

# Simple, flexible and safe!

## Distribution system for motor-starter combinations



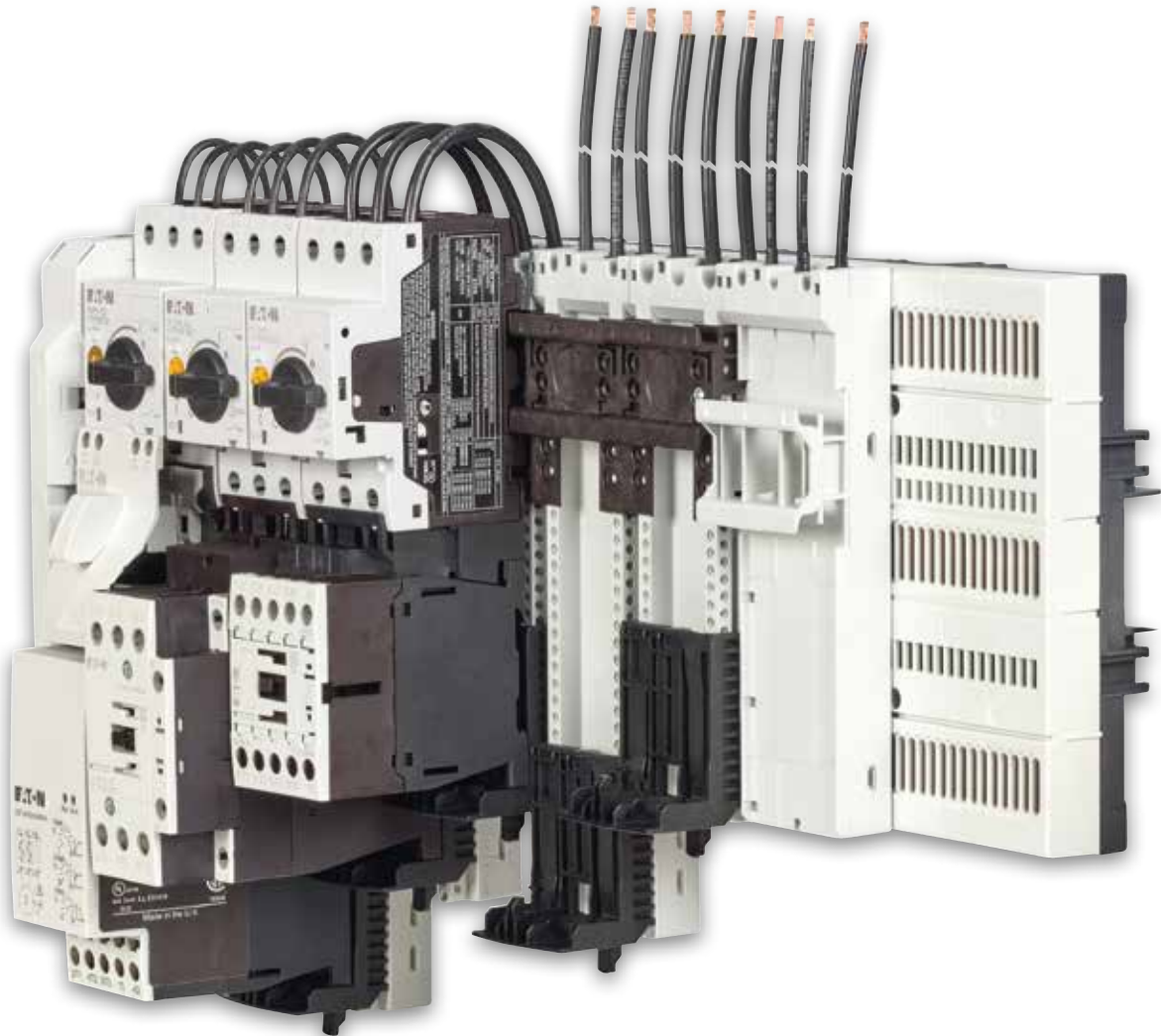
System extension



Powering Business Worldwide

# The foundation for the control cabinet of the future

The MSFS feeder system forms the basis for safe and innovative energy distribution of up to 125 A. The modular solution can be simply and intuitively integrated in your machines and systems with pluggable assembly.



## Application fields

The feeder system base can be used in decentralized energy distribution, in central energy distribution systems or directly in the system.



### Out-of-the-box!

Feeder system assembly - quick, easy and safe - from the packaging directly into the control cabinet! In doing so it is of no matter whether the assembly is on a DIN top-hat rail of 7.5 mm or 15 mm or on the assembly plate. The feeder system closes the gap between a three-phase commoning link and a busbar system without having to do without the normal handling of a busbar system.

The two separate sizes of 225 mm and 405 mm can be adjusted for any spatial configuration. The multiple-sized base modules can be flexibly combined with one another. Three integrated copper bars allow power of up to 125 A with 4 or 8 outlets.

### Flexible!

All pluggable components such as the feeder block and the various adapters in the feeder system can be flexibly assembled on the entire structural width of the base module. The assembly of multiple, various components is possible.

Should system requirements change, the components can be easily replaced. You can therefore easily adapt your machines and systems to changing requirements.

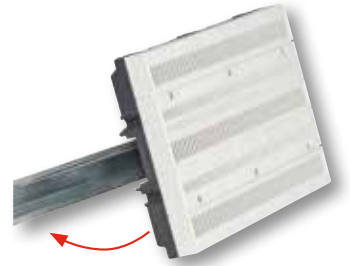
### Simple!

The feeder module as well as any other adapter can be positioned at any spot on the base module without the need for tools. Thanks to the simple plug-in technology, a direct contact with the module is possible.

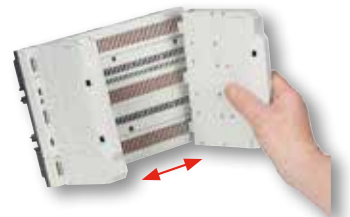
The load-carrying wiring and contacts of the individual elements are no longer required, therefore saving valuable assembly time. Your machines and systems can be directly deployed.

### Safe!

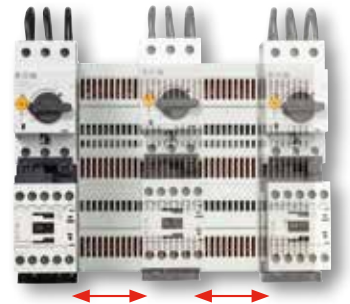
Safety of staff during work with electrical currents is paramount. The feeder system offers an intuitive and error-free assembly as it is based on the standard busbar systems. The system is also finger-safe. Integrated coverage of the current-carrying parts prevents unintended contact with current-conducting components.



"All in One" – integrated busbar system.



Assembly and contacting of the components through simple plugs.



Full flexibility: Adapters can be flexibly positioned on the entire board.



The IP20 protection rating means that the feeder system is finger-safe.

### Approbativen

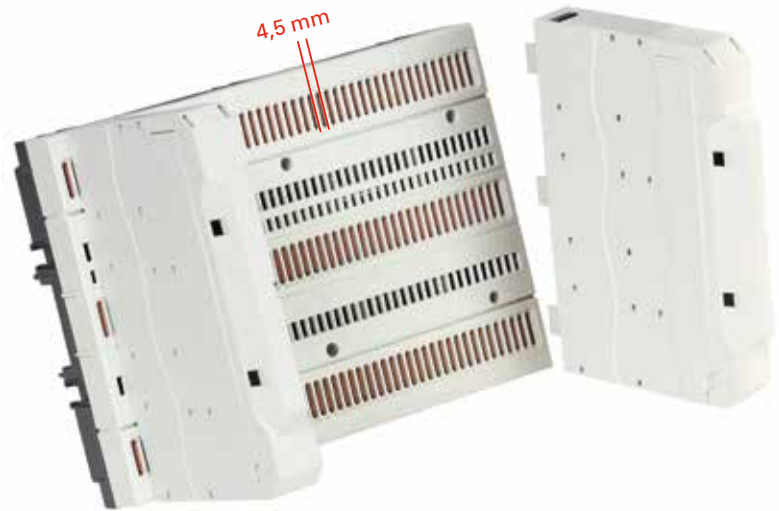


# Quickly and safely on target thanks to push-lock technology

## Feeder module

The feeder module can be flexibly placed on the board within a grid of 4.5 mm without the need for tools. In a single step, an electrical and mechanical connection is automatically secured to the feeder module.

The integrated reverse polarity protection is a reliable safeguard against assembly errors. The position of the adapter can be changed at any time according to the load on your machine and system.



## Fast and safe

Once the adapter is positioned, the cable connection can be made from above or below. Thanks to the push-lock technology, this can be quick, easy and safe. The wiring time is thus significantly reduced and the commissioning can be carried out faster.

Thanks to the extension spring joint in each cable, accidental slipping or detachment of the cables is prevented. When transported and deployed in your machine and system, the electrical contacts can securely remain in place and no further testing of the connections is needed.

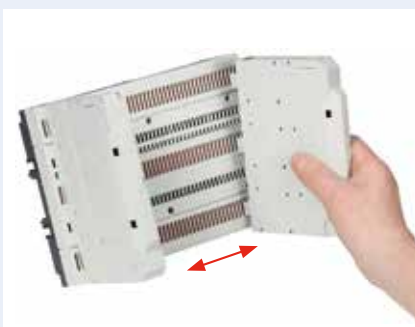
## Terminals

The terminals for IEC cables are single wire, multiple wire, fine wire, direct or with sleeves for circular conductors.

The terminals for UL cables are certified under Class B (UL486E)

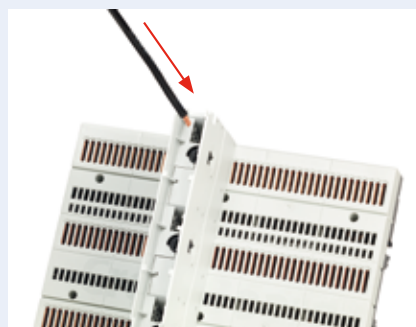
## Push-lock technology

Step 1



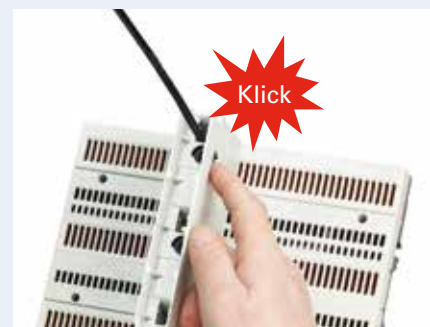
Positioning of the adapter

Step 2



Wiring through simplified plugging of the cable

Step 3



The actuation of the lever is used to securely fix the cable. The device is immediately ready for deployment.

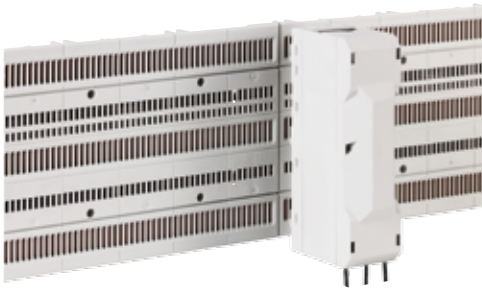
# Connection module up to 125A

## Mechanical values:

- W x H x D : 45 x 166 x 92
- Degree of protection: IP20

## Electrical values:

- Max. permissible voltage (IEC) 800 V ; (UL) 600 V
- Max. current carrying capacity (IEC) 125 A ; (UL) 100 A



## Terminal points:

- 6 – 50 mm<sup>2</sup> / AWG 10 – 1 (fine stranded, directly clamped or with ferrule)

Can be used as center feed from two boards. (62,5 A with symmetrical distribution or 80 A max. per board with asymmetrical distribution)

# Power supply for Feeder System

## Mechanical values:

- W x H x D : 45 x 160 x 130
- Degree of protection: IP30

## For use directly on the Feeder System

- Push-in connection for easy connection of 24 V DC Voltage
- 95% efficiency
- Self-protection in case of short-circuit with integrated restart
- Elimination of the back-up fuse



## Electrical values:

- Rated voltage AC: 480 V (IEC/UL)
- Min. operating voltage AC: 380 V
- Output voltage DC: 24 V
- Output current 5 A
- Input/ output separation: SELV / PELV
- Overvoltage protection: 32 A
- Measurement frequency (50 / 60) (IEC/UL)

## Terminal points:

- Push-in
- Solid wire or stranded wire – 2,5 mm<sup>2</sup>
- Stranded wire with ferrules - 1,5 mm<sup>2</sup>
- American Wire Gauge – 24 - 12 AWG

# EMS2 electronic motor starter in the Motor Starter Feeder System

EMS2 electronic motor starters combine an extremely compact design with the traditional functions of conventional motor starters. Their narrow overall width of 22.5 mm means that these units can be used wherever motors, with a rated power of up to 3 kW, need to be driven.



## Intelligent networking

The SmartWire-DT interface replaces the conventional control wiring and also supplies additional information.



## A motor starter with a long life span

The integrated hybrid switching technology not only ensures minimal wear during start-up, but also increases the contact life by a factor of 10, to approximately 30 million operations..



## Electronic motor protection

Despite having only two current ranges, the electronic motor starter can be used to protect motors from from 0.06 up to 3 kW (400 V 50 Hz).



## Integrated reversing starter

The electronic motor starter enables both clockwise and counterclockwise rotation.



## Safe stop

Thanks to its dual-channel design, the electronic motor starter ensures safe stops up to SIL3 / PL<sub>e</sub>.



Thanks to the tool-free plug-in technology, the EMS2- ROSF version of the electronic motor starter (which is available in two separate sizes) can be quickly installed anywhere on the base module of the feeder system.

The positioning of the adapters – and thus that of the motor starter itself – can be changed at any time, in line with the exact requirements placed on the machine or system.

As the user-friendly plug-in technology automatically establishes an electrical and mechanical connection to the feeder module, the motor starter is immediately ready for use.

# Eaton's value added services

## streamline, optimize, customize

Customers today are global consumers. They make purchase decisions online, buy anytime and anywhere. And, with the number of consumers increasing worldwide, successful manufacturers must be able to quickly respond to rapidly changing preferences and demand.



See More,  
Do More...

### Our value added services team help you to:

- Advance lean practices in your supply chain
- Simplify sourcing and ordering processes
- Improve assembly configurations
- Optimize engineering processes
- Bring down total costs
- Achieve consistent solutions from a single, trusted source

## Integrated Solutions

Let us bring efficiency and predictability to your manufacturing and assembly processes. With optimum product combinations and device programming we help you minimize waste and failure, reduce assembly costs and time, and simplify sourcing and ordering.



Motorstarterkombinationen werden vormontiert und können direkt eingebaut werden.

### Assemblies

Based on your needs and specifications

- Product assemblies
- Product combinations including wiring
- Products in enclosures/ on DIN-rail / mounting plate
- SmartWire-DT Solutions
- Pre-programmed Drives / Soft starters / HMI's / PLC's



Vorverdrahtete Produktkombinationen reduzieren Installationszeit und -kosten.

## Customized Solutions

Eaton's VAS team can provide a clear-eyed assessment of your processes and workflows. We carefully evaluate your current operations and provide guidance on planning and optimization, helping ensure that your processes are adding value every day.



Zeitersparnis durch einbaufertige Baugruppen.

### Workshops / Innovation

Developed for and with you





- Value Stream Mapping
- Value Analysis/Value Engineering Ansatz
- „Think outside the box“

# Tested components are integrated in the new system

Certified components such as motor protection switches or motor starter components can be easily attached to the adapter on the MSFA feeder system. The pre-integrated cables minimize the wiring time. Thanks to their approvals, the base module (board), adapter and components can be used around the world.

	Typ	Can be used for:	
	MSFA0-16	Motor protection switch up to 7.5 kW	
	MSFA0-32	Motor protection switch up to 15 kW	
	MSFAD-16	Direct starter up to 7.5 kW with spring-loaded terminals	
	MSFAD-25	Direct starter up to 7.5 kW with spring-loaded terminals	
	MSFAD-32	DOL starters up to 15 kW	
	MSFAL-16	Direct starter with DS7 up to 5.5 kW Variable speed starter DE1	 *1
	MSFAR-25	Reversing starters up to 5.5 kW	
	MSFAR-32	Reversing starters up to 15 kW	

\*1: System extension

	Type	Can be used for:	
 *1	MSFANZM1-125A	Circuit breaker NZM1 ... A160	
 *1	MSFAMCB-16A/L1(L2,L3) MSFAMCB-63A/L1(L2,L3)	Circuit breaker FAZ up to 16 A Circuit breaker FAZ up to 63 A	

\*1: System extension

## Direct mounting on the board



\*1

Feeder modul  
MSF1-125A



\*1

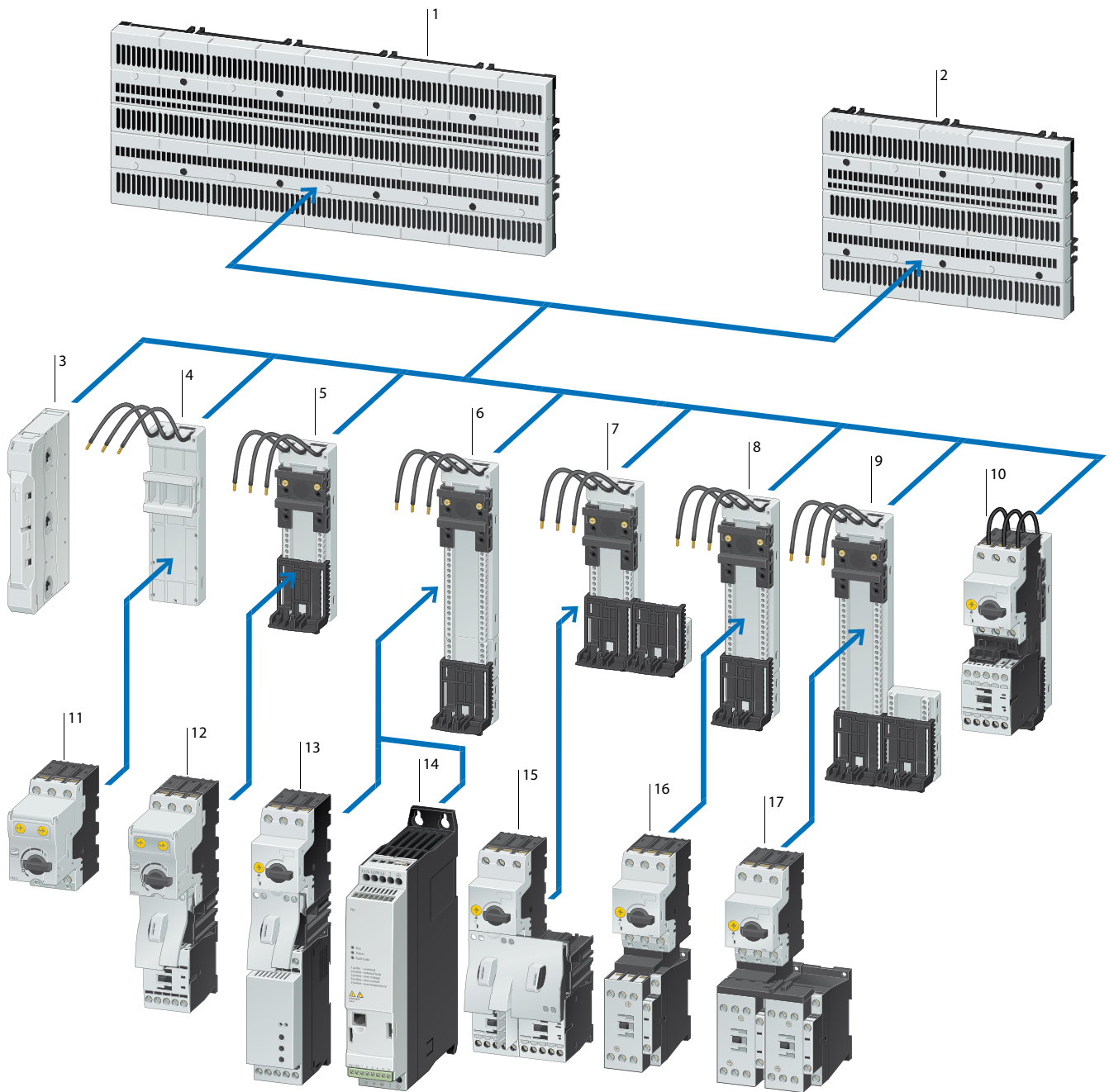
Power supply  
MSFSVG-400VAC/24VDC/5A



\*1

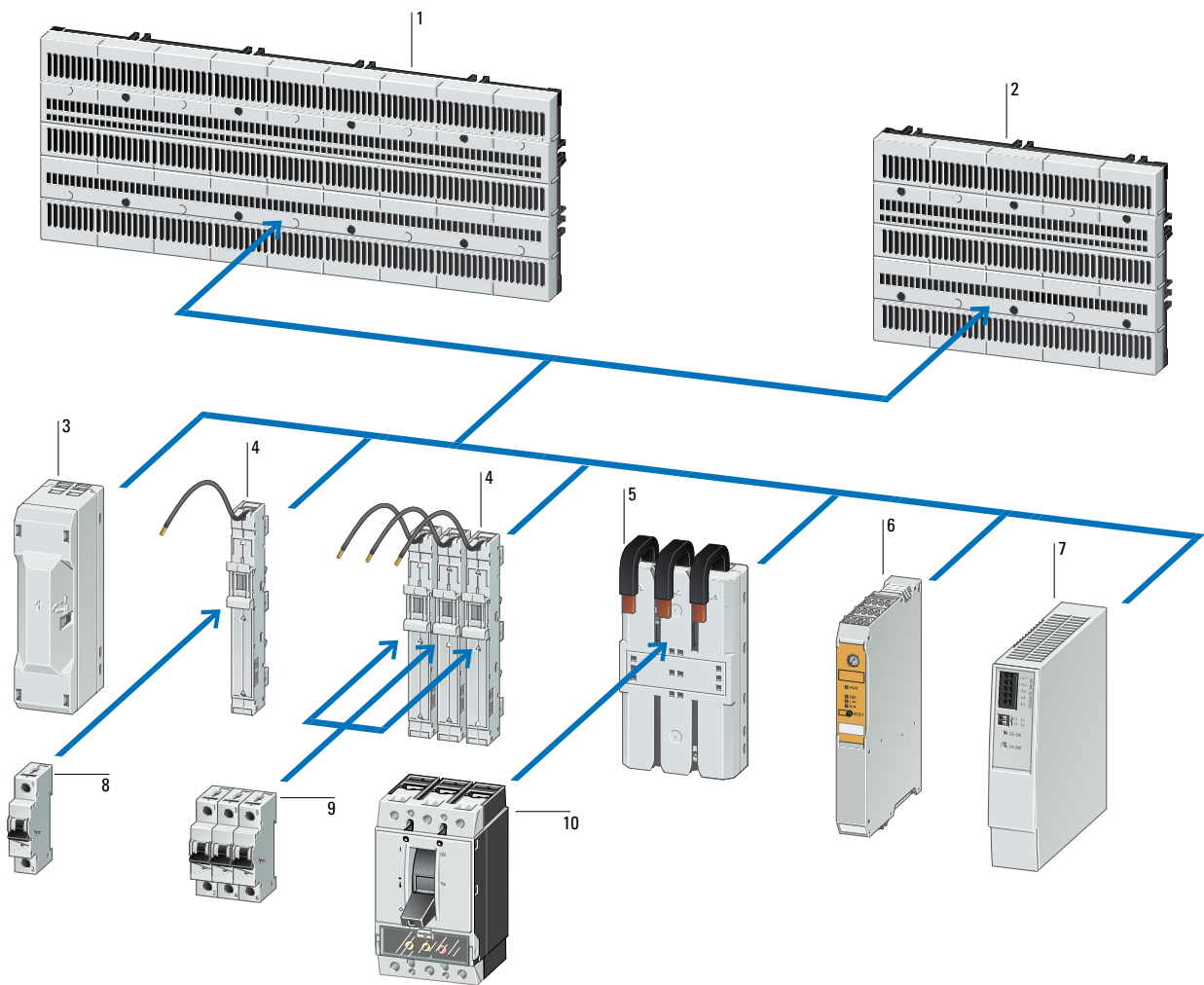
EMS2 Electronic motor starter  
EMS2-ROSF-Z-3-24VDC  
EMS2-ROSF-Z-9-24VDC

# System overview



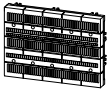
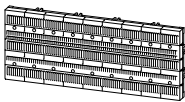

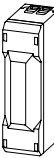
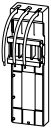
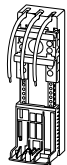

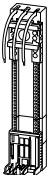
1. Base module (board) for maximum 8 motor starters
2. Base module (board) for maximum 4 motor starters
3. Feeder module 80 A
4. Device adapter for motor protection switches PKZM0 or PKE32
5. Device adapter for direct starters up to 7.5 kW
6. Device adapter for direct starters with DS7 and DE1
7. Device adapter for reverse starters up to 5.5 kW
8. Device adapter for direct starters up to 15 kW
9. Device adapter for reverse starters up to 15 kW
10. Direct starters MSC-DM-.../MSFA
11. Motor protection circuit breaker PKZM0 or PKE up to 15 kW
12. Direct starter MSC-D(M)(E) up to 7.5 kW
13. Direct starter with soft starter with DS7 up to 5.5 kW
14. Variable speed starter DE1 (system extension)
15. Reverse starter MSC-R(E)... up to 5.5 kW
16. Direct starter MSC-D(E)... up to 15 kW
17. Reverse starter MSC-R(E)... up to 15 kW

# System extension


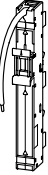
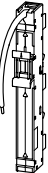
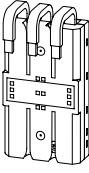


1. Base module (board) for maximum 8 motor starters
2. Base module (board) for maximum 4 motor starters
3. Feeder Module 125A
4. Device adapter for circuit breaker FAZ (L1 or L2 or L3).  
Device adapter for circuit breaker FAZ  
2- or 3- pole (L1 and L2 and L3)
5. Device adapter for circuit breaker NZM1
6. Electronic motor starter EMS2
7. Power supply 24 V DC
8. Circuit breakers FAZ-../1
9. Circuit breakers FAZ-../2(3)
10. Circuit breakers NZM1


# Data in overview

	Rated current	Cable diameter	Adapter width	Can be used for:	Type Article no.	Notes:
<b>Boards</b>						
	125 A	-	-	max. 4 motor starters	<b>MSFB-4-125A</b> 191091	
	125 A	-	-	max. 8 motor starters	<b>MSFB-8-125A</b> 191092	
<b>Feeder modules</b>						
	Max. 80 A	1,5-16 mm <sup>2</sup>	22,5 mm	MSFB-4-125A MSFB-8-125A	<b>MSFI-80A</b> 191093	Push Lock connection
 *1	Max. 125 A	6 - 50 mm <sup>2</sup>	45 mm	MSFB-4-125A MSFB-8-125A	<b>MSFI-125A</b> 198258	Screw terminals
<b>Adapter</b>						
	16 A	2,5 mm <sup>2</sup>	45 mm	PKZM0, PKE	<b>MSFA0-16</b> 191094	1 fixed mounting rail
	32 A	6 mm <sup>2</sup>	45 mm	PKZM0, PKE	<b>MSFA0-32</b> 191095	1 fixed mounting rail
	16 A	2,5 mm <sup>2</sup>	45 mm	Direct starters with PKZM0 or PKE up to 7.5 kW	<b>MSFAD-16</b> 191096	1 mounting rail 1 positioning slide
	25 A	4 mm <sup>2</sup>	45 mm	Direct starters with PKZM0 or PKE up to 7.5 kW	<b>MSFAD-25</b> 191097	1 mounting rail 1 positioning slide
	32 A	6 mm <sup>2</sup>	45 mm	Direct starters with PKZM0 or PKE up to 15 kW	<b>MSFAD-32</b> 191098	1 mounting rail 1 positioning slide  Only with PKZM0-XDM32ME
	16 A	2,5 mm <sup>2</sup>	45 mm	Motor starters with PKZM0 or PKE and soft starter DS7 up to 5.5 kW Variable speed starter DE1	<b>MSFAL-16</b> 191099	1 mounting rail 1 positioning slide

\*1: System extension

	Rated current	Cable diameter	Adapter width	Can be used for:	Type Article no.	Notes:
	25 A	4 mm <sup>2</sup>	90 mm	Reverse starters with PKZM0 or PKE up to 5.5 kW	<b>MSFAR-25</b> 191100	1 mounting rail 2 positioning slide
	32 A	6 mm <sup>2</sup>	90 mm	Reverse starters with PKZM0 or PKE up to 15 kW	<b>MSFAR-32</b> 191101	1 mounting rail 2 positioning slide
	16 A	2,5 mm <sup>2</sup>	18 mm	FAZ	<b>MSFAMCB-16A/L1</b> 198259	
	16 A	2,5 mm <sup>2</sup>	18 mm	FAZ	<b>MSFAMCB-16A/L2</b> 198260	
	16 A	2,5 mm <sup>2</sup>	18 mm	FAZ	<b>MSFAMCB-16A/L3</b> 198261	
	63 A	10 mm <sup>2</sup>	18 mm	FAZ	<b>MSFAMCB-63A/L1</b> 198262	
	63 A	10 mm <sup>2</sup>	18 mm	FAZ	<b>MSFAMCB-63A/L2</b> 198263	
	63 A	10 mm <sup>2</sup>	18 mm	FAZ	<b>MSFAMCB-63A/L3</b> 198264	
	160 A	43,2 mm <sup>2</sup>	90 mm	NZM1	<b>MSFANZM1-125A</b> 198266	

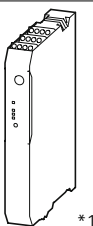
## Electronic motor starter EMS2

Function	Rated operational current	Adjustment range	Connection technique	Actuating voltage 24 V DC
	AC-53a	Overload release		<b>Type</b>
	380 V			Article-No.
	400 V			
	415 V			
	P	$I_r$		
	kW	A		

### Reversing starter with integrated short-circuit fuse

Motor protection  
Switching principle: safety output stage with bypass, three-phase switch-off.

	0.06 - 1.1	0.18 - 3	Screw terminals	<b>EMS2-ROSF-Z-3-24VDC</b> 192399
E-STOP via additional enabling terminal up to SIL3/Plc.	0.55 - 3	1.5 - 7 (AC-53a) 9 (AC-51)		<b>EMS2-ROSF-Z-9-24VDC</b> 192400



\*1

# Daten im Überblick

Motor data		Settings range		Motor starters		Motor protection switch	Power contactor	Connector	Adapter
Rated operational current AC3 380 V/400 V/415 V	Rated operational current AC3 400 V	Overload releases	Short-circuit releases						
P kW	I <sub>e</sub> A			Type	Item no.	Type	Type	Type	Type
0.06	0.21	0.16-0.25	3.5	MSC-DM-0.25-M7(230V50HZ)/MSFA	191114	PKZM0-0.25	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
0.09	0.31	0.25-0.4	5.6	MSC-DM-0.4-M7(230V50HZ)/MSFA	191115	PKZM0-0.4	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
0.12 0.18	0.41 0.6	0.4-0.63	8.82	MSC-DM-0.63-M7(230V50HZ)/MSFA	191116	PKZM0-0.63	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
0.25	0.8	0.63-1	14	MSC-DM-1-M7(230V50HZ)/MSFA	191117	PKZM0-1	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
0.37 0.55	1.1 1.5	1-1.6	22.4	MSC-DM-1.6-M7(230V50HZ)/MSFA	191118	PKZM0-1.6	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
0.75	1.9	1.6-2.5	35	MSC-DM-2.5-M7(230V50HZ)/MSFA	191119	PKZM0-2.5	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
1.1 1.5	2.5 3.6	2.5-4	56	MSC-DM-4-M7(230V50HZ)/MSFA	191120	PKZM0-4	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
2.2	5	4-6.3	88.2	MSC-DM-6.3-M7(230V50HZ)/MSFA	191121	PKZM0-6.3	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
3	6.6	6.3-10	140	MSC-DM-10-M7(230V50HZ)/MSFA	191122	PKZM0-10	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
4	8.5	6.3-10	140	MSC-DM-10-M9(230V50HZ)/MSFA	191123	PKZM0-10	DILM9-10(...)	PKZM0-XDM15ME	MSFAD-25
5.5	11.3	8-12	168	MSC-DM-12-M12(230V50HZ)/MSFA	191124	PKZM0-12	DILM9-10(...)	PKZM0-XDM15ME	MSFAD-25
7.5	15.2	10-16	224	MSC-DM-16-M15(230V50HZ)/MSFA	191125	PKZM0-16	DILM9-10(...)	PKZM0-XDM15ME	MSFAD-25
0.06	0.21	0.16-0.25	3.5	MSC-DM-0.25-M7(24VDC)/MSFA	191102	PKZM0-0.25	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
0.09	0.31	0.25-0.4	5.6	MSC-DM-0.4-M7(24VDC)/MSFA	191103	PKZM0-0.4	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
0.12 0.18	0.41 0.6	0.4-0.63	8.82	MSC-DM-0.63-M7(24VDC)/MSFA	191104	PKZM0-0.63	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
0.25	0.8	0.63-1	14	MSC-DM-1-M7(24VDC)/MSFA	191105	PKZM0-1	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
0.37 0.55	1.1 1.5	1-1.6	22.4	MSC-DM-1.6-M7(24VDC)/MSFA	191106	PKZM0-1.6	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
0.75	1.9	1.6-2.5	35	MSC-DM-2.5-M7(24VDC)/MSFA	191107	PKZM0-2.5	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
1.1 1.5	2.5 3.6	2.5-4	56	MSC-DM-4-M7(24VDC)/MSFA	191108	PKZM0-4	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
2.2	5	4-6.3	88.2	MSC-DM-6.3-M7(24VDC)/MSFA	191109	PKZM0-6.3	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
3	6.6	6.3-10	140	MSC-DM-10-M7(24VDC)/MSFA	191110	PKZM0-10	DILM7-10(...)	PKZM0-XDM15ME	MSFAD-25
4	8.5	6.3-10	140	MSC-DM-10-M9(24VDC)/MSFA	191111	PKZM0-10	DILM9-10(...)	PKZM0-XDM15ME	MSFAD-25
5.5	11.3	8-12	168	MSC-DM-12-M12(24VDC)/MSFA	191112	PKZM0-12	DILM9-10(...)	PKZM0-XDM15ME	MSFAD-25
7.5	15.2	10-16	224	MSC-DM-16-M15(24VDC)/MSFA	191113	PKZM0-16	DILM9-10(...)	PKZM0-XDM15ME	MSFAD-25

# Data in overview

Board	MSFB-4-125A	MSFB-8-125A
Width [mm]	225	405
Height [mm]	160	160
Depth [mm]	45	45
Rated current, max [A]	125 IEC / 96 UL	125 IEC / 96 UL
Rated operational voltage [V]	690 IEC / 600 UL	690 IEC / 600 UL
Pole count	3	3
Rail distancing [mm]	60	60
Numbers of outputs	Max. 4	Max. 8
For DIN carrier rail mounting	Yes	Yes
For attachment to the mounting plate	Yes	Yes

## MSFSVG-400VAC/24VDC/5A

Attribute	
<b>Input parameters</b>	
Rated input voltage	3 x 400 - 500 V AC
Input voltage range	3 x 400 - 500 V AC, -20 %...+15 %
Mains frequency	
Nominal value [Hz]	50/60
Rated input current I <sub>n</sub> [A]	3 x 0.4 A (400 V AC) / 3 x 0.3 A (500 V AC)
Back-up fuse	6, 10, 16 A (recommended)
Trigger characteristic	B, C, D, K
<b>Output characteristics</b>	
Tolerance	24 - 28 V DC
Rated output current [A]	5
Derating from T <sub>amb</sub> > +50 °C	2.5 % per Kelvin temperature increase
Degree of efficiency [%]	91 (typ., with 400 V AC)
Residual ripple and switching peaks	< 20 mVpp
Terminal blocks	spring-loaded terminals
Stripping length [mm]	10
<b>Connection</b>	
Anschlussquerschnitte	
Fine stranded with wire end ferrules/ Solid [mm <sup>2</sup> ]	0.2 - 2.5 mm <sup>2</sup> (AWG 24 - 12)
Ambient temperature range [°C]	
Operation θ [°C]	-25 - +70 (> 60 °C derating)
Storage, Transport θ [°C]	
Storage [°C]	-40 - +85
Humid heat [°C]	< 95 % relative humidity at +25 °C, no condensation
Insulation voltage	
Input/ Output	3 kV AC (type testing), 1,5 kV AC (routine testing)
Degree of protection	IP20
Protection class	Class II
<b>Standards and regulations</b>	
EN 61010-1 (overvoltage category II) Equipping power installations with electronic equipment: EN 50178 Safety extra-low voltage: PELV (EN 50178), SELV (EN 61010) Safe separation: VDE 0100-410 CE: in conformity with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU Industrial: EN 55011 Limits of the network harmonics: EN 601000-3-2	

## Electronic motor starter EMS2

Attributes	
Cross section - power cable	EMS2-D(R)0-Z-... screw terminals 0.2 mm <sup>2</sup> - 2.5 mm <sup>2</sup> AWG 24 - 14
<b>Supply</b>	
Rated control voltage	24 V DC
Control voltage range	19.2 V DC - 30 V DC
Rated control current I <sub>s</sub>	40 mA
Overvoltage protection	Yes
Protection against reverse polarity	Yes
<b>Control inputs</b>	
Rated actual value voltage U <sub>c</sub>	24 v dc
Rated actuating current I <sub>c</sub>	10 mA
<b>Power circuit</b>	
Rated operational voltage U <sub>e</sub>	500 V AC, 50/60 Hz
Operating voltage	42 V AC - 550 V AC
Rated operational current AC-51	EMS2-...-3-24VDC: 3 A EMS2-...-9-24VDC: 9 A

Types of motor starters	Types of fuses	Dimensions	Design data <sup>1)</sup>
EMS2-ROSF-Z-3-24VDC	3x 10X38-16A-GR	10 x 38 mm	16A/690V(CC) / Superflink gR
EMS2-ROSF-Z-9-24VDC	3x 10X38-20A-GR	10 x 38 mm	20A/690V(CC) / Superflink gR
EMS2-ROSF-Z-9-24VDC	3x 10X38-30A-GR	10 x 38 mm	30A/690V(CC) / Superflink gR

1) We recommend the use of Mersen fuses or fuses with similar characteristics. More information on [www.eaton.de/EMS2](http://www.eaton.de/EMS2)

# Technical data

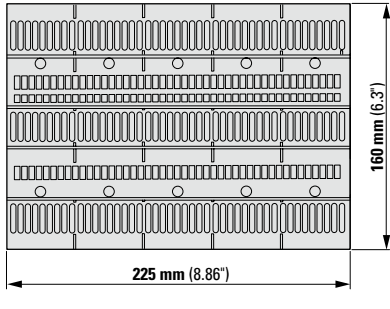
Feeder module and adapter	MSFI-80A	MSFA0-16	MSFA0-32	MSFAD-16	MSFAD-25	MSFAD-32	MSFAL-16	MSFAR-25	MSFAR-32
Width [mm]	22.5	45	45	45	45	45	45	90	90
Height [mm]	160	160	160	160	160	200	240	160	200
Depth [mm]	105	34.5	34.5	53.5	53.5	53.5	53.5	53.5	53.5
Rated current max. [A]	80	16	32	16	25	32	16	25	32
Rated operational voltage [V]	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL
Pole count	3	3	3	3	3	3	3	3	3
Number of carrier rails	-	1	1	1	1	1	1	1	1
Number of positioning slides	-	-	-	1	1	1	1	2	2
Connection cables, cable diameter [mm <sup>2</sup> ]	-	2.5	6	2.5	4	6	2.5	4	6
Connection cables, cable diameter [mm <sup>2</sup> ]	-	12	10	12	10	10	12	10	12
Cable outlet	Above/under	-	-	-	-	-	-	-	-
Connecting terminal, cable diameter [mm <sup>2</sup> ]	1.5 - 16	-	-	-	-	-	-	-	-
Connecting terminal, cable diameter AWG	16-6	-	-	-	-	-	-	-	-

Feeder module and adapter	MSFI-125A	MSFAMCB-16A/L1	MSFAMCB-16A/L2	MSFAMCB-16A/L3	MSFAMCB-63A/L1	MSFAMCB-63A/L2	MSFAMCB-63A/L3	MSFANZM1-125A	MSFSVG-400VAC/24VDC/5A
Width [mm]	45	18	18	18	18	18	18	90	36
Height [mm]	160	160	160	160	160	160	160	160	160
Depth [mm]	81.5	45.5	34.5	34.5	34.5	34.5	34.5	35	159
Rated current max. [A]	125	16	16	16	63	63	63	160	
Rated operational voltage [V]	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	690 IEC / 600 UL	
Pole count	3	1	1	1	1	1	1	3	
Number of carrier rails	-	1	1	1	1	1	1	1	-
Number of positioning slides	-	-	-	-	-	-	-	-	-
Connection cables, cable diameter [mm <sup>2</sup> ]	-	2.5	2.5	2.5	10	10	10	43.2	-
Connection cables, cable diameter [mm <sup>2</sup> ]	-	14	14	14	8	8	8	-	-
Cable outlet	Above/under	-	-	-	-	-	-	-	-
Connecting terminal, cable diameter [mm <sup>2</sup> ]	6-50	-	-	-	-	-	-	-	1.5-2.5
Connecting terminal, cable diameter AWG	10-1	-	-	-	-	-	-	-	24-12

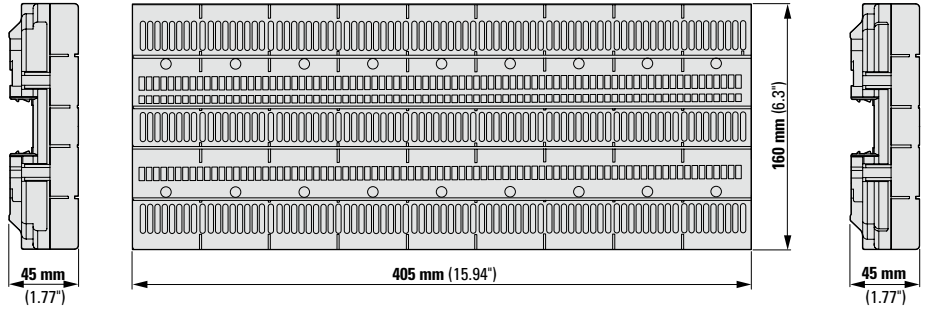
# Dimensions

## Base module

MSFB-4-125A

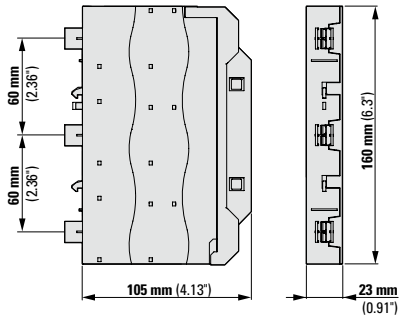


MSFB-8-125A

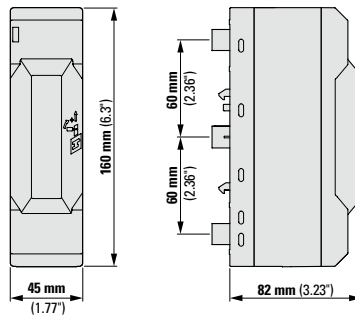


## Feeder module

MSFI-80A

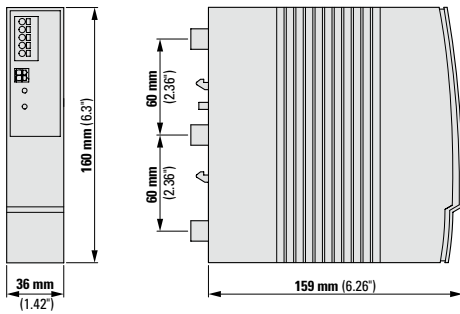


MSFI-125A



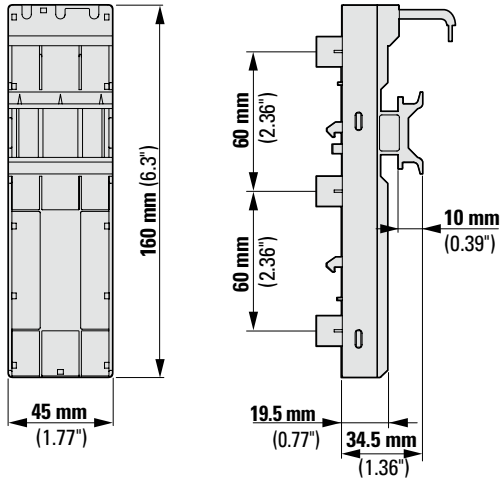
## Power supply

MSFSVG-400VAC

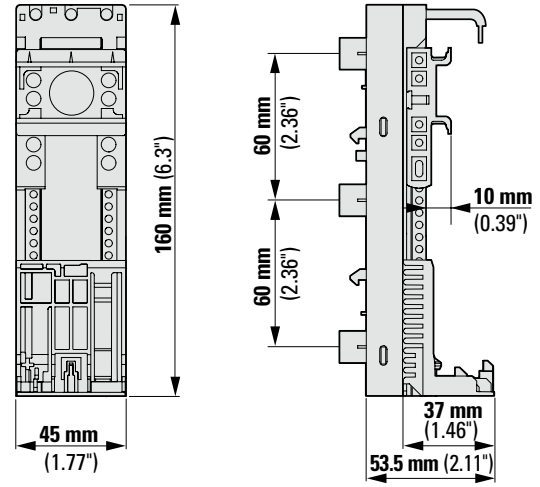


# Adapter

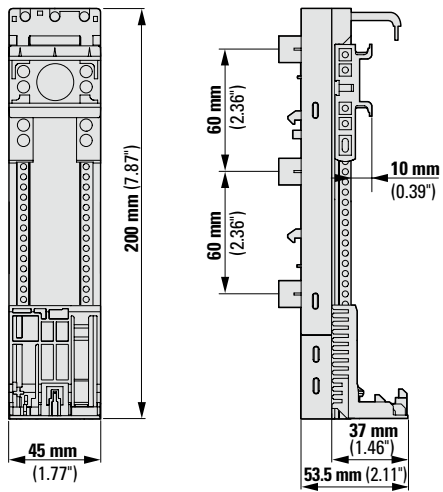
MSFA0-16  
MSFA0-32



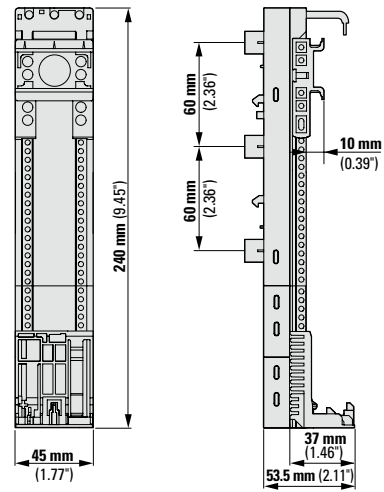
MSFAD-16  
MSFAD-25



MSFAD-32

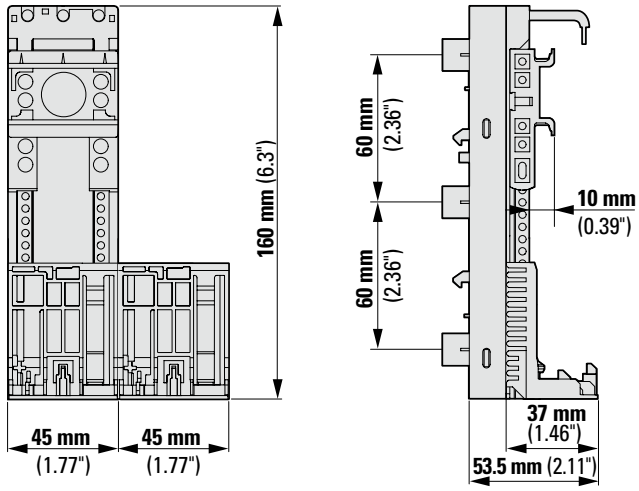


MSFAL-16

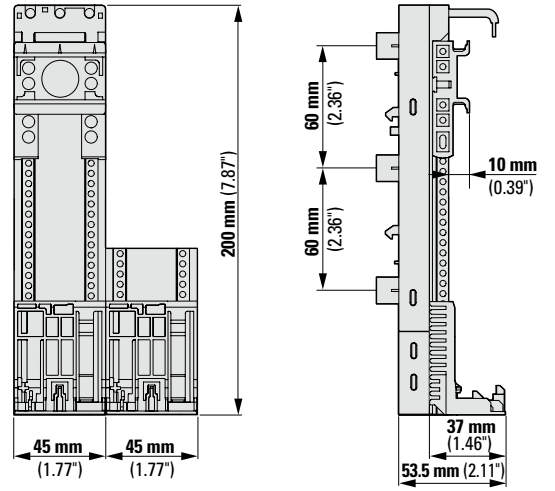


# Adapter

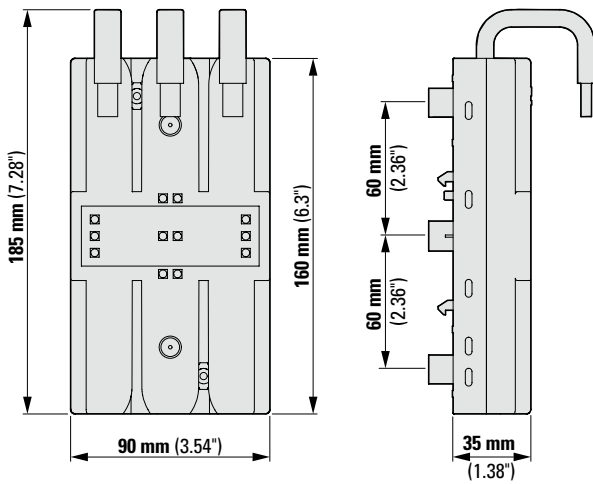
MSFAR-25



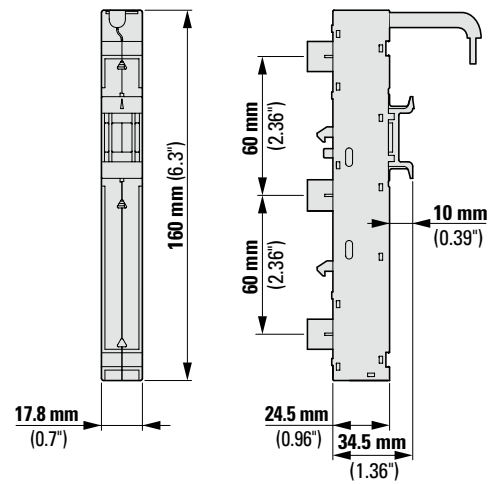
MSFAR-32



MSFA-NZM1



MSFAMCB



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