

MSK standard components

Premium components for your operation



Your benefits at a glance

- ✓ Proven machine availability
- ✓ Certified systems
- ✓ Quick delivery & commissioning

savings through technology

safety and quality ✓

MSK standard components

Your advantages

ePLAN®



Rockwell
Automation



SEW
EURODRIVE



Weidmüller



Our standard is your advantage

Carefully selected standard components on the basis of time-tested MSK technology makes your MSK machine a high-quality system. SEW gear motors, PLC control systems from Siemens, Schneider Electric or Allen Bradley, electrical cabinets from Rittal, and pneumatics from SMC or Festo: matched and tested **premium quality components** ensure a high degree of reliability.

Simple and efficient system

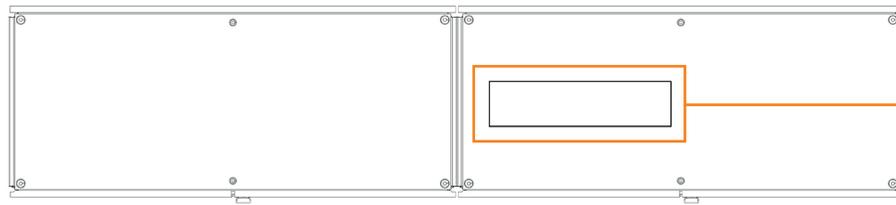
The need for technical clarification is minimized through the use of time-tested components. The usage of proven components facilitates an efficient and secure commissioning of application-specific film on the basis of existing parameter sets. This ensures the high quality of your complete system.

- Simplification of commissioning phase

Components in line with new European machinery directive

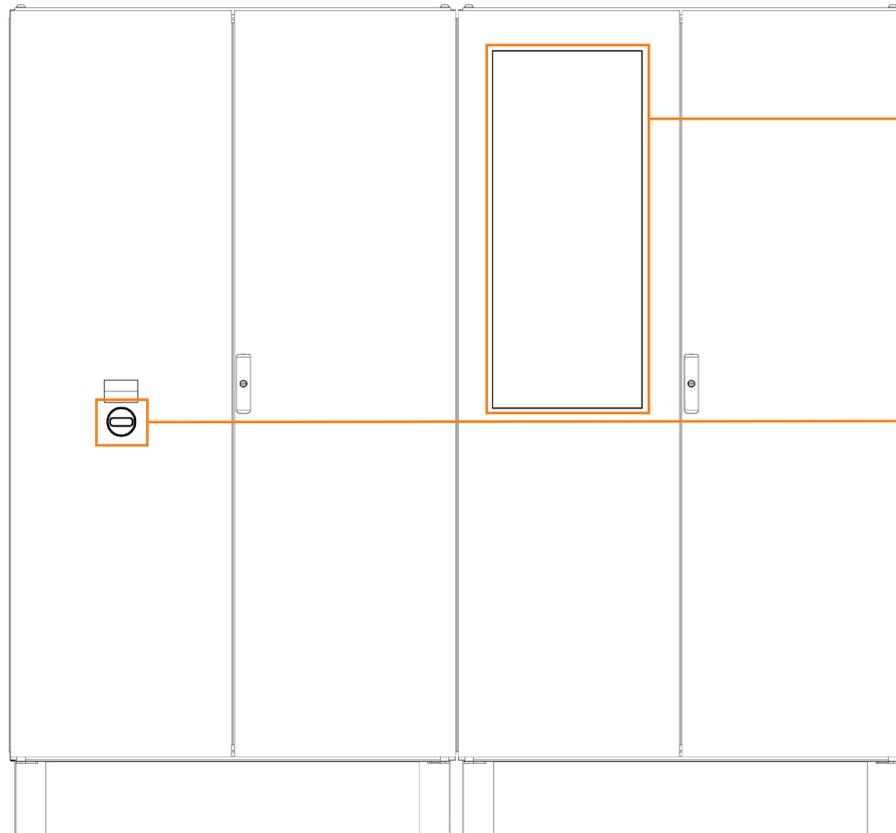
Standard components reduce the default risk to a minimum. The **machine availability** is proven through standardized risk analysis and is in accordance to the European machinery directive. Standard components are stocked at MSK and are quickly available.

- Proven availability



Top view

Braking resistors for inverters



Front view

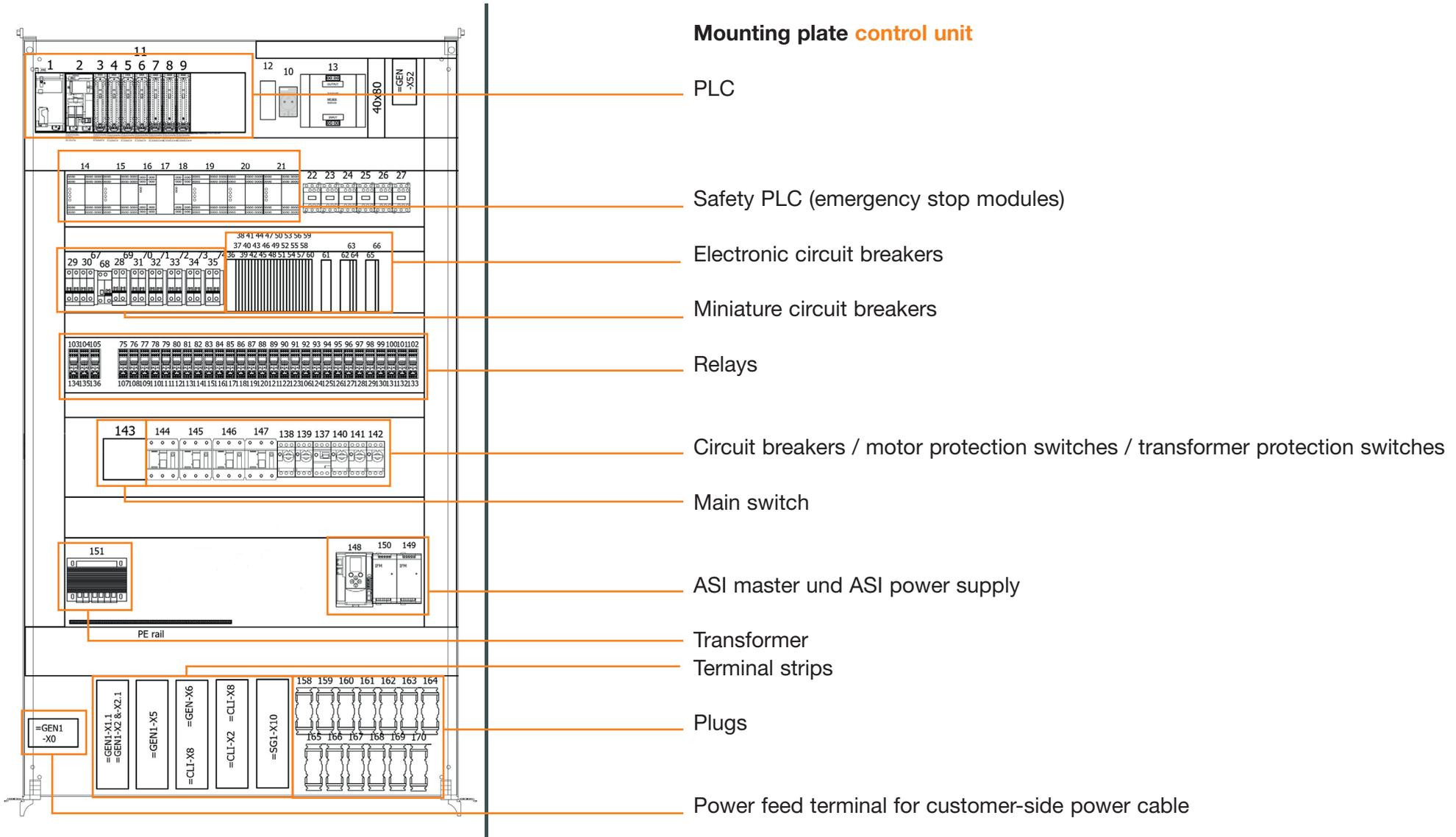
Climate control (air conditioner or fan)

Main switch

Note: The MSK Control cabinet includes all electrical components that are necessary for the control of the offered MSK System and meet the requirements of the Low-Voltage Directive (2006/95/EC) and the EMV Directive (2004/108/EC) as well as the DIN EN 60204-1:2019-06.

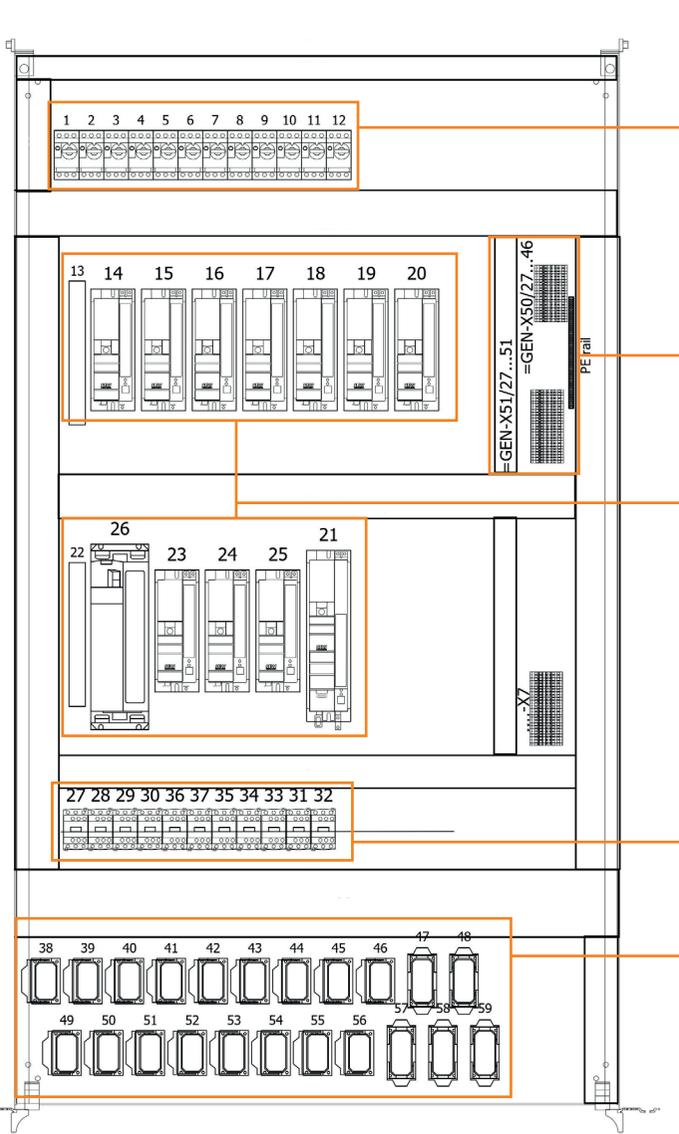
MSK standard components

Standard design of control cabinet - interior view



MSK standard components

Standard design of control cabinet - interior view



Mounting plate power unit

Transformer protection switches / motor protection switches
(can alternatively be mounted on busbar system)

Terminal strips

Inverters

Contactors

Plugs

Advantage: A space reserve of approx. 20% is provided for any future retrofits.

MSK standard components in detail

Component	Application	Type	Supplier	*	Notes	
Electrical components						
	Frequency inverters	High-feature drives (Servo) Standard drives Decentral drives	Movitrac C	SEW-EURODRIVE		
	Terminals	Potential electrical connection	ZDU	Weidmüller		
	Relays	Contact exchange Signal processing	MY4	OMRON		
	Contactors	Switching of power Switching of control signals Combination contactors / protective devices -> coordination type 2	LC1	Schneider Electric		
	Circuit breakers / Motor protection switches / Transformer protec- tion switches	Potential distribution Motor protection Transformer protection	GV2-P / GV3-P GV2-P GV2-RT	Schneider Electric		

MSK standard components in detail

Component	Application	Type	Supplier	*	Notes	
Electrical components						
	Miniature circuit breakers	230VAC 24VDC collective- / group signal	C60H C60L	Schneider Electric		
	Busbar system	Potential distribution, for systems with a main switch >125A	Mini PLS	Rittal		
	Main switch	Disconnecter Machine protection	NG125N (<=125A) CVS (>125A)	Schneider Electric		
	Transformators	Increase or decrease the AC voltage	ST	Robers & Brandt		
	Power supplies	Input voltage (DC voltage or alternating voltage) converted into a DC voltage	Emparro 20	Murr		

MSK standard components in detail

Component	Application	Type	Supplier	*	Notes	
Electrical components						
	Control cabinets	The control cabinet houses the electrical equipment required to control the machine	VX 25	Rittal		
	Slim case and compact control cabinet	The switching cabinet houses the electrical equipment required to control the machine	A.. EB	Bopla Rittal		
	Socket switch connectors	Electrical connection between the control cabinet and the machine		Harting		
	Operating elements	Elements required to operate the machine in manual, setup, and automatic mode as well as setting parameters	ZB5	Schneider Electric		
	Operator panels	Panels required to operate the machine in manual, setup, and automatic mode as well as setting parameters	MSK EMSY 15,6"	Beckhoff Hardware		

MSK standard components in detail

Component	Application	Type	Supplier	*	Notes	
Electrical components						
	Safety programmable PLC	Quickly places the system into a safe state if a hazardous situation occurs	FlexiSoft	Sick		
	Proximity switches	Contactless positioning	IME	Sick		
	Pulse counting	Contactless positioning through HTL encoder	EK8S, RH1M	SEW-EURODRIVE		
	Light barriers (reflection)	Position detection, space query, contour scanning	WL280	Sick		

MSK standard components in detail

Component	Application	Type	Supplier	*	Notes
Electrical components					
	Safety light curtains	PLc PLd PLe	M4000 M4000	Sick	
	Door switches	Depends on machine type Door switches Contactless door switches	Trojan 5 T4000	Rockwell Automation Sick	
	PLC	Siemens (D, F) - TIA Portal Allen Bradley (USA, GB)	CPU 1500 series Controllogix	Siemens Allen Bradley	
	Gear motors	Electric impulse for movements	DRN CMP / CM3C	SEW-EURODRIVE	

MSK standard components in detail

Component	Application	Type	Supplier	*	Notes
Electrical components					
	Linear position sensor	Recognition travelling and position distance	Li	Turck	
	ASI bus	Intelligent field I/O systems		IFM	
	Temperature controllers	Welding of film	RES403	Ropex	
Visualization					
	Visualization	Parameter display and settings on the control panel	MSK EMSY	MSK	

MSK standard components in detail

Component	Application	Type	Supplier	*	Notes
Communication					
 <p>Control level</p>	Control level	Customer management (Scada, ERP, etc.)	Ethernet		
 <p>Process level</p>	Process level	Machinery (control, peripheral systems)	PROFINET	Siemens	
 <p>Sensor-Actuator level</p>	Sensor-Actuator level	Intelligent field I/O systems Valve control	ASI-Bus PROFINET	IFM	
	Remote maintenance	Communication between MSK and the machine disturbance case or servicing case	MSK IXON cloud and IXON router	IXON	

MSK standard components in detail

Component	Application	Type	Supplier	*	Notes
Pneumatical components					
	Solenoid valves	Pneumatic control of cylinder	SMC Festo		
	Cylinders	Pneumatic actuator	SMC Festo		
	Maintenance unit	Filtering, pressure regulating, closeable by service application (switching on not possible), safety valve included	SMC Festo		
	Valve control	Pneumatic control	Valve control Airbox SMC / Festo IFM		

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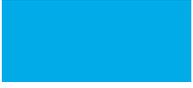
Component	Application	Type	Supplier	*	Notes
Mechanical components					
	Linear bearings	Depends on machine type	Bosch-Rexroth SNR		
Labelling					
	Component labelling	Control cabinet	THM MT30X 17/8 GE	Weidmüller	
	Component labelling	Machine (heat and UV resistant)	THM MT30X 17/8 GE	Weidmüller	
	Labelling of cables	Heat and UV resistant	SFX11/60 yellow	Weidmüller	

MSK standard components in detail

Component	Application	Type	Supplier	*	Notes
Documentation					
	Electrical wiring plans through CAE-software	EPLAN Electric P8			
	PLC-program print	Siemens TIA Portal			
Network form					
Network form	Electrical energy supply	TN-Network	Customer network		

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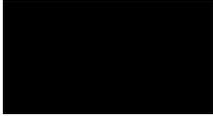
Cable colors

Cable	Comment	*
Colors		
	L1	Black 
	L2	Black 
	L3	Black 
	N	Light blue 
	PE (earth)	Green / Yellow 
	24V DC +	Dark blue 
	24V DC -	Dark blue 
	24V DC switched	Dark blue 
	24V DC input	Dark blue 

Cable	Comment	*
Colors		
	24V DC output	Dark blue 
	230V AC	Red 
	0V AC	Red 
	Analog measurement 0-10V	LiYCY 
	Analog measurement 4-20mA	LiYCY 
	Welding voltage (<=55V AC)	Black 
	Welding voltage (0V AC)	Black 
	Wiring functional earth	Blue / White 
	Wiring external voltage	Orange 

MSK standard components

Standard finishing for machines and machine parts

Color	Comment	*	Notes
Standard-finishing, powder-coated			
	RAL 2000 Yellow orange	Machine frame and conveyor technology	
	RAL 7031 Blue grey	Machine frame and conveyor technology	
	RAL 9005 Jet black	Safety guards	
	RAL 1021 Rape yellow	Moving parts	
	RAL 2000 Yellow orange	Moving parts	
	RAL 7035 Light grey	Control cabinets	
	As provided by the manufacturer	Motors	

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Optional finishing for machines and machine parts

Color	Comment	*
 RAL 5015 ** Sky blue		
 RAL 5005 ** Signal blue		
 RAL 9003 ** Signal white		
 RAL 1015 ** Light ivory		

Color	Comment	*
 RAL 3020 ** Traffic red		
 RAL 5017 ** Traffic blue		
 RAL 6011 ** Reseda green		
 RAL 9006 ** White aluminium		

** These optional finishing variants for machinery, conveyor technology and safety guard are available against **additional charge**.

Unlisted RAL colors are possible on request and against a separate offer.