

SIEMENS

Ingenuity for life

SIRIUS
Hybrid

Start-up with a small footprint

SIRIUS 3RM1 Motor Starter –
multifunctional with a width of
just 22.5 mm

usa.siemens.com/controls

Getting started – even when things get tight: SIRIUS 3RM1 Motor Starters

Space-saving systems require maximum efficiency and can pose significant challenges for system engineers. Systems and machinery are becoming increasingly compact and are expected to have smaller footprints, but at the same time they typically require more auxiliary drives. Because every inch counts in a control cabinet, SIRIUS 3RM1 Motor Starters are precisely tailored to meet these requirements and represent the solution for the development of cutting-edge and future-oriented systems.

Their innovative housing concept even received the internationally renowned iF product design award 2013. It's easy to get started: The new motor starters are so narrow that they fit into the smallest space.

In brief: SIRIUS 3RM1 Motor Starters – multifunctional with a width of just 22.5 mm.

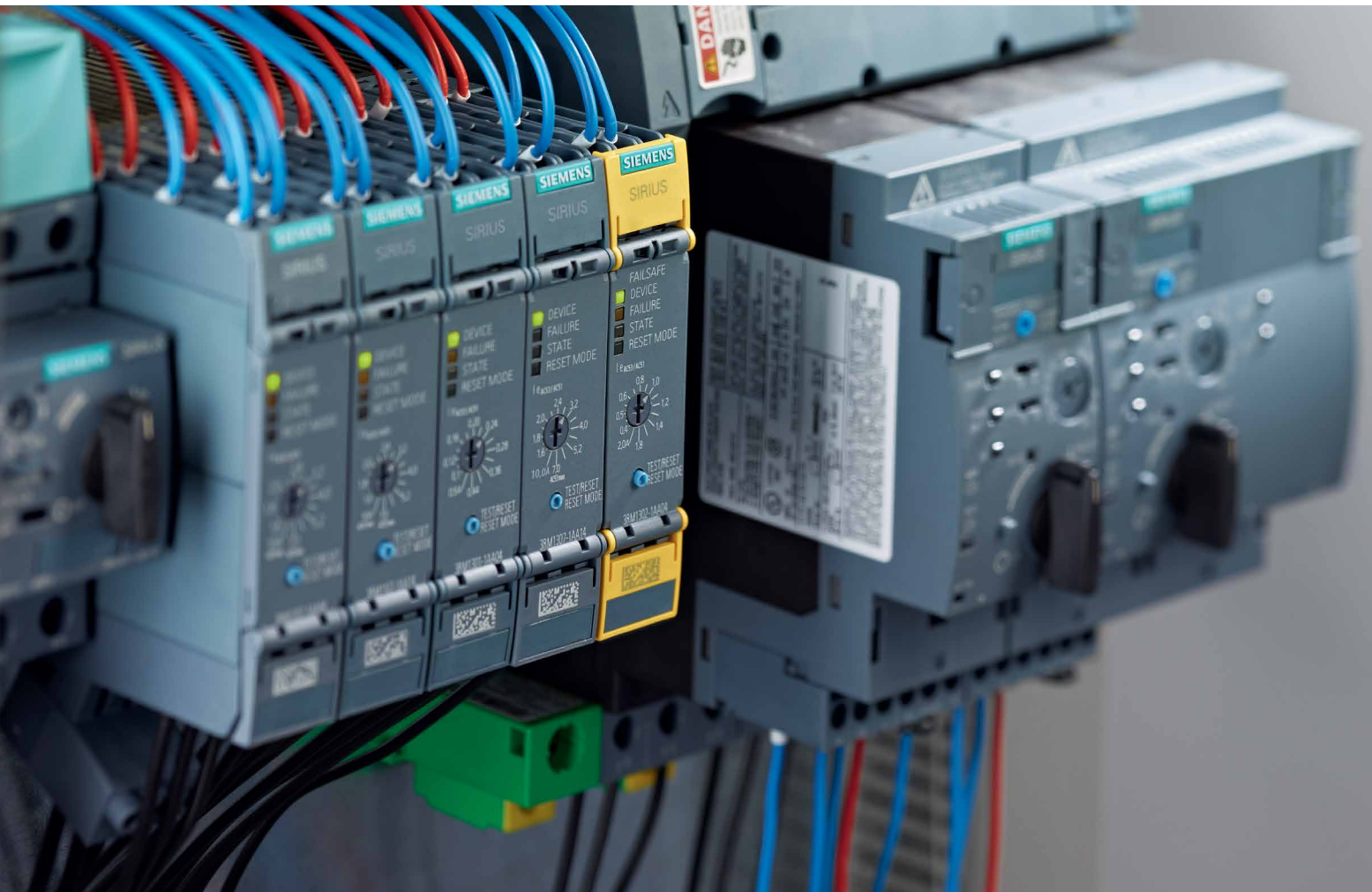


Direct or reversing starting – with SIRIUS 3RM1 Motor Starters, you can implement compact control cabinet solutions for small motors up to 3 kW.

The SIRIUS 3RM1 Motor Starters are designed for installation in control cabinets and require minimal space: They combine the functionality of contactors and overload relays in a width of just 22.5 mm. In addition, thanks to their use of hybrid switching technology, they have all the benefits of the relay and semiconductor technology in a single device, which increases their cost-effectiveness.

The motor starters make your work easier by offering easy adjustment of motor current, minimal wiring costs, and fast troubleshooting. With these motor starters, you can build more compact control cabinets and increase the efficiency of your systems while saving time and money in the installation.

3RM1 motor starters can optionally be used in combination with a fuse module for short-circuit protection on all 60 mm busbar systems using a range of adapters.



Compact

- Narrow width
- Multifunctionality
 - Direct and reversing starters
 - Overload protection
 - Safe shutdown

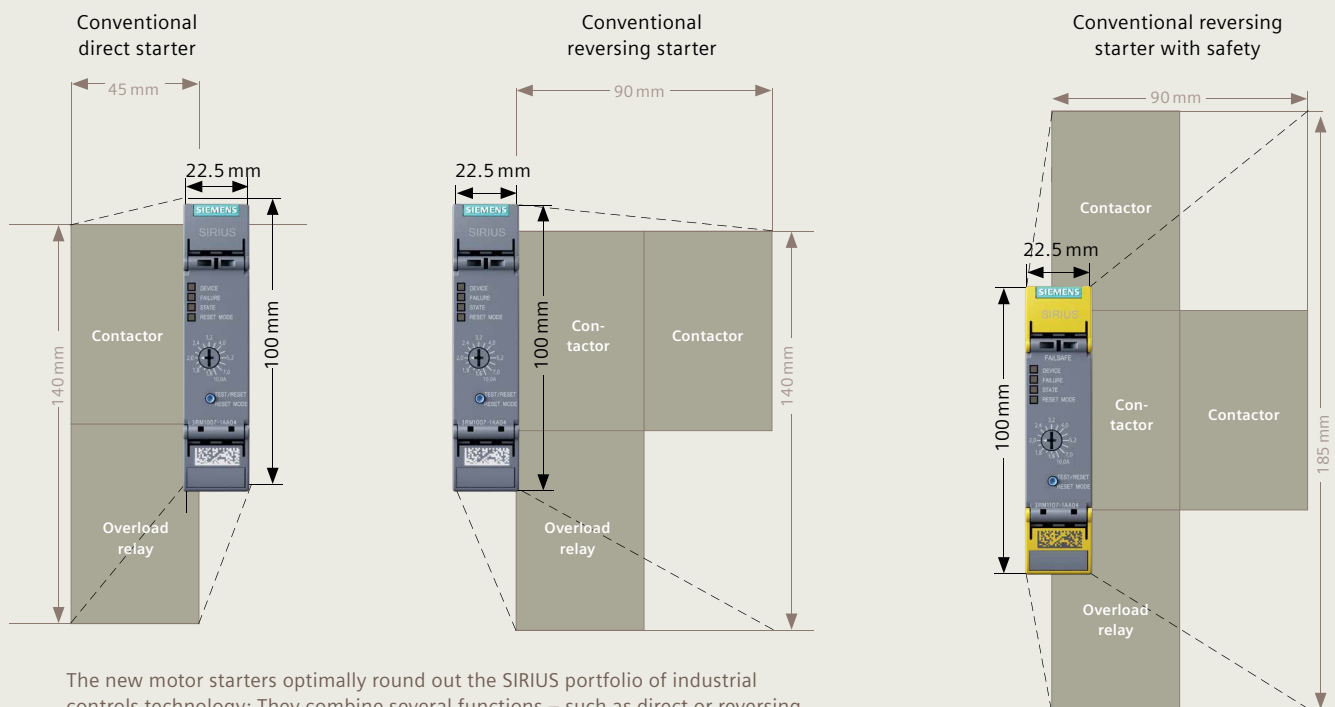
Economical

- Durable and energy-efficient hybrid switching technology
- Low device variance through wide adjustment range

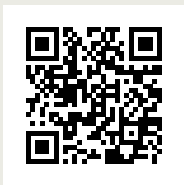
Simple

- Less wiring
 - in control circuit thanks to device connectors
 - in main circuit with the infeed system
- Fast diagnostics
- Compact mounting on busbar systems using the 3RM19 fuse module

In a width of just 22.5 mm there is now room for so many functions



The new motor starters optimally round out the SIRIUS portfolio of industrial controls technology: They combine several functions – such as direct or reversing start, overload protection, and safe shutdown – into a uniformly compact and extremely narrow housing.



Scan and learn more about space savings in control cabinets!

Narrow width

The motor starters are distinguished by their narrow width of just 22.5 mm. That saves room in the control cabinet and provides the ideal conditions for systems and machines with many small motors up to 3 kW.

Even subsequent expansions are easier to plan and implement: If more motors are needed in the system, thanks to their narrow width it's easy to add additional SIRIUS 3RM1 Motor Starters to the ones already installed in the control cabinet.

SIRIUS 3RM1 Motor Starters – the compact solution

Multifunctional

Direct and reversing starters

Motor starters are available as direct starters or with a reversing starter function, all in a uniform housing design. The operation, configuration, and the width for both device types are identical.

Overload protection

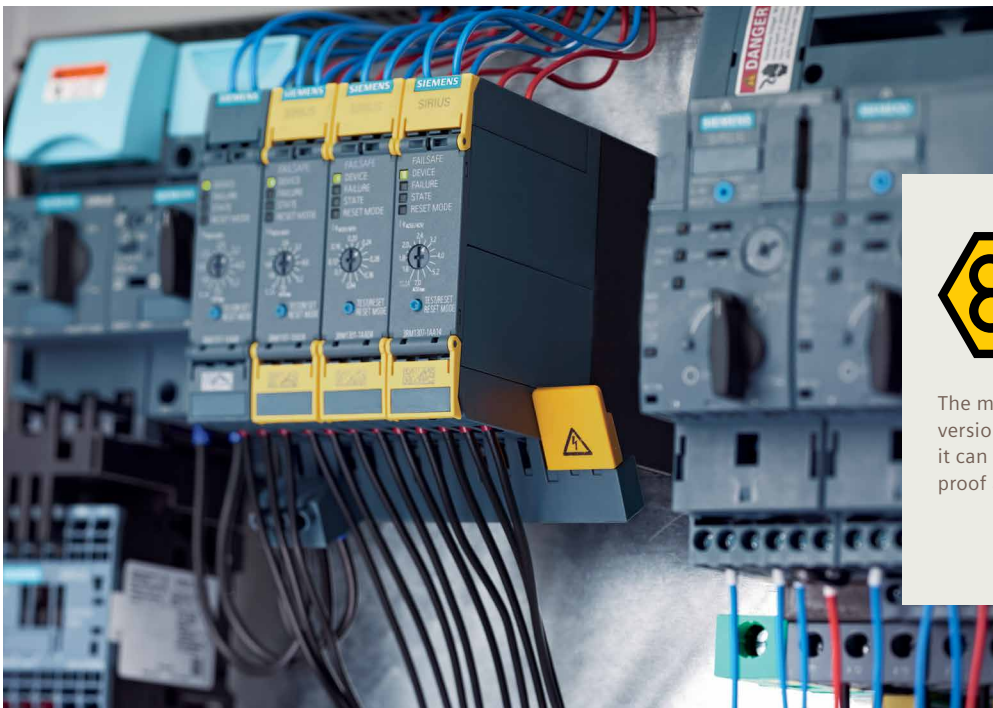
Every motor starter is equipped with integrated electronic overload protection. In other words, you no longer need a separate overload relay when you use these motor starters. The result is lower wiring costs, shorter installation time and more room on the DIN rail.

Safe shutdown

To meet the requirements for safe shutdowns, SIRIUS 3RM1 Motor Starters are also available in a safety version. They can be used in combination with the modular safety relays to easily implement locally limited safety applications.

The motor starters for safe shutdowns are available as direct and reversing starters.

They are certified in accordance with SIL 3/PL e Cat. 4.



The motor overload protection of the safety version is ATEX certified, which means that it can also be used for motors in explosion-proof areas with flammable dust and gases.

Efficiency that drives

Increase the efficiency in the control cabinet with energy-efficient and durable technology and benefit from a clear spectrum of devices.

Durable and energy-efficient

Hybrid switching technology uses low-wear semiconductor technology for turning the motor on and off; during operation, it uses energy-efficient relay technology. That provides durability, particularly in cases of high switching frequency. This technology significantly reduces maintenance costs and extends the service life of the motor starters. In addition, thanks to the hybrid switching technology, the motor starters have a lower level of electromagnetic interference, which increases the availability of your systems.

Further energy savings are provided by the integrated electronic overload protection. It causes a lower intrinsic power loss than comparable motor feeders with thermal overload protection. In this way, you benefit from reduced heat generation and therefore lower cooling power. That saves energy.

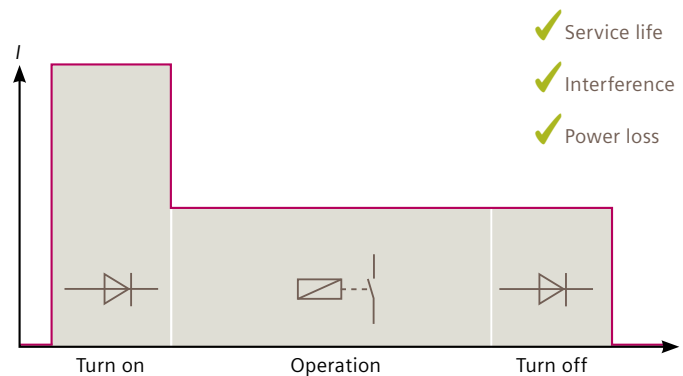
Flexible use

SIRIUS 3RM1 Motor Starters give you greater latitude when it comes to project planning as well as motor replacements: You can use a rotary encoder switch to easily set the motor starters in their specific adjustment range to the current of the connected motor.

That reduces the number of device variants and saves on storage space and handling costs. Moreover, your options are kept open for longer when planning and engineering motors and control cabinets. And, if a motor is later replaced by a more powerful or less powerful model, in most cases you can simply readjust the existing motor starter and do not need to replace it.



Scan and experience the benefits of hybrid switching technology!



The hybrid switching technology of the motor starters combines the benefits of relay technology with those of semiconductor technology, making it particularly energy-efficient while offering low wear and low interference.

Simplicity that pays off

Reduced wiring

Control circuit

For simultaneous safety-oriented tripping of multiple motor starters via a SIRIUS 3SK safety relay, you can simply interconnect devices using a device connector, without any wiring. This also relays the power supply.

Main circuit

The power supply in the main circuit for multiple motor starters can be handled quickly, simply, and safely via a special system: The motor starters are interconnected via 3-phase busbars and powered via a 3-phase infeed terminal. The special shape of the busbars allows quick and simple removal of individual devices from the infeed network.

Simple design of load feeders

Very compact load feeders with a narrow width of just 22.5 mm can be implemented using the fuse module. A corresponding adapter connects the module to the busbar system. The plug-in connection makes it even easier to replace motor starters, for example, if outputs need to be adjusted. Expansions can easily be added later into spare slots without having to install power supply cables.

Simple connection

You benefit from convenient connections when wiring the devices. The screw-type terminals for the control circuit have an optimized insertion angle so that tool and cable can be inserted from the same direction. The spring-loaded terminals are wired without tools: simply insert the cable manually – done!

If necessary, you can individually swap out the removable connection terminals on the unit.

Easy-to-read status indicator

Thanks to the LED status indicator on the housing of the SIRIUS 3RM1 Motor Starters, you can see at a glance whether all the functions are in operation or if there are any problems. This makes it possible to quickly detect and correct any faults.



The optional fuse module can be used to create complete load feeders.

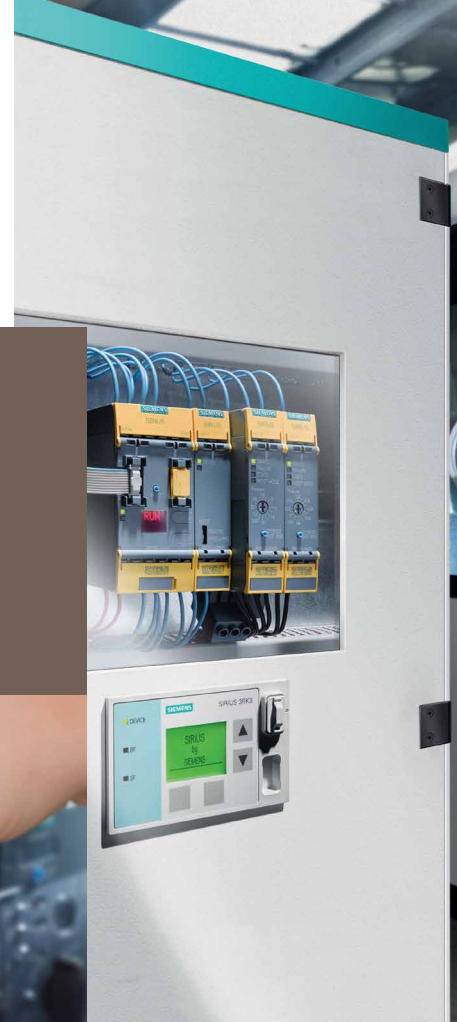
Save time during installation thanks to simple wiring, and during operation thanks to clear status indication. Whether for configuring, installation or maintenance – these motor starters make everything easier for you.

- 1 SIRIUS 3RM19 fuse module
- 2 SIRIUS 3RM1 motor starter
- 3 Adapter for busbar system
- 4 Adapter for compact busbar system
- 5 Cover profiles for busbars



Controlling smaller motors

SIRIUS 3RM1 Motor Starters can be used with a wide range of motors up to 3 kW. They are particularly well suited for use in machine tool and production machine construction – whether as an individual device, or as components in a group design for applications with or without safe shutdown requirements.



Diverse range of applications

SIRIUS 3RM1 Motor Starters can be used in many industrial areas to control auxiliary motors, such as for pumps, fans, and hoisting equipment, in machine tool and production machines, as well as in conveyor technology. The devices are optimally suited for group configurations in which multiple motor starters can be protected by only one circuit breaker.

The motor starters for safe shutdown can be flexibly combined with a wide variety of safety relays and fail-safe controls.

Ideal addition to the SIRIUS switching technology portfolio

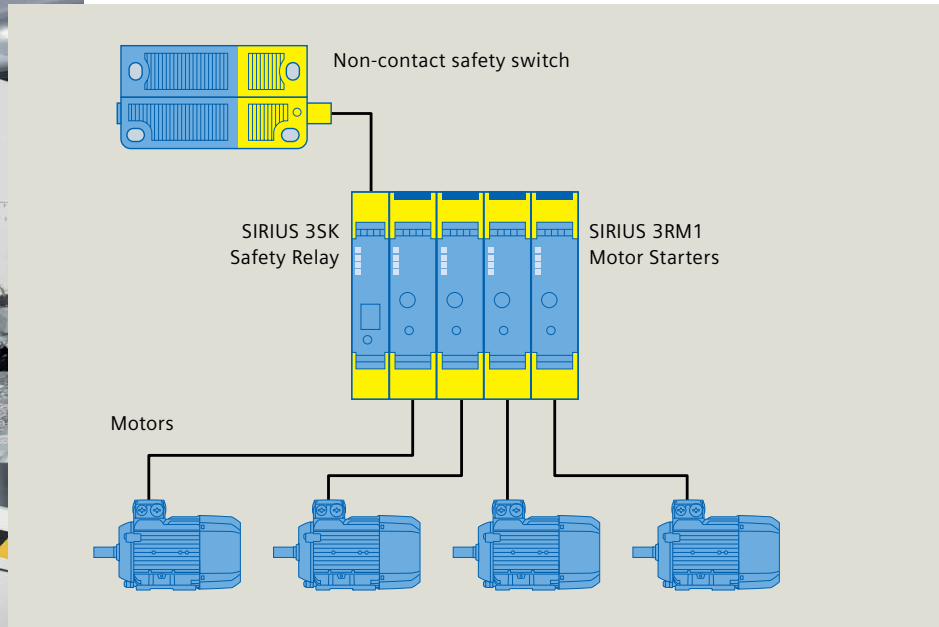
The SIRIUS portfolio is ideally positioned for higher switching currents. The new motor starters perfectly round out the existing SIRIUS industrial switching technology portfolio in the field of smaller motors. With a width of just 22.5 mm, the new SIRIUS 3RM1 Motor Starters are perfect for control cabinets where space is at a premium.



Scan und experience the safe shutdown of a system for yourself!



Combination of one SIRIUS 3SK safety relay and four motor starters for a safe group shutdown.



Group design for a conveyor system

With SIRIUS 3RM1 Motor Starters, you can quickly and easily implement group installations with integrated overload protection for a wide range of applications – one example would be for conveyor systems with numerous electric motors. In the main circuit, the three-phase feeder terminal and three-phase busbar supply the motor starters, eliminating the need for complex wiring for the infeed. In a group design, a single circuit breaker can provide short circuit protection up to 55 kA.

Significant provisions are in place for the expansion of the conveyor system – the infeed system has the flexibility to be expanded, allowing additional motor starters to be integrated into an existing group design with minimal effort. Project planning is simplified through the new motor starter configurator.

Safe shutdown in a filling system

The combination of fail-safe SIRIUS 3RM1 Motor Starters with SIRIUS 3SK Safety Relays makes it easy to implement locally limited safety applications. One example can be found in the protective door monitoring of a machine, that safely shuts down when the protective door is opened.

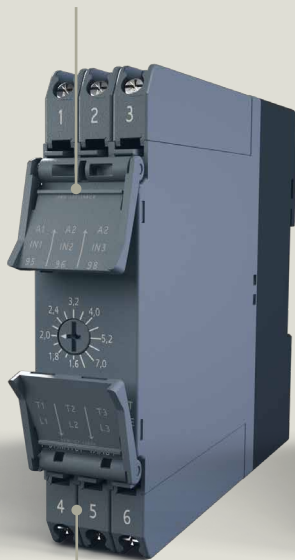
To accomplish this, the motors of the pumps are connected to the new motor starters. On the control current side, the motor starters are connected to a SIRIUS 3SK Safety Relay via the device connector. If the monitored door is opened, the safety relay receives a signal from a connected non-contact safety switch, evaluates it, and sends the information to all the motor starters in the group via the device connector. The fail-safe motor starters react by safely shutting down all connected motors.

The infeed system supplies group configurations up to a total current of 25 A.

Innovative housing concept

Labeled hinged covers

Simple orientation thanks to laser labeling for the individual connections in the cover



Connection terminals

Easily replaceable connection terminals, available with screw-type or spring-loaded technology



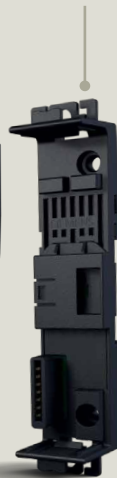
Screw-type connection



Spring-loaded connection

Device connector

Easy, wireless connection of multiple motor starters for connecting to SIRIUS 3SK Safety Relays for safe shutdown



Sealable cover

Simple protection against unauthorized access

Width

Economical, space-saving width of just 22.5 mm



LED status indicator

Fast, selective start-up, and clear LED error display

- DEVICE
- FAILURE
- STATE
- RESET MODE

Rotary encoder switch

Easy setting of the motor current to be monitored

- 2,4
- 3,2
- 4,0
- 5,2
- 7,0
- 10,0A
- 1,8
- 1,6

Test/reset button

Acknowledgement if a malfunction occurs

1. Reset in case of overload
2. Implement the test function
3. Switch from manual to automatic reset

- TEST/RESET
- RESET MODE

2D matrix code

Fast and easy scanning of order and serial numbers; corresponding Siemens app available at www.siemens.com/sirius/support-app

The right type for you

Our transparent product portfolio and the online configurator make it a snap to choose the motor starter you need – in just four steps.

www.siemens.com/3rm1/configurator

Step 1:

To find the right motor starter, you first need to decide whether you need a device with or without the integrated safety function as well as whether you want a direct or a reversing starter.

Step 2:

Decide between the three motor current ranges 0.1 ... 0.5 A; 0.4 ... 2.0 A; and 1.6 ... 7.0 A (even for resistive loads of up to 10 A). You can subsequently set the level of the motor current to be monitored via the rotary encoder switch on the motor starter – and if the application changes, you can make adjustments within the specific wide setting range.

Step 3:

For additional product specification, choose between the two control voltages 24 V DC and 110 – 230 V AC, 110 V DC.

Step 4:

Finally, you need to decide which connection technology you prefer: spring-loaded connections or screw-type connections.

All the product data you need for planning your control cabinet is available free of charge via CAx Download Manager: Available data includes 3D models, dimension drawings, manuals, and .edz macros for EPLAN Electric P8. For more information, visit www.siemens.com/planning-efficiency

Order number overview SIRIUS 3RM1 Motor Starter

Order no.				Three-phase standard motor ¹⁾	Adjustment range
				Standard power rating P	Electronic overload release
3RM1	01	AA	4	0 ... 0.12 kW	0.1 ... 0.5 A
3RM1	02	AA	4	0.09 ... 0.75 kW	0.4 ... 2.0 A
3RM1	07	AA	4	0.55 ... 3 kW	1.6 ... 7.0 A, (10 A) ²⁾
			0 1	DC 24 V AC 110 ... 230 V; DC 110 V	Rated control supply voltage V _s
		1 2 3		Screw-type connection Spring-loaded connection Mixed connection technology ³⁾	Connection technology
	0 1 2 3			Direct starter Fail-safe direct starter Reversing starter Fail-safe reversing starter	Function

¹⁾ Base 4-pin with AC 400 V; the concrete start-up and rated data of the motor should be taken into consideration for the selection

²⁾ Operation of ohmic loads with a maximum of 10 A

³⁾ Control circuit implemented as a push-in spring-loaded connection and main circuit as a screw-type connection

SIRIUS 3RM1
Motor
Starters –
scan and view



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