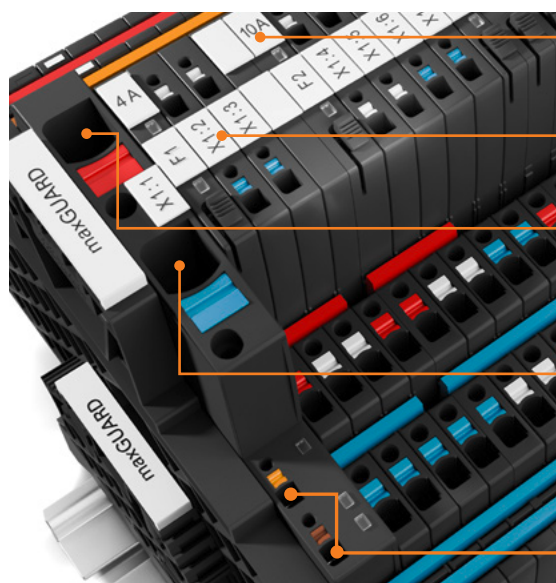
#### Combination of load monitoring and potential distribution



- Three main connection channels: positive, negative and internal signals
- Simple to increase the number of contacts thanks to crossconnection option in the potential distribution terminals



#### Sophisticated arrangement of connections and markers ensures clarity



Markers for current strength

Continuous marker channel for equipment ID

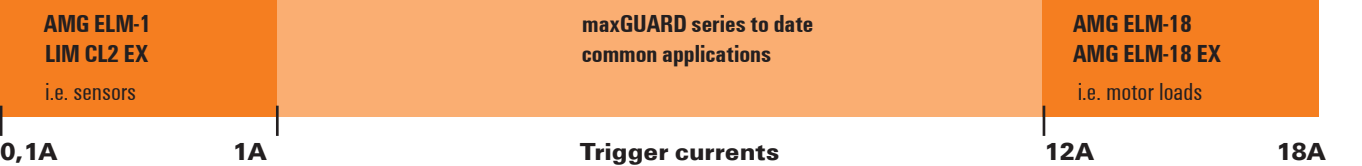
Supply terminal (positive): 16 mm<sup>2</sup>

Supply terminal (negative): 16 mm<sup>2</sup>

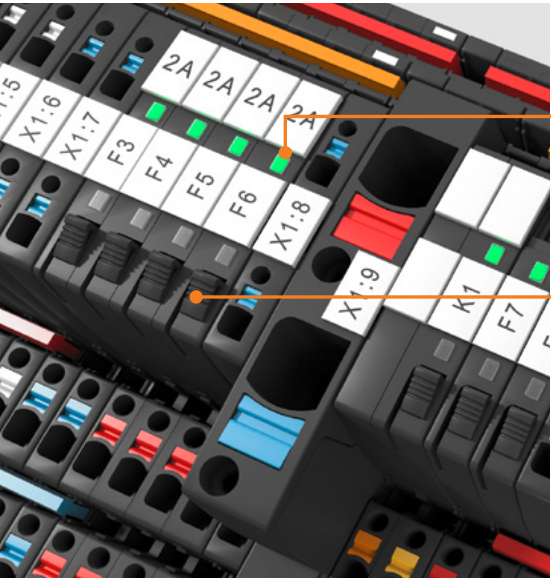
Reset input and alarm output for connecting to the PLC



New: maxGUARD with extended current range



Signaling LEDs enable immediate status indication and monitoring



Green/red LED status indicator

LED Status	Meaning
LED green	Load monitoring is switched on
LED green flashing	Overcurrent advance warning ( $I > 90\%$ )
LED red	Load monitoring is switched off
LED red flashing	Load monitoring has been initiated
LED red fast flashing	Internal error

Load monitoring status	Pressing the button
LED green, in operation	>0.1 to 2 s (manual switch-off)
LED red flashing, Load monitoring has been initiated (switched off)	>0.1 to 2 s (confirm and reset)
LED red (permanently lit)	>0.1 to 2 s (restart)

Multicoloured pushers simplify the identification of active and passive components when connecting cross bridges



Pushers

Red pushers indicate the active output terminals of the electronic load monitoring elements. Blue or white pushers indicate the output terminals of the potential distributors.

## High level of modularity for optimal adaptability

### Customised solutions made simple with maxGUARD

maxGUARD is breaking new ground in control voltage distribution. The combination of load monitoring elements and potential distribution terminals saves up to 50 % space and up to 20% time with wiring work, while the flexible compatibility of numerous single-channel and four-channel variations optimises material costs. maxGUARD offers you the benefits of a modular, highly flexible system that can be optimally adapted to any application.

1.

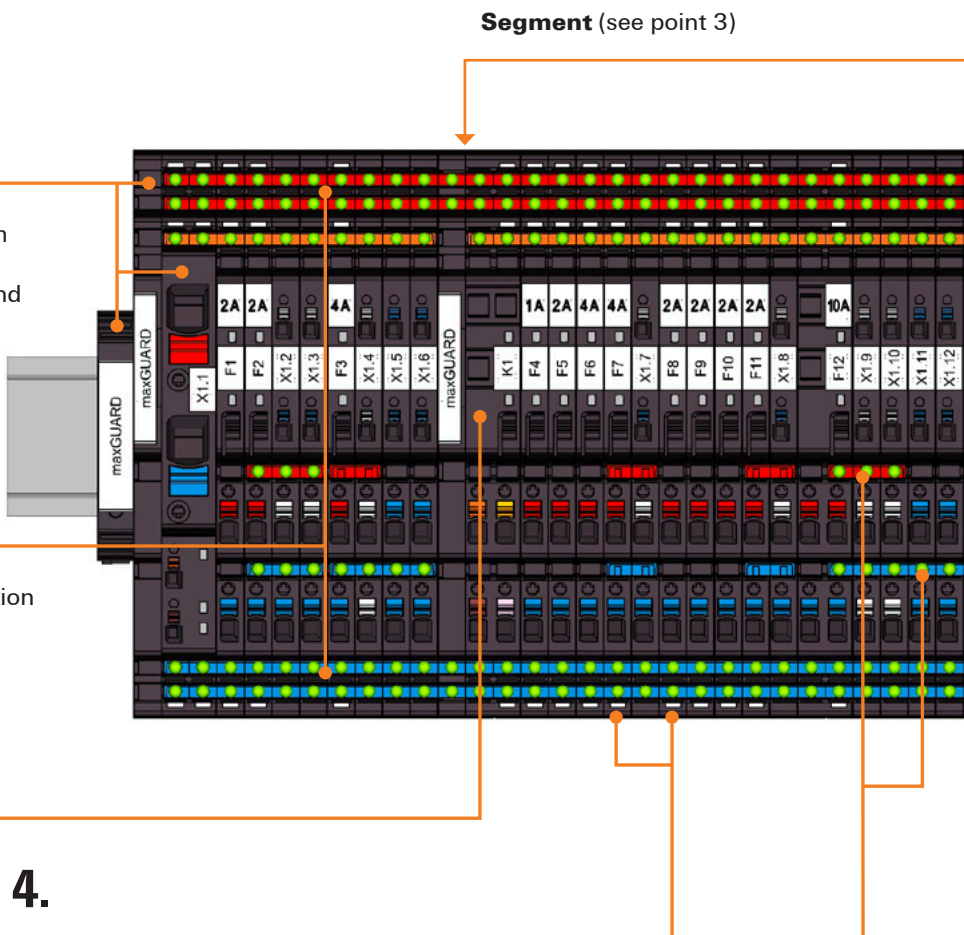
A maxGUARD station should always begin with an end bracket WEW 35/2, an end plate AMG EP and a supply terminal, and should always end with an end plate and an end bracket.

2.

For system currents  $>20$  A, the main connection channels must be configured in duplicate.

3.

The use of control modules allows for the segmentation of a maxGUARD station.



4.

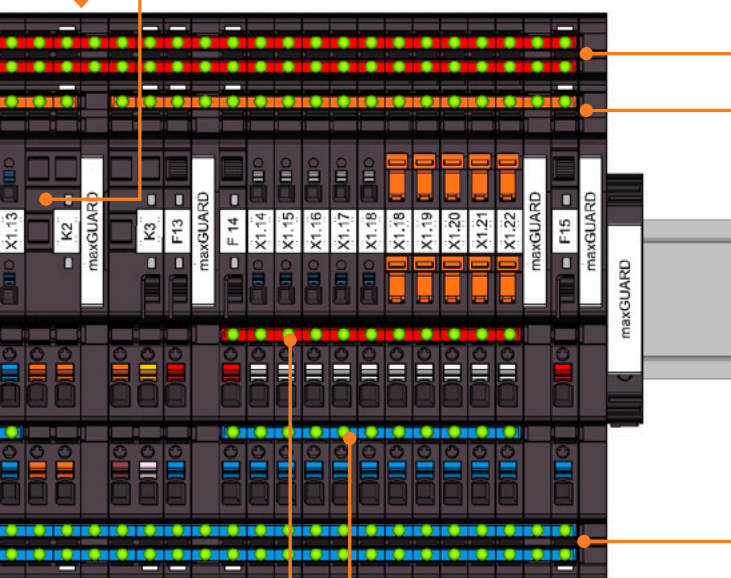
The markings on the plastic tabs denote the active inserted cross-connection sockets, whereby the upper and lower contact for each are electrically connected to one other. These sockets can be used to extend the cross bridges for currents of up to 20 A (see point 7).

The maxGUARD wizard enables the simple and fast configuration of the optimal station for your application. We are happy to provide you with data for further planning.

[www.weidmueller.com/configurator](http://www.weidmueller.com/configurator)

## 8.

An alarm module can be connected as desired and offers potential-free decoupling of the "Alarm" and "I>90 %" signals.



## 5.

The cross-bridging of load monitoring outputs in the potential distribution terminals must always be performed with insulated prefabricated bridges. This prevents the risk of short circuits occurring if there are cross bridges directly adjacent from an adjoining load monitoring circuit. Insulated prefabricated bridges are available with 2 to 10 poles.

## 7.

The main channels for positive and negative and the internal signal line are designed as double-shaft channels.

This allows smaller systems with currents of up to 20 A to be easily expanded at any time. There are different ways to achieve system currents >20 A:

- a) By using longer cross-connection bridges
- b) By installing a passive supply terminal directly behind the last cross-connection PIN and shifting the main cross bridges over to the next PIN on the right, so that the first and last supply terminals are connected to the cross-connector.

## 6.

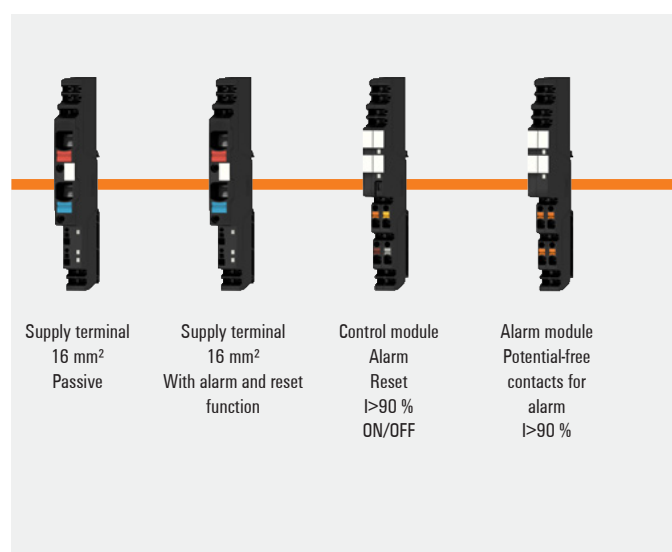
Non-insulated cross-connectors must be used for cross bridges with >10 poles in the load monitoring outputs, multi-pole. In order to avoid short circuits with adjacent cross-connectors, a separation plate must be installed.



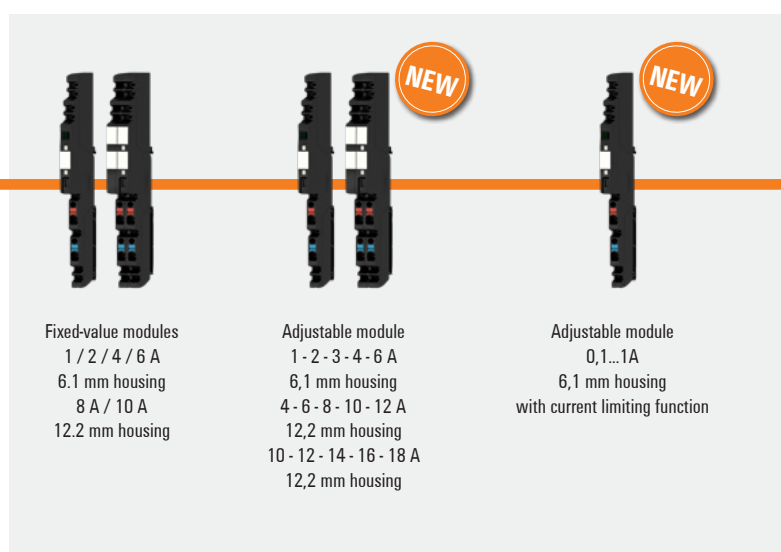
# maxGUARD – product overview

## Flexible and modular design

### Supply terminals, control and alarm modules



### Electronic load monitoring



#### Power-feed, control and alarm module

Alarm module with potential-free contacts for the "Alarm" and ">90%" signals. Control module with extended control function. Passive or active power-feed module with reset and alarm function

Type	Order No.
AMG FIM-D	2081870000
AMG FIM-C	2081880000
AMG FIM-D EX	2082530000
AMG FIM-C EX	2082540000
AMG CM	2081900000
AMG CM EX	2083360000
AMG AM	2081890000
AMG AM CO	2082770000

#### Load monitoring (fixed value)

Electronic load monitoring with fixed current (without >90% function)

Type	Order No.
AMG ELM-1F	2080420000
AMG ELM-1F EX	2082040000
AMG ELM-2F	2080480000
AMG ELM-2F EX	2082050000
AMG ELM-4F	2080490000
AMG ELM-4F EX	2082060000
AMG ELM-6F	2080500000
AMG ELM-6F EX	2082310000
AMG ELM-8F	2080600000
AMG ELM-8F EX	2082320000
AMG ELM-10F	2080650000
AMG ELM-10F EX	2082430000

#### Load monitoring adjustable

Electronic load monitoring with adjustable triggering current and triggering characteristic (with >90% function)

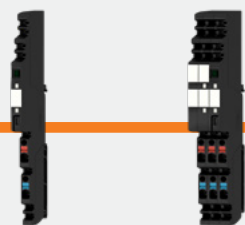
Type	Order No.
AMG ELM-6	2080360000
AMG ELM-6 EX	2082000000
AMG ELM-12	2080410000
AMG ELM-12 EX	2082010000
AMG ELM-18	2859800000
AMG ELM-18 EX	2838520000

#### Load monitoring adjustable

Load monitoring device with adjustable tripping current und current limiting function (with >80% function)

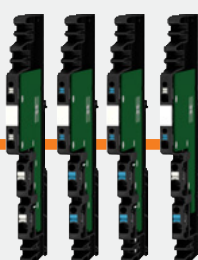
Type	Order No.
AMG ELM-1 LIM CL2 EX	2838530000

### Potential distribution and accessories



Fixed-value modules  
1 / 2 / 4 A  
Class 2  
6.1 mm housing

Adjustable modules  
with 2-pole output relay  
1-2-3-4-6 A  
18.3 mm housing  
4-6-8-10 A  
18.3 mm modules



Modules for potential distribution

- AMG OD: 2 x Plus, 2 x Minus
- AMG PD: 4 x Plus
- AMG MD: 4 x Minus
- AMG XMD: 4 x Minus (direct)



Terminal block  
for all pole disconnection  
of the load  
AMG DIS



Isolating plate, end plate  
and bracket  
for isolation, structuring and  
proper fit  
of the DC station

**Load monitoring (fixed value)**  
**Class 2**

Electronic load monitoring with fixed rated current  
(without  $I > 90\%$  pre warning)  
Class 2 Approval

### Load monitoring with relay

Electronic load monitoring with 2-pole output relay for allpole load disconnection; triggering current and triggering characteristic adjustable (with  $I > 90\%$  function)

**Potential distributor**

Flexible application through various potential distributor.

### End plate and Separation plate

End plate for mechanical stabilization.  
Separation plate for logical subdivision.

[illegible][illegible]

Type	Order No.
AMG MD	2122930000
AMG MD EX	2495040000
AMG OD	2122910000
AMG OD EX	2495090000
AMG PD	2122920000
AMG PD EX	2495070000
AMG XMD	2122940000
AMG XMD EX	2495080000
AMG DIS	2123050000
AMG DIS EX	2495100000

[illegible]

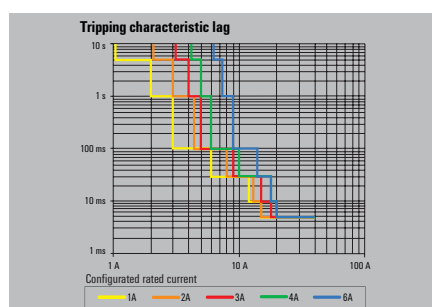
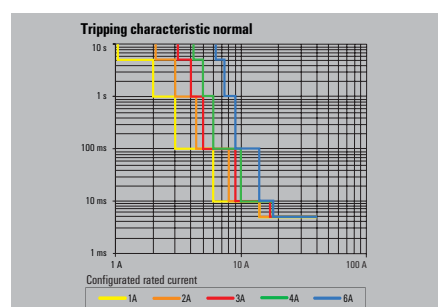
## maxGUARD – accessories and order information

### Technical data for your planning activities

#### Selection of characteristic curves using the example of a 6-A adjustable load monitoring system:

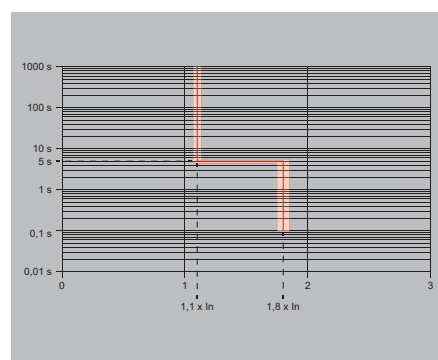
- Current and characteristic curves for adjustable load monitoring systems can be selected using the thumbwheel switch.
- New settings during operation are only applied by switching the system on/off.

ELM6	1	2	3	4	6	1	2	3	4	6
Factory settings					↑					
Triggering current	1 A	2 A	3 A	4 A	6 A	1 AT	2 AT	3 AT	4 AT	6 AT



#### AMG ELM-1 LIM EX CL2 with current limiting characteristics

- Safe line protection already with cables starting with 0.25mm<sup>2</sup> cross section.
- Adjustable load monitoring in 5 steps from 0.1... 1A





## Internal signal line:

- The internal signal line is used to switch the signals:  
alarm, I>90 %, reset, ON/OFF
- Since the signal line can only accept one status at a time, the signals are processed according to priority:

### Bus status

<b>Reset</b>
ON/OFF
<b>Alarm</b>
Advance warning (I>90 %)
<b>IDLE</b>
Wire breakage

### Priority

<b>high</b>
medium to high
<b>medium</b>
medium to low
<b>low</b>
low

### Encoders

<b>AMG FIM-C / AMG CM</b>
AMG CM
<b>AMG ELM</b>
AMG ELM
<b>AMG FIM-C / AMG CM</b>
AMG ELM

## maxGUARD – Accessories

### Cross-connections orange



Type	Qty.	Order No.
2-pin	60	1527930000
3-pin	60	1527940000
4-pin	60	1527970000
5-pin	60	1527980000
6-pin	20	1527990000
7-pin	20	1528020000
8-pin	20	1528030000
9-pin	20	1528070000
10-pin	20	1528090000
50-pin	5	1528130000

Type	Qty.	Order No.
ZQV 4N/2	60	1527930000
ZQV 4N/3	60	1527940000
ZQV 4N/4	60	1527970000
ZQV 4N/5	60	1527980000
ZQV 4N/6	20	1527990000
ZQV 4N/7	20	1528020000
ZQV 4N/8	20	1528030000
ZQV 4N/9	20	1528070000
ZQV 4N/10	20	1528090000
ZQV 4N/50	5	1528130000

### Cross-connections blue



Type	Qty.	Order No.
ZQV 4N/2 BL	60	1528040000
ZQV 4N/3 BL	60	1528080000
ZQV 4N/4 BL	60	1528120000
ZQV 4N/5 BL	60	1528140000
ZQV 4N/6 BL	20	1528170000
ZQV 4N/7 BL	20	1528180000
ZQV 4N/8 BL	20	1528190000
ZQV 4N/9 BL	20	1528220000
ZQV 4N/10 BL	20	1528230000
ZQV 4N/50 BL	5	1528240000

### Cross-connections red



Type	Qty.	Order No.
ZQV 4N/2 RD	60	2460450000
ZQV 4N/3 RD	60	2460810000
ZQV 4N/4 RD	60	2460800000
ZQV 4N/5 RD	60	2460790000
ZQV 4N/6 RD	20	2460780000
ZQV 4N/7 RD	20	2460770000
ZQV 4N/8 RD	20	2460760000
ZQV 4N/9 RD	20	2460750000
ZQV 4N/10 RD	20	2460740000
ZQV 4N/50 RD	5	2460730000

## maxGUARD – Accessories

### Partition plate and end plate



Type	Qty.	Order No.
AMG PP	10	2123000000
AMG EP	10	2495380000
AMG EP KIT		2500760000

Type	Qty.	Order No.
AMG PP	10	2123000000
AMG EP	10	2495380000
AMG EP KIT		2500760000

### End bracket



Type	Qty.	Order No.
WEW 35/2 SW	100	1061210000
WEW 35/2 V0 GF SW	100	1479000000

### Cutting tool for cross-connectors



Type	Qty.	Order No.
KT 14	1	1157820000

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