

# Industrial Controls

SIRIUS 3R\_1\* in sizes S00/S0 to S12

Catalog Add-On IC 10 AO · 2012



## SIRIUS

Answers for industry.

**SIEMENS**

# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

### Accessories

#### Mountable accessories

#### Overview

##### Mounting location and function

The 3RV1 motor starter protectors have three main contact elements. In order to achieve maximum flexibility, auxiliary switches, signaling switches, auxiliary releases and isolator modules can be supplied separately.

These components are easily fitted to the switches without the use of any tools according to requirements.

Overview graphic [see page 7/5 onwards](#).

<p><b>Front panel</b></p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> <li>• A maximum of 4 auxiliary contacts with auxiliary switches can be attached to each motor starter protector.</li> <li>• Transverse auxiliary switches must not be used for the 3RV17 and 3RV18 circuit breakers.</li> </ul>	<p><b>Transverse auxiliary switches, solid-state compatible transverse auxiliary switches</b></p> <p>1 NO + 1 NC or 2 NO or 1 CO</p>	<p>An auxiliary switch block can be inserted transversely on the front. The overall width of the motor starter protectors remains unchanged.</p>
<p><b>Left-hand side</b></p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> <li>• A maximum of 4 auxiliary contacts with auxiliary switches can be attached to each motor starter protector.</li> <li>• Auxiliary switches (2 contacts) and signaling switches can be mounted separately or together.</li> <li>• The signaling switch cannot be used for the 3RV17 and 3RV18 circuit breakers.</li> </ul>	<p><b>Lateral auxiliary switches (2 contacts)</b></p> <p>1 NO + 1 NC or 2 NO or 2 NC</p> <p><b>Lateral auxiliary switches (4 contacts)</b></p> <p>2 NO + 2 NC</p>	<p>One of the three lateral auxiliary switches can be mounted on the left side per motor starter protector. The contacts of the auxiliary switch close and open together with the main contacts of the motor starter protector.</p> <p>The width of the lateral auxiliary switch with 2 contacts is 9 mm.</p> <p>One lateral auxiliary switch with four contacts can be mounted on the left side per motor starter protector. The contacts of the auxiliary switch close and open together with the main contacts of the motor starter protector.</p> <p>The width of the lateral auxiliary switch with 4 contacts is 18 mm.</p>
	<p><b>Signaling switches for sizes S0, S2, and S3</b></p> <p>Tripping 1 NO + 1 NC Short circuit 1 NO + 1 NC</p>	<p>One signaling switch can be mounted on the left side of each motor starter protector.</p> <p>The signaling switch has two contact systems.</p> <p>One contact system always signals <b>tripping</b> irrespective of whether this was caused by a short circuit, an overload or an auxiliary release. The other contact system only switches in the event of a short circuit. There is no signaling as a result of <b>switching off</b> with the handle.</p> <p>In order to be able to switch on the motor starter protector again after a short circuit, the signaling switch must be reset manually after the error cause has been eliminated.</p> <p>The overall width of the signaling switch is 18 mm.</p>
<p><b>Right-hand side</b></p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> <li>• One auxiliary release can be mounted per motor starter protector.</li> <li>• Accessories cannot be mounted at the right-hand side of the 3RV11 motor starter protectors for motor protection with overload relay function.</li> </ul>	<p><b>Auxiliary releases</b></p> <p>Shunt releases</p> <p>or</p> <p>Undervoltage releases</p> <p>or</p> <p>Undervoltage releases with leading auxiliary contacts 2 NO</p>	<p>For remote-controlled tripping of the motor starter protector. The release coil should only be energized for short periods (see circuit diagrams).</p> <p>Trips the motor starter protector when the voltage is interrupted and prevents the motor from being restarted accidentally when the voltage is restored. Used for remote-controlled tripping of the motor starter protector.</p> <p>Particularly suitable for EMERGENCY-STOP disconnection by way of the corresponding EMERGENCY-STOP pushbutton according to IEC 60204-1.</p> <p>Function and use as for the undervoltage release without leading auxiliary contacts, but with the following additional function: the auxiliary contacts will open in switch position OFF to deenergize the coil of the undervoltage release, thus interrupting energy consumption. In the "tripped" position, these auxiliary contacts are not guaranteed to open. The leading contacts permit the motor starter protector to reclose.</p> <p>The overall width of the auxiliary release is 18 mm.</p>
<p><b>Top</b></p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> <li>• The isolator module cannot be used for the 3RV17 and 3RV18 circuit breakers.</li> <li>• The isolator module covers the terminal screws of the transverse auxiliary switch. If the isolator module is used, we therefore recommend that either the lateral auxiliary switches be fitted or that the isolator module not be mounted until the auxiliary switch has been wired.</li> </ul>	<p><b>Isolator modules for sizes S0 and S2</b></p>	<p>Isolator modules can be mounted to the upper terminal end of motor starter protector of sizes S0 and S2.</p> <p>The supply cable is connected to the motor starter protector through the isolator module.</p> <p>The plug can only be unplugged when the motor starter protector is open and isolates all 3 poles of the motor starter protector from the network. The shock-protected isolation point is clearly visible and secured with a padlock to prevent reinsertion of the plug.</p>






For a complete overview of which accessories can be used for the various motor starter protectors, [see page 7/2](#).

# Motor Starter Protectors



## SIRIUS 3RV1 motor starter protectors up to 100 A

Accessories  
Mountable accessories

### Selection and ordering data

Version	Contacts	For motor starter protectors	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	
				Order No.	Price € per PU				
				Size					
<b>Auxiliary switches<sup>1)</sup></b>									
 3RV19 01-1E	<b>Transverse auxiliary switches</b> with screw terminals, mountable on front	1 CO 1 NO + 1 NC 2 NO	S00, S0, S2, S3	▶ ▶ ▶	<b>3RV19 01-1D</b> <b>3RV19 01-1E</b> <b>3RV19 01-1F</b>	1 1 1	1 unit 1 unit 1 unit	41E 41E 41E	
 3RV19 01-1G	<b>Solid-state compatible transverse auxiliary switches</b> with screw terminals, front mountable, for operation in dusty atmosphere and in solid-state circuits with low operating currents	1 CO	S00, S0, S2, S3	A	<b>3RV19 01-1G</b>	1	1 unit	41E	
 3RV19 01-0H	<b>Covers for transverse auxiliary switches</b>	--	S00, S0, S2, S3	▶	<b>3RV19 01-0H</b>	1	10 units	41E	
 3RV19 01-1A	<b>Lateral auxiliary switches</b> With screw terminals, mountable on the left	1 NO + 1 NC 2 NO 2 NC 2 NO + 2 NC	S00, S0, S2, S3	▶ ▶ ▶ A	<b>3RV19 01-1A</b> <b>3RV19 01-1B</b> <b>3RV19 01-1C</b> <b>3RV19 01-1J</b>	1 1 1 1	1 unit 1 unit 1 unit 1 unit	41E 41E 41E 41E	
 3RV19 01-1J									

1) Each motor starter protector can be fitted with one transverse and one lateral auxiliary switch. The lateral auxiliary switch with 2 NO + 2 NC is used without a transverse auxiliary switch. Transverse auxiliary switches must not be used for the 3RV17 and 3RV18 circuit breakers.

Version	Contacts	For motor starter protectors	DT	Spring-type terminals	⊕	PU (UNIT, SET, M)	PS*	PG	
				Order No.	Price € per PU				
				Size					
<b>Auxiliary switches<sup>1)</sup></b>									
 3RV19 01-2E	<b>Transverse auxiliary switches</b> With spring-type terminals, mountable on the front	1 NO + 1 NC 2 NO	S00, S0, S2, S3	▶ ▶	<b>3RV19 01-2E</b> <b>3RV19 01-2F</b>	1 1	1 unit 1 unit	41E 41E	
 3RV19 01-2A	<b>Lateral auxiliary switches</b> With spring-type terminals, mountable on the left	1 NO + 1 NC 2 NO 2 NC	S00, S0, S2, S3	▶ ▶ ▶	<b>3RV19 01-2A</b> <b>3RV19 01-2B</b> <b>3RV19 01-2C</b>	1 1 1	1 unit 1 unit 1 unit	41E 41E 41E	



1) Each motor starter protector can be fitted with one transverse and one lateral auxiliary switch. Transverse auxiliary switches must not be used for the 3RV17 and 3RV18 circuit breakers.

# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

### Accessories

#### Mountable accessories



Version	For motor starter protectors	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
Size		Order No.	Price € per PU				
<b>Signaling switches<sup>1)</sup></b>							
	<b>Signaling switches</b> Separate tripped and short-circuit alarms, 1 NO + 1 NC each One signaling switch can be mounted on the left of the motor starter protector.	S0, S2, S3	▶	<b>3RV19 21-1M</b>	1	1 unit	41E
<b>Isolator modules<sup>1)</sup></b>							
	<b>Isolator modules</b> Visible isolating distance for isolating individual motor starter protectors from the network, lockable in disconnected position	S0 S2	▶ ▶	<b>3RV19 28-1A</b> <b>3RV19 38-1A</b>	1 1	1 unit 1 unit	41E 41E

3RV19 21-1M

3RV19 38-1A with padlock

1) This accessory cannot be used for the 3RV17 and 3RV18 circuit breakers.

Rated control supply voltage $U_s$					For motor starter protectors	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
AC 50 Hz	AC 60 Hz	AC 50/60 Hz	AC/DC 50/60 Hz, DC	DC	Size		Order No.	Price € per PU			
V	V	V	V	V							
		100 % ON period <sup>1)</sup>	5 s ON period <sup>2)</sup>								

<b>Auxiliary releases<sup>3)</sup></b>											
<b>Undervoltage releases</b>											
	--	--	--	--	24	S00, S0, S2, S3	A	<b>3RV19 02-1AB4</b>	1	1 unit	41E
	24	--	--	--	--	S00, S0, S2, S3	A	<b>3RV19 02-1AB0</b>	1	1 unit	41E
	110	120	--	--	--	S00, S0, S2, S3	A	<b>3RV19 02-1AF0</b>	1	1 unit	41E
	--	208	--	--	--	S00, S0, S2, S3	A	<b>3RV19 02-1AM1</b>	1	1 unit	41E
	230	240	--	--	--	S00, S0, S2, S3	▶	<b>3RV19 02-1AP0</b>	1	1 unit	41E
	400	440	--	--	--	S00, S0, S2, S3	▶	<b>3RV19 02-1AV0</b>	1	1 unit	41E
	415	480	--	--	--	S00, S0, S2, S3	A	<b>3RV19 02-1AV1</b>	1	1 unit	41E
	500	600	--	--	--	S00, S0, S2, S3	A	<b>3RV19 02-1AS0</b>	1	1 unit	41E
<b>Undervoltage releases with leading auxiliary contacts 2 NO</b>											
	230	240	--	--	--	S00	A	<b>3RV19 12-1CP0</b>	1	1 unit	41E
	400	440	--	--	--	S00	A	<b>3RV19 12-1CV0</b>	1	1 unit	41E
	415	480	--	--	--	S00	A	<b>3RV19 12-1CV1</b>	1	1 unit	41E
	230	240	--	--	--	S0, S2, S3	A	<b>3RV19 22-1CP0</b>	1	1 unit	41E
	400	440	--	--	--	S0, S2, S3	A	<b>3RV19 22-1CV0</b>	1	1 unit	41E
	415	480	--	--	--	S0, S2, S3	A	<b>3RV19 22-1CV1</b>	1	1 unit	41E
<b>Shunt releases</b>											
	--	--	20 ... 24	20 ... 70	--	S00, S0, S2, S3	▶	<b>3RV19 02-1DB0</b>	1	1 unit	41E
	--	--	90 ... 110	70 ... 190	--	S00, S0, S2, S3	A	<b>3RV19 02-1DF0</b>	1	1 unit	41E
	--	--	210 ... 240	190 ... 330	--	S00, S0, S2, S3	▶	<b>3RV19 02-1DP0</b>	1	1 unit	41E
	--	--	350 ... 415	330 ... 500	--	S00, S0, S2, S3	A	<b>3RV19 02-1DV0</b>	1	1 unit	41E
	--	--	500	500	--	S00, S0, S2, S3	A	<b>3RV19 02-1DS0</b>	1	1 unit	41E

1) The voltage range is valid for 100 % (infinite) ON period. The response voltage lies at 0.9 of the lower limit of the voltage range.

2) The voltage range is valid for 5 s ON period at AC 50/60Hz and DC. The response voltage lies at 0.85 of the lower limit of the voltage range.

3) One auxiliary release can be mounted on the right per motor starter protector (does not apply to 3RV11 motor starter protectors with overload relay function).

# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

Accessories  
Busbar accessories

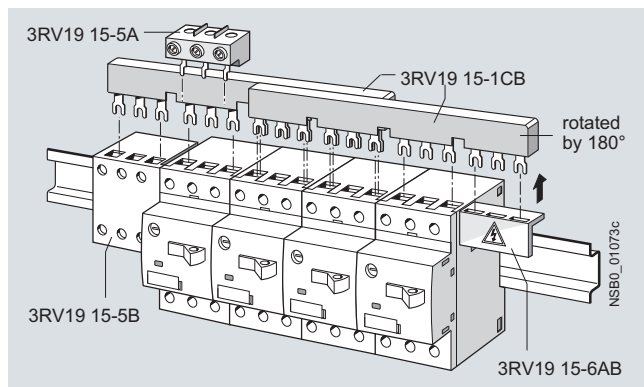
### Overview

#### Insulated three-phase busbar system

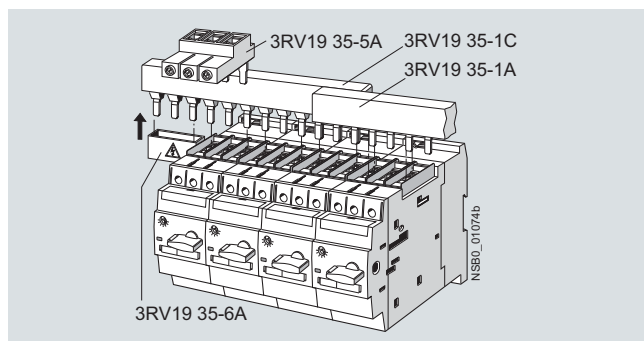
Three-phase busbar systems provide an easy, time-saving and clearly arranged means of feeding 3RV1 motor starter protectors with screw terminals. Different designs are available for sizes S00, S0 and S2 and can be used for the various different versions of motor starter protectors/circuit breakers. The 3RV19 15 three-phase busbar systems are not suitable for 3RV11 motor starter protectors with overload relay function. The three-phase bus bars must not be used for 3RV17 and 3RV18 circuit breakers.

The busbars are suitable for between 2 and 5 motor starter protectors/circuit breakers. However, any kind of extension is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last motor starter protector.

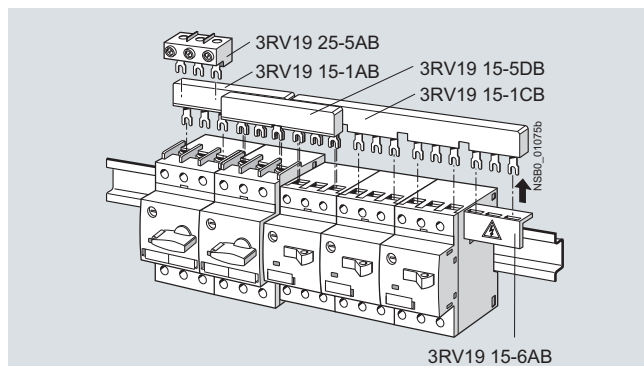
A combination of motor starter protectors of different sizes is possible only with sizes S00 and S0. Connecting pieces are available for this purpose. The motor starter protectors are supplied by appropriate feeder terminals.



3-phase busbar system SIRIUS, size S00



SIRIUS three-phase busbar system size S2



3-phase busbar system SIRIUS, with example for combining sizes S00 and S0

The three-phase busbar systems are finger-safe. They are designed for any short-circuit stress which can occur at the output side of connected motor starter protectors.

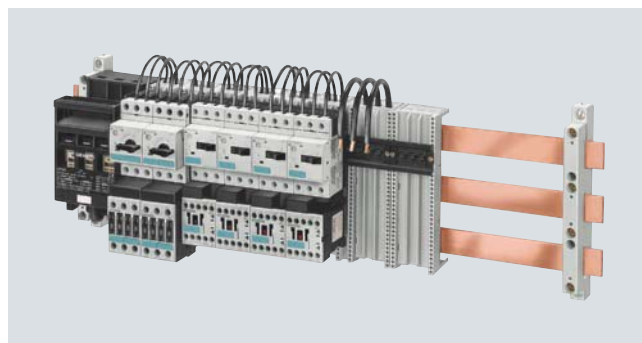
The three-phase busbar systems can also be used to construct "Type E Starters" of size S00 or S2 according to UL/CSA. Special feeder terminals must be used for this purpose however (see page 7/22).

#### Busbar adapters 8US for 40 mm and 60 mm systems

The motor starter protectors are mounted directly with the aid of busbar adapters on busbar systems with 40 mm and 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs. Busbar adapters for busbar systems with 40 mm center-to-center spacing are suitable for copper busbars with a width of 12 mm to 15 mm, while those with 60 mm center-to-center spacing are suitable for copper busbars with a width of 12 mm to 30 mm. The busbars can be 4 to 5 mm or 10 mm thick.

The motor starter protectors/circuit breakers are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

Further busbar adapters for snap-mounting direct-on-line starters and reversing starters as well as additional accessories such as line terminals and outgoing terminals, flat copper profile, etc. see Catalog LV 10.1.



SIRIUS load feeders with busbar adapters snapped onto busbars

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# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

### Accessories

#### Busbar accessories

#### Selection and ordering data





Modular spacing	Number of motor starter protectors that can be connected			Rated current $I_n$ at 690 V	For motor starter protectors	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
	Without lateral accessories	With lateral auxiliary switch	With auxiliary release								

mm

A

Size

#### Three-phase busbar systems

 3RV19 15-1AB	For feeding several motor starter protectors with screw terminals, mounted side by side on standard mounting rails, insulated, with touch protection										
	45 <sup>1)2)</sup>	2	--	--	63	S00, S0	▶	<b>3RV19 15-1AB</b>	1	1 unit	41E
		3				S00, S0	▶	<b>3RV19 15-1BB</b>	1	1 unit	41E
		4				S00, S0	▶	<b>3RV19 15-1CB</b>	1	1 unit	41E
 3RV19 15-1BB	55 <sup>1)2)</sup>	--	2	--	63	S00, S0	▶	<b>3RV19 15-2AB</b>	1	1 unit	41E
			3			S00, S0	▶	<b>3RV19 15-2BB</b>	1	1 unit	41E
			4			S00, S0	▶	<b>3RV19 15-2CB</b>	1	1 unit	41E
			5			S00, S0	▶	<b>3RV19 15-2DB</b>	1	1 unit	41E
 3RV19 15-1CB	63 <sup>1)2)</sup>	--	--	2	63	S00, S0	▶	<b>3RV19 15-3AB</b>	1	1 unit	41E
				4		S00, S0	▶	<b>3RV19 15-3CB</b>	1	1 unit	41E
	55 <sup>1)</sup>	2	--	--	108	S2	▶	<b>3RV19 35-1A</b>	1	1 unit	41E
		3				S2	▶	<b>3RV19 35-1B</b>	1	1 unit	41E
 3RV19 15-1DB	75 <sup>3)</sup>	--	2	2	108	S2	▶	<b>3RV19 35-3A</b>	1	1 unit	41E
			3	3		S2	▶	<b>3RV19 35-3B</b>	1	1 unit	41E
			4	4		S2	▶	<b>3RV19 35-3C</b>	1	1 unit	41E

1) Not suitable for 3RV11 motor starter protectors for motor protection with overload relay function. Common clamping of S00 and S0 motor starter protectors is not possible, due to the different modular spacings and terminal heights. A 3RV19 15-DB connector is available for connecting busbars from size S0 to size S00.

2) Not suitable for 3RV17 and 3RV18 circuit breakers according to UL 489 / CSA C22.2 No.5-02.


3) For 3RV1 motor starter protectors with accessories mounted on the side. Auxiliary releases and lateral auxiliary/signaling switches cannot be used in combination.

Version	Modular spacing	For motor starter protectors	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
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mm

Size

#### Connecting pieces for three-phase busbars

 3RV19 15-5DB	For connecting three-phase busbars for motor starter protectors of size S0 (left) to size S00 (right)										
	45			45	S00, S0	▶	<b>3RV19 15-5DB</b>	1	1 unit	41E	

Conductor cross-section			Tightening torques	For motor starter protectors	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded								



mm<sup>2</sup>mm<sup>2</sup>

AWG

Nm

Size

#### Three-phase feeder terminals

 3RV19 25-5AB	<b>Connection from top</b>										
	2,5 ... 25	4 ... 16	10 ... 4	4	S00	▶	<b>3RV19 15-5A</b>	1	1 unit	41E	
					S0	▶	<b>3RV19 25-5AB</b>	1	1 unit	41E	
	<b>Connection from below<sup>1)</sup></b>										
	2,5 ... 25	4 ... 16	10 ... 4	Input: 4, Output: 2 ... 2,5	S00, S0	▶	<b>3RV19 15-5B</b>	1	1 unit	41E	
 3RV19 15-5B	<b>Connection from top</b>										
	2,5 ... 50	1,5 ... 35	14 ... 0	4	S2	▶	<b>3RV19 35-5A</b>	1	1 unit	41E	

#### Three-phase feeder terminals for constructing "Type E Starters"

##### Connection from top

2,5 ... 25	4 ... 16	10-4	2 ... 4	S0	▶	<b>3RV19 25-5EB</b>	1	1 unit	41E
10 ... 50	--	8 ... 0	4,5 ... 6	S2	▶	<b>3RV19 35-5E</b>	1	1 unit	41E

1) This terminal is connected in place of a switch, please take the space requirement into account.

# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

**Accessories**  
**Busbar accessories**

Version	For motor starter protectors	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
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### Covers for connection tags



3RV19 15-6AB

Touch protection for empty positions

S00, S0

S2

▶ **3RV19 15-6AB**▶ **3RV19 35-6A**

1 10 units

1 5 units

41E

41E

### 8US busbar adapters



8US10 61-5FK08



8US11 11-4SM00



8US12 61-5FM08



8US12 11-4TR00

For motor starter protectors	Rated current	Connecting cable	Adapter length	Adapter width	Rated voltage	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
------------------------------	---------------	------------------	----------------	---------------	---------------	----	-----------	----------------	-------------------	-----	----

Size

A

AWG

mm

mm

V

#### Busbar adapters for 40 mm systems

For flat copper profiles according to DIN 46433  
Width: 12 mm and 15 mm  
Thickness: 5 mm and 10 mm

S00, S0	25	12	121	45	690	▶	<b>8US10 51-5DJ07</b>		1	1 unit	143
S00, S0 + lateral auxiliary switch	25	12	121	55	690	▶	<b>8US10 61-5DJ07</b>		1	1 unit	143
S2	56	8	139	55	690	▶	<b>8US10 61-5FK08</b>		1	1 unit	143
S3	100	4	182	70	400 <sup>1)</sup>	▶	<b>8US11 11-4SM00</b>		1	1 unit	143
S3	100	4	182	72	415 ... 690 <sup>2)</sup>	▶	<b>8US10 11-4TM00</b>		1	1 unit	143

#### Busbar adapters for 60 mm systems

For flat copper profiles according to DIN 46433  
Width: 12 mm and 30 mm  
Thickness: 5 mm and 10 mm  
also for T and double-T special profiles

S00, S0	25	12	182	45	690	▶	<b>8US12 51-5DM07</b>		1	1 unit	143
S2	56	8	182	55	690	▶	<b>8US12 61-5FM08</b>		1	1 unit	143
S3	100	4	182	70	400 <sup>1)</sup>	▶	<b>8US11 11-4SM00</b>		1	1 unit	143
S3	100	4	182	72	415 ... 690 <sup>2)</sup>	A	<b>8US12 11-4TM00</b>		1	1 unit	143
S3 <sup>3)</sup>	70 <sup>4)</sup>	4	215	72	600 <sup>4)</sup>	A	<b>8US12 11-4TR00</b>		1	1 unit	143

1) At rated voltage  
≤ 400 V: short-circuit breaking capacity 50 kA,  
> 400 to 460 V: short-circuit breaking capacity 25 kA.

2) Short-circuit breaking capacity 415/500/525 V AC  
- up to  $I_n = 25$  A: max. 30 kA  
- up to  $I_n = 90$  A: max. 16 kA  
- up to  $I_n = 100$  A: max. 6 kA  
Short-circuit breaking capacity 690 V AC:  
- max. 12 kA.

3) This busbar adapter is approved specially for 3RV17 42 circuit breakers for applications according to UL/CSA.

4) Values according to UL/CSA  
- Rated current: 70 A at 600 V AC;  
- Short-circuit breaking capacity:  
480 V AC: 65 kA, up to  $I_n = 30$  A;  
480 Y/277 V AC: 65 kA;  
600 Y/347 V AC: 20 kA.

Additional busbar adapters see [Catalog LV 10.1](#).

# Motor Starter Protectors

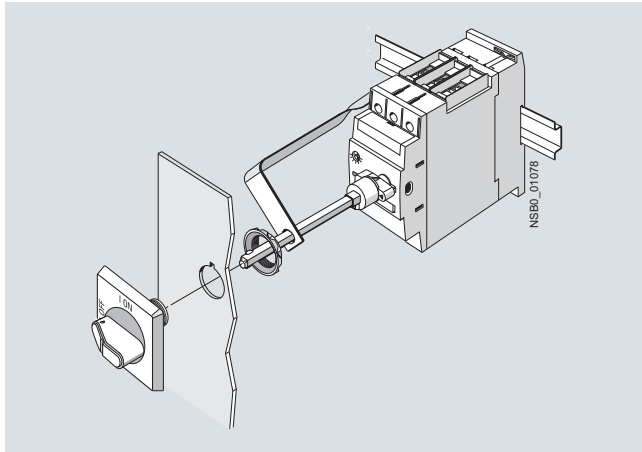
## SIRIUS 3RV1 motor starter protectors up to 100 A

### Accessories Rotary operating mechanisms

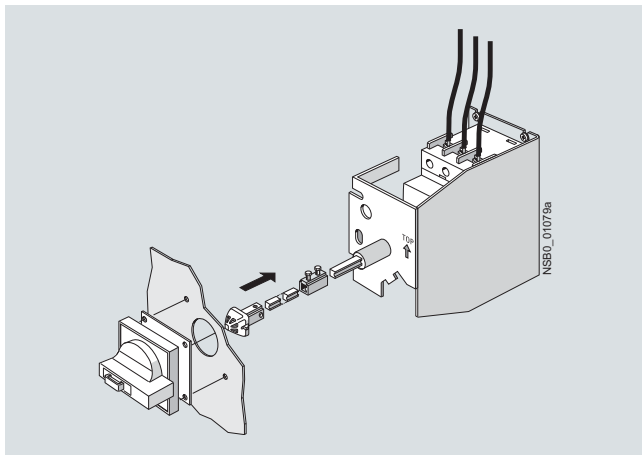
#### Overview

##### Door-coupling rotary operating mechanisms

Motor starter protectors with a rotary operating mechanism can be mounted in a control cabinet and operated externally by means of a door-coupling rotary operating mechanism. When the cabinet door with motor starter protector is closed, the operating mechanism is coupled. When the motor starter protector closes, the coupling is locked which prevents the door from being opened unintentionally. This interlock can be defeated by the maintenance personnel. In the OPEN position, the rotary operating mechanism can be secured against reclosing with up to three padlocks. Inadvertent opening of the door is not possible in this case either.



SIRIUS 3RV19 26-0K door-coupling rotary operating mechanism



SIRIUS 3RV29 36-2B door-coupling rotary operating mechanism for arduous conditions

##### Remote motorized operating mechanisms

3RV1 motor starter protectors are manually operated controls. They automatically trip in case of an overload or short circuit. Intentional remote-controlled tripping is possible by means of a shunt release or an undervoltage release. Reclosing is only possible directly at the motor starter protector.

The remote motorized operating mechanism allows the motor starter protectors to be opened and closed by electrical commands. This enables a load or an installation to be isolated from the network or reconnected to it from an operator panel.

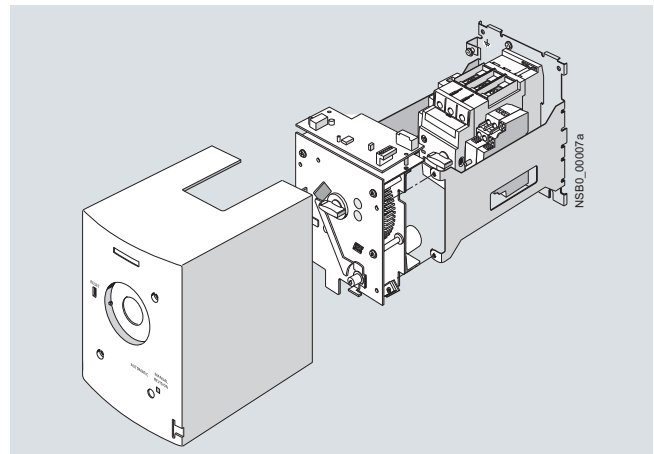
If the motor starter protector is tripped as a result of overload or short circuit, it will be in tripped position. For reclosing, the remote motorized operating mechanism must first be set manually or electrically to the 0 position (electrically by means of the Open command). Then it can be reclosed.

The remote motorized operating mechanism is available for motor starter protectors of size S2 ( $I_{n\max} = 50\text{ A}$ ) and S3 ( $I_{n\max} = 100\text{ A}$ ) that are designed for control voltages of 230 V AC and 24 V DC. The motor starter protector is fitted into the remote motorized operating mechanism as shown in the drawing.

In the "MANUAL" position, the motor starter protector in the remote motorized operating mechanism can continue to be switched manually on site. In the "AUTOMATIC" position, the motor starter protector is switched by means of electrical commands. The switching command must be applied for a minimum of 100 ms. The remote motorized operating mechanism closes the motor starter protector after a maximum of 1 second. On voltage failure during the switching operation it is ensured that the motor starter protector remains in the OPEN or CLOSED position. In the "MANUAL" and "OFF" position, the remote motorized operating mechanism can be locked with a padlock.

##### RESET function

The RESET button on the motorized operating mechanism serves to reset any 3RV19 21-1M alarm switch that might be installed.



SIRIUS 3RV19 .6-3A.. remote motorized operating mechanism



# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

Accessories  
Rotary operating mechanisms

### Selection and ordering data

Version	Color of handle	Version of extension shaft mm	For motor starter protectors Size	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
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#### Door-coupling rotary operating mechanisms



3RV29 26-0B

The door-coupling rotary operating mechanisms consist of a knob, a coupling driver and a 130/330 mm long extension shaft (6 mm x 6 mm).

The door-coupling rotary operating mechanisms are designed to degree of protection IP64. The door locking device prevents accidental opening of the control cabinet door in the ON position of the motor starter protector. The OFF position can be locked with up to 3 padlocks.

<b>Door-coupling rotary operating mechanisms</b>	Black	130	S0, S2, S3	▶	<b>3RV29 26-0B</b>		1	1 unit	41E
		330	S0, S2, S3	▶	<b>3RV29 26-0K</b>		1	1 unit	41E
<b>EMERGENCY-STOP door-coupling rotary operating mechanisms</b>	Red/yellow	130	S0, S2, S3	▶	<b>3RV29 26-0C</b>		1	1 unit	41E
		330	S0, S2, S3	▶	<b>3RV29 26-0L</b>		1	1 unit	41E

#### Door-coupling rotary operating mechanisms for arduous conditions



3RV29 36-2B

The door-coupling rotary operating mechanisms consist of a knob, a coupling driver, an extension shaft of 300 mm in length (8 mm x 8 mm), a spacer and two metal brackets, into which the motor starter protector is inserted.

The door-coupling rotary operating mechanisms are designed to degree of protection IP65. The door interlocking reliably prevents opening of the control cabinet door in the ON position of the motor starter protector. The OFF position can be locked with up to 3 padlocks.

Laterally mountable auxiliary releases and two-pole auxiliary switches can be used.

The door-coupling rotary operating mechanisms meet the requirements for isolating functions according to IEC 60947-2.

<b>Door-coupling rotary operating mechanisms</b>	Gray	300	S0	▶	<b>3RV29 26-2B</b>		1	1 unit	41E
			S2	▶	<b>3RV29 36-2B</b>		1	1 unit	41E
			S3	▶	<b>3RV29 46-2B</b>		1	1 unit	41E
<b>EMERGENCY-STOP door-coupling rotary operating mechanisms</b>	Red/yellow	300	S0	▶	<b>3RV29 26-2C</b>		1	1 unit	41E
			S2	▶	<b>3RV29 36-2C</b>		1	1 unit	41E
			S3	▶	<b>3RV29 46-2C</b>		1	1 unit	41E

Version	Rated control supply voltage $U_s$	For motor starter protectors Size	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
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#### Remote motorized operating mechanisms



3RV19 .6-3A..

<b>Remote motorized operating mechanisms</b>	AC 50/60 Hz, 230 V	S2	B	<b>3RV19 36-3AP0</b>		1	1 unit	41E
	24 V DC	S2	B	<b>3RV19 36-3AB4</b>		1	1 unit	41E
	AC 50/60 Hz, 230 V	S3	B	<b>3RV19 46-3AP0</b>		1	1 unit	41E
	24 V DC	S3	B	<b>3RV19 46-3AB4</b>		1	1 unit	41E

# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

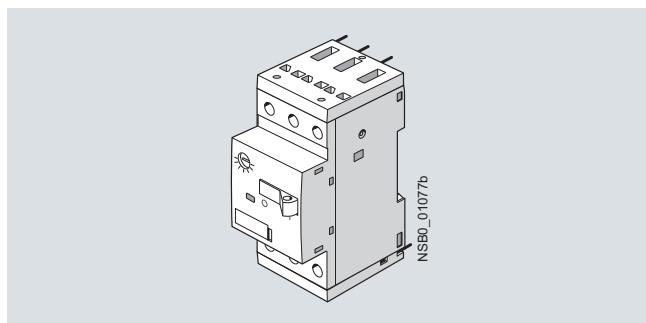
### Accessories Mounting accessories

#### Overview

##### Solder pin connections

Solder pin connections are available for the main contacts and transverse auxiliary switches of size S00 motor starter protectors.

The prepared terminal parts are clamped to the upper and lower screw terminals of the motor starter protectors which allows them to be soldered into printed circuit boards.



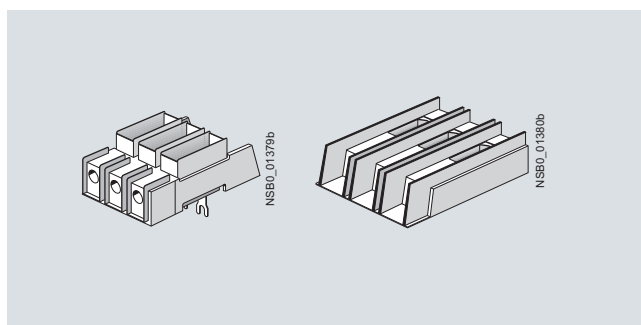
3RV19 18-5A

##### Terminal blocks for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508

The 3RV10 motor starter protectors size S0 and higher are approved according to UL 508 as "Self-Protected Combination Motor Controllers (Type E)".

This requires increased clearance and creepage distances (1 inch and 2 inches respectively) at the input side of the device, which are achieved by mounting terminal blocks.

- Size S0: The 3RV19 28-1H terminal block is simply screwed onto the basic unit.
- Size S2: The basic unit is already compliant with the increased clearance and creepage distance requirements.
- Size S3: The standard box terminal must be replaced by the 3RT19 46-4GA07 terminal block.



SIRIUS 3RV19 28-1H (left), 3RT19 46-4GA07 (right) terminal blocks (type E)

According to CSA, the terminal blocks can be omitted when the device is used as a "Self-Protected Combination Motor Controller" (Type E).

Three-phase feeder terminals are required for constructing "Type E Starters" with an insulated busbar system (see "Busbar Accessories" on page 7/22).

#### Selection and ordering data

##### Accessories

Version	For motor starter protectors Size	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
<b>Covers</b>							
	<b>Terminal covers for box terminals</b> Additional touch protection to be fitted at the box terminals (2 units mountable per device)	S2 S3	▶ ▶	<b>3RT19 36-4EA2</b> <b>3RT19 46-4EA2</b>	1 1	1 unit 1 unit	41B 41B
	<b>Terminal covers</b> For cable lug and busbar connection for maintaining the required voltage clearance and as touch protection if box terminal is removed (2 units can be mounted per motor starter protector)	S3	▶	<b>3RT19 46-4EA1</b>	1	1 unit	41B
	<b>Scale covers</b> Sealable, for covering the set current scale	S00, S0, S2, S3	▶	<b>3RV19 08-0P</b>	100	10 units	41E






3RV1 (size S3) with 3RT19 46-4EA1 (left) 3RV19 08-0P (right)

# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

### Accessories

#### Mounting accessories

Version	For motor starter protectors Size	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
<b>Fixing accessories</b>							
	<b>Push-in lugs</b> for screwing the motor starter protector onto mounting plates For each motor starter protector, 2 units are required.	S00, S0	A	<b>3RB19 00-0B</b>	100	10 units	41F
3RB19 00-0B							
<b>Solder pin connections</b>							
	<b>For main contacts</b> For soldering the main conductor connections of a motor starter protector to a printed circuit board (1 set = 2 units per motor starter protector)	S00	B	<b>3RV19 18-5A</b>	1	4 units	41E
3RV19 18-5A with motor starter protector							
	<b>For main and auxiliary contacts</b> For soldering the main conductor connections and the auxiliary conductor connections of the transverse auxiliary switch 1 NO + 1 NC of a motor starter protector to a printed circuit board (1 set = 3 units per motor starter protector)	S00	B	<b>3RV19 18-5B</b>	1	4 units	41E
<b>Terminal blocks for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508</b>							
	<b>Note:</b> UL 508 demands 1-inch clearance and 2-inch creepage distance at line side for "Combination Motor Controller Type E". The following terminal blocks must be used in 3RV10 motor starter protectors of sizes S0 and S3. The 3RV10 motor starter protector in size S2 conforms with the required clearance and creepage distances without a terminal block. Terminal blocks are not required for use according to CSA.						
3RV19 28-1H							
	With size S0, these terminal blocks cannot be used in combination with 3RV19.5 three-phase busbars and with size S3, they cannot be used with a transverse auxiliary switch. For construction with three-phase busbars see "Busbar Accessories" on page 7/21 onwards.						
3RT19 46-4GA07							
	<b>Terminal block type E</b> for extended clearance and creepage distances (1 and 2 inch)	S0 S3	▶ B	<b>3RV19 28-1H</b> <b>3RT19 46-4GA07</b>	1 1	1 unit 1 unit	41E 41E
<b>Auxiliary terminals, 3-pole</b>							
	For connection of auxiliary and control cables to the main conductor connections (for one side)	S3	B	<b>3RT19 46-4F</b>	1	1 unit	41B
3RT19 46-4F							

# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

### Accessories

#### Mounting accessories

#### Link modules

Actuating voltage of contactor	Size		DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
	Contactor	Motor starter protector						
				Order No.	Price € per PU			

#### Link modules for motor starter protector to contactor<sup>1)</sup>

For mechanical and electrical connection between motor starter protector and contactor with screw terminals

##### Single-unit packaging



3RA19 31-1AA00

AC/DC	S00	S00	▶	3RA19 11-1AA00	1	1 unit	41B
	S00	S0	▶	3RA19 21-1DA00	1	1 unit	41B
AC	S0	S0	▶	3RA19 21-1AA00	1	1 unit	41B
	S2	S2	▶	3RA19 31-1AA00	1	1 unit	41B
	S3	S3	▶	3RA19 41-1AA00	1	1 unit	41B
DC	S0	S0	▶	3RA19 21-1BA00	1	1 unit	41B
	S2	S2	▶	3RA19 31-1BA00	1	1 unit	41B
	S3	S3	▶	3RA19 41-1BA00	1	1 unit	41B



3RA19 41-1AA00

##### Multi-unit packaging

AC/DC	S00	S00	▶	3RA19 11-1A	1	10 units	41B
	S00	S0	▶	3RA19 21-1D	1	10 units	41B
AC	S0	S0	▶	3RA19 21-1A	1	10 units	41B
	S2	S2	▶	3RA19 31-1A	1	5 units	41B
	S3	S3	▶	3RA19 41-1A	1	5 units	41B
DC	S0	S0	▶	3RA19 21-1B	1	10 units	41B
	S2	S2	▶	3RA19 31-1B	1	5 units	41B
	S3	S3	▶	3RA19 41-1B	1	5 units	41B



3RA19 31-1A

#### Hybrid link modules for motor starter protector to contactor<sup>1)</sup>

Mechanical and electrical connection between motor starter protector with screw terminals and contactor with spring-type terminals

##### Single-unit packaging



3RA19 11-2FA00

AC/DC	S00	S00	▶	3RA19 11-2FA00	1	1 unit	41B
	S00	S0	▶	3RA19 21-2FA00	1	1 unit	41B

##### Multi-unit packaging

AC/DC	S00	S00	▶	3RA19 11-2F	1	10 units	41B
	S00	S0	▶	3RA19 21-2F	1	10 units	41B



3RA19 11-2F

# Motor Starter Protectors



## SIRIUS 3RV1 motor starter protectors up to 100 A

### Accessories

#### Mounting accessories


Version	For motor starter protectors	DT	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
	Size		Order No.	Price € per PU		

#### Adapters and link modules for spring-type terminals

	<b>Link modules</b> Electrical connection between motor starter protector and contactor (busbar adapter not included in scope of supply)	S00	▶	<b>3RA19 11-2A</b>	1	10 units	41B
	<b>Link modules with mechanical connection</b> mechanical and electrical connection between motor starter protector and contactor	S00	▶	<b>3RA19 11-2E</b>	1	10 units	41B
	<b>Standard mounting rail adapters</b> with 2 standard mounting rails 45 mm wide, one movable	S00	▶	<b>3RA19 22-1L</b>	1	5 units	41B
	<b>Busbar adapters</b> 45 mm wide, 182 mm long, adapted for motor starter protectors with spring-type terminals. If there is an additional contactor, a further standard mounting rail must be fitted.	40 mm busbar system	▶	<b>8US10 51-5CM47</b>	1	1 unit	143
		60 mm busbar system	▶	<b>8US12 51-5CM47</b>	1	1 unit	143
	<b>TH 35 standard mounting rails</b> 45 mm wide, plastic, including fixing screws	--	A		<b>8US19 98-7CA15</b>	1	10 units

Version	Size	Color	For motor starter protectors	DT	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
	Size				Order No.	Price € per PU		

#### Tools for opening spring-type terminals

	<b>Screwdrivers</b> For all SIRIUS devices with spring-type terminals	Length approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/black, partially insulated	S00, S0, S2, S3	A	<b>3RA29 08-1A</b>	1	1 unit	41B
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# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

### Accessories Enclosures and front plates

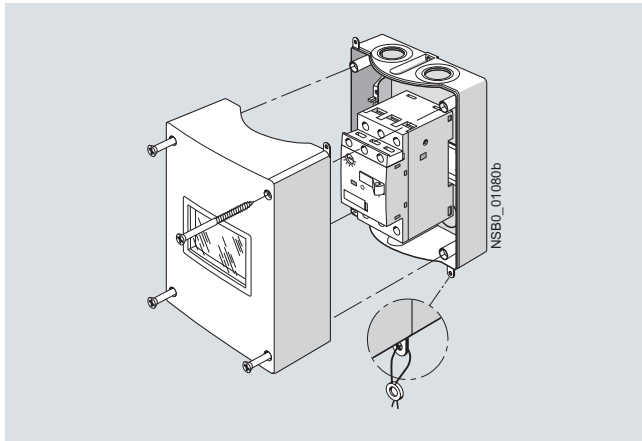
#### Overview

##### Enclosures

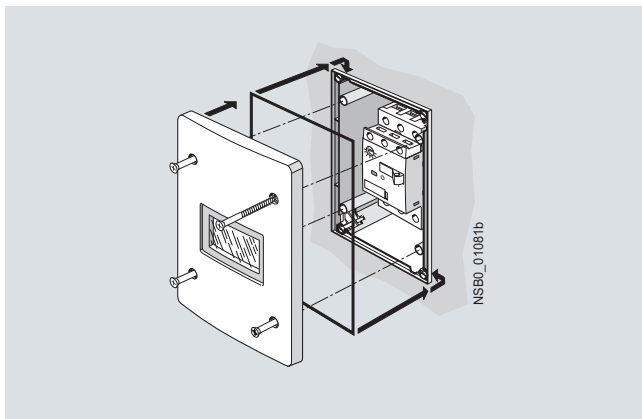
For installing motor starter protectors in sizes S00 ( $I_{n\max} = 12\text{ A}$ ), S0 ( $I_{n\max} = 25\text{ A}$ ) and S2 ( $I_{n\max} = 50\text{ A}$ ) as a single unit, molded-plastic and cast aluminum enclosures for surface mounting and molded-plastic enclosures for flush mounting are available in various dimensions.

When installed in a molded-plastic enclosure the motor starter protectors have a rated operational voltage  $U_e$  of 500 V.

The enclosures for surface mounting have the degree of protection IP55; the enclosures for flush mounting also comply with the degree of protection IP55 at the front (the flush-mounted section complies with IP20).



Enclosures for surface mounting



Enclosures for flush mounting

All enclosures are equipped with N and PE terminals. There are two knock-out cable entries for cable glands at the top and two at the bottom; also on the rear corresponding cable entries are scored. There is a knockout on the top of the enclosure for indicator lights that are available as accessories.

The narrow enclosure can accommodate a motor starter protector without accessories, with transverse and lateral auxiliary switch, whereas wide enclosures and enclosures for S2 motor starter protectors also provide space for a laterally mounted auxiliary release. There is no provision for installing a motor starter protector with a signaling switch.

With S00 motor starter protectors, the switch rocker is operated by means of the actuator diaphragm of the enclosure. A locking device, capable of holding up to three padlocks, can be fitted onto the actuator diaphragm to prevent the circuit breaker from closing during maintenance work, for example.

A mushroom-shaped EMERGENCY-STOP knob can be fitted in place of the locking device. If it is actuated abruptly, the motor starter protector opens and the mushroom-shaped knob latches. The knob can be unlatched again either by turning it or by using a special key. The motor starter protector can subsequently be switched on again.

The molded-plastic enclosures of the size S0 and S2 motor starter protectors are fitted with a rotary operating mechanism.

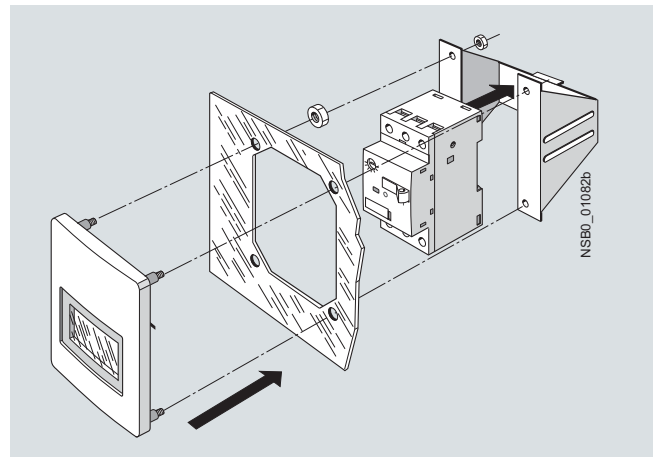
The enclosures can be supplied with either a black rotary operating mechanism or with an EMERGENCY-STOP rotary operating mechanism with a red/yellow knob.

The rotary operating mechanisms can be locked in the Open position with up to 3 padlocks.

##### Front plates

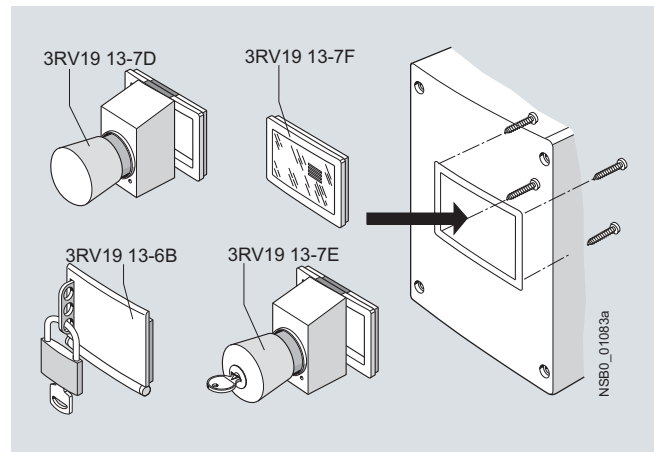
Motor starter protectors are frequently required to be actuated in any enclosure. Front plates equipped with an actuator diaphragm for size S00 motor starter protectors, or rotary operating mechanism for S0 to S3 motor starter protectors are available for this purpose.

The front plates for size S00 have a holder into which the motor starter protectors can be snapped. A holder for size S0 motor starter protectors is available for front plate sizes S0 to S3.



Front plate for size S00

##### Accessories for enclosures and front plates








Accessories for size S00

# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

**Accessories**  
**Enclosures and front plates**
**Selection and ordering data**

Version	Degree of protection	Integrated terminals	Mounting width	For 3RV10 to 3RV16 motor starter protectors Size	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	
<b>Molded-plastic enclosures for surface mounting</b>											
 3RV19 13-1DA00	<b>with actuator diaphragm</b>	IP55	N and PE/ground	54 mm (for switch + lateral auxiliary switch)	S00	▶		1	1 unit	41E	
				72 mm (for switch + lateral auxiliary switch + auxiliary release)	S00	▶					3RV19 13-1DA00
 3RV19 23-1FA00	<b>With rotary operating mechanism, lockable in 0 position</b>	IP55	N and PE/ground	54 mm (for switch + lateral auxiliary switch)	S0	▶		1	1 unit	41E	
				72 mm (for switch + lateral auxiliary switch + auxiliary release)	S0	▶					3RV19 23-1DA00
				82 mm (for switch + lateral auxiliary switch + auxiliary release)	S2	A					3RV19 33-1DA00
	<b>With EMERGENCY-STOP rotary operating mechanism, lockable in 0 position</b>	IP55	N and PE/ground	54 mm (for switch + lateral auxiliary switch)	S0	▶		1	1 unit	41E	
				72 mm (for switch + lateral auxiliary switch + auxiliary release)	S0	A					3RV19 33-1GA00
				82 mm (for switch + lateral auxiliary switch + auxiliary release)	S2	A					3RV19 33-1GA00
<b>Cast aluminum enclosures for surface mounting</b>											
 3RV19 23-1DA01	<b>With rotary operating mechanism, lockable in 0 position</b>	IP65	PE <sup>1)</sup>	72 mm (for switch + lateral auxiliary switch + auxiliary release)	S0	▶		1	1 unit	41E	
	<b>With EMERGENCY-STOP rotary operating mechanism, lockable in 0 position</b>	IP65	PE <sup>1)</sup>	72 mm (for switch + lateral auxiliary switch + auxiliary release)	S0	▶					3RV19 23-1GA01
<b>Molded-plastic enclosures for flush mounting</b>											
 3RV19 13-2DA00	<b>with actuator diaphragm</b>	IP55 (front side)	N and PE/ground	72 mm (for switch + lateral auxiliary switch + auxiliary release)	S00	A		1	1 unit	41E	
	<b>With rotary operating mechanism, lockable in 0 position</b>	IP55 (front side)	N and PE/ground	72 mm (for switch + lateral auxiliary switch + auxiliary release)	S0	A					3RV19 23-2DA00
 3RV19 23-2DA00	<b>With EMERGENCY-STOP rotary operating mechanism, lockable in 0 position</b>	IP55 (front side)	N and PE/ground	72 mm (for switch + lateral auxiliary switch + auxiliary release)	S0	A		1	1 unit	41E	

<sup>1)</sup> If required, an additional N terminal can be mounted (e. g. 8WA1 011-1BG11).

# Motor Starter Protectors

## SIRIUS 3RV1 motor starter protectors up to 100 A

### Accessories

#### Enclosures and front plates

Version	Degree of protection	For 3RV10 to 3RV16 motor starter protectors Size	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
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#### Front plates



3RV19 13-4C

#### Molded-plastic front plates with actuator diaphragm

For actuating 3RV1 motor starter protectors in any enclosures, includes holder for motor starter protector.

IP55 (front side)

S00

A

3RV19 13-4C

1

1 unit

41E



3RV19 23-4B + 3RV19 23-4G

#### Molded-plastic front plates with rotary operating mechanism

Lockable in 0 position

IP55 (front side)

S0, S2, S3

▶

3RV19 23-4B

1

1 unit

41E

For actuation of 3RV1 motor starter protectors in any enclosure.

#### Molded-plastic front plates with EMERGENCY-STOP rotary operating mechanism, red/yellow

Lockable in 0 position

IP55 (front side)

S0, S2, S3

A

3RV19 23-4E

1

1 unit

41E

EMERGENCY-STOP actuation of 3RV1 motor starter protectors in any enclosure.

#### Holders for front plates

--

S0

▶

3RV19 23-4G

1

1 unit

41E

Holder is mounted on front plate, motor starter protector with and without accessories is snapped in.

#### Accessories for enclosures



Molded-plastic enclosure for surface mounting with 3RV19 13-7D

#### EMERGENCY-STOP mushroom buttons, red/yellow

For 3RV19 13-... enclosures and front panels

Latching mushroom button, unlatch by turning

Cannot be used in combination with locking device

IP55

S00

▶

3RV19 13-7D

1

1 unit

41E

#### EMERGENCY-STOP mushroom buttons, red/yellow, with lock

For 3RV19 13-... enclosures and front panels

RONIS lock, lock No. SB 30, supplied with 2 keys

Latching mushroom button, unlatch with key

Cannot be used in combination with locking device

IP55

S00

▶

3RV19 13-7E

1

1 unit

41E

#### Locking devices

For 3RV19 13-... enclosures and front plates

For 3 padlocks with max. 8 mm shackle diameter.

Cannot be used in combination with EMERGENCY-STOP mushroom button

IP55

S00

▶

3RV19 13-6B

1

1 unit

41E

#### Spare actuator diaphragms

Holders and screws are included in scope of supply

IP55

S00

A

3RV19 13-7F

1

1 unit

41E

Version	Rated control supply voltage $U_s$ V	For motor starter protectors Size	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
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#### Indicator lights



3RV19 03-5B

#### Indicator lights

for all enclosures and front plates

With glow lamp and colored lenses red, green, yellow, orange and clear

110 ... 120

220 ... 240

380 ... 415

480 ... 500

S2

C

C

C

C

3RV19 03-5B

3RV19 03-5C

3RV19 03-5E

3RV19 03-5G

1

1 unit

41E

1

1 unit

41E

1

1 unit

41E

1

1 unit

41E