

Monitoring Relays

SIRIUS 3RR2 Monitoring Relays for Mounting onto 3RT2 Contactors

General data

Overview



| Features | 3RR21 | 3RR22 | Benefits |
|---|-------------------------------------|------------------------------------|--|
| General data | | | |
| Sizes | S00, S0 | S00, S0 | <ul style="list-style-type: none">• Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, soft starters, ...)• Permit the mounting of slim and compact load feeders in widths of 45 mm (S00 and S0)• Simplify configuration• Is adapted to the other devices in the SIRIUS modular system• Just a single version per size with a wide setting range enables easy configuration |
| Current range | S00: 1.6 ... 16 A S0: 4 ... 40 A | S00: 1.6... 16 A S0: 4 ... 40 A | |
| Monitoring functions | | | |
| Current overshoot | ✓ (Two-phase) | ✓ (Three-phase) | <ul style="list-style-type: none">• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload• Enables detection of filter blockages or pumping against closed gate valves• Enables drawing conclusions about wear, poor lubrication or other maintenance-relevant phenomena• Enables detection of overload due to a slipping or torn belt• Guarantees protection of pumps against dry running• Facilitates monitoring of the functions of resistive loads such as heaters• Permits energy savings through monitoring of no-load operation |
| Current undershoot | ✓ (Two-phase) | ✓ (Three-phase) | |
| Apparent current monitoring | ✓ | ✓ (selectable) | <ul style="list-style-type: none">• Precision current monitoring especially in a motor's rated and upper torque range• Optimum current monitoring over a motor's entire torque range through the patented combination of power factor and apparent current monitoring |
| Active current monitoring | -- | ✓ (selectable) | |
| Range monitoring | ✓ (Two-phase) | ✓ (Three-phase) | <ul style="list-style-type: none">• Simultaneous monitoring of current overshoot and undershoot with a single device• Minimizes heating of induction motors during phase failure through immediate disconnection• Prevents operation of hoisting equipment with reduced load carrying capacity |
| Phase failure, open-circuit | ✓ (Two-phase) | ✓ (Three-phase) | |
| Phase sequence monitoring | -- | ✓ (selectable) | <ul style="list-style-type: none">• Prevents starting of motors, pumps or compressors in the wrong direction of rotation• Provides optimum protection of loads against high-resistance short-circuits or ground faults due to moisture, condensed water, damage to the insulation material, etc.• Eliminates the need for additional special equipment.• Saves space in the control cabinet• Reduces wiring outlay and costs |
| Internal ground-fault detection (residual current monitoring) | -- | ✓ (selectable) | |
| Blocking current monitoring | -- | ✓ (selectable) | <ul style="list-style-type: none">• Minimizes heating of induction motors when blocked during operation through immediate disconnection• Minimizes mechanical loading of the system by acting as an electronic shear pin |

✓ Available

-- Not available

SIRIUS 3RR2 Monitoring Relays for Mounting onto 3RT2 Contactors

General data



| Features | 3RR21 | 3RR22 | Benefits |
|---|--------------------------------|------------------------------|---|
| Features | | | |
| RESET function | ✓ | ✓ | <ul style="list-style-type: none"> Allows manual or automatic resetting of the relay Resetting directly on the device or by switching the control supply voltage off and on (remote reset) |
| ON-delay time | 0 ... 60 s | 0 ... 99 s | <ul style="list-style-type: none"> Enables motor starting without evaluation of the starting current Can be used for monitoring motors with lengthy start-up |
| Tripping delay time | 0 ... 30 s | 0 ... 30 s | <ul style="list-style-type: none"> Permits brief threshold value violations during operation Prevents frequent warnings and disconnections with currents near the threshold values |
| Operating and display elements | LEDs and rotary potentiometers | Displays and buttons | <ul style="list-style-type: none"> For setting the threshold values and delay times For selectable functions For quick and selective diagnostics Displays for permanent indication of measured values |
| Integrated contacts | 1 CO | 1 CO, 1 semiconductor output | <ul style="list-style-type: none"> Enable disconnection of the system or process when there is an irregularity Can be used to output signals |
| Design of load feeders | | | |
| Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector) | ✓ | ✓ | <ul style="list-style-type: none"> Provides optimum protection of the loads and operating personnel in the event of short-circuits due to insulation faults or faulty switching operations |
| Electrical and mechanical matching to 3RT2 contactors | ✓ | ✓ | <ul style="list-style-type: none"> Simplifies configuration Reduces wiring outlay and costs Enables stand-alone installation as well as space-saving direct mounting |
| Spring-type connection for main circuit and auxiliary circuit | ✓ (optional) | ✓ (optional) | <ul style="list-style-type: none"> Enables fast connections Permits vibration-resistant connections Enables maintenance-free connections |
| Other features | | | |
| Suitable for single- and three-phase loads | ✓ | ✓ | <ul style="list-style-type: none"> Enables the monitoring of single-phase systems through parallel infeed at the contactor or looping the current through the three phase connections |
| Wide setting ranges | ✓ | ✓ | <ul style="list-style-type: none"> Reduce the number of variants Minimize the configuration outlay and costs Minimize storage overheads, storage costs, tied-up capital |
| Wide voltage supply range | ✓ (optional) | ✓ (optional) | <ul style="list-style-type: none"> Reduces the number of variants Minimizes the configuring outlay and costs Minimizes storage overhead, storage costs, tied-up capital |

✓ Available

Possible combinations of 3RR2 monitoring relays with 3RT2 contactors

| Monitoring relays | Current range | Contactors (type, size, rating) | |
|-------------------|---------------|---|---|
| | | 3RT20 1 S00 3/4/5.5/7.5 kW | 3RT20 2 S0 5.5/7.5/11/15/18.5 kW |
| Type | A | | |
| 3RR21 41 | 1.6 ... 16 | ✓ | With stand-alone installation holder |
| 3RR22 41 | 1.6 ... 16 | ✓ | With stand-alone installation holder |
| 3RR21 42 | 4 ... 40 | With stand-alone installation holder | ✓ |
| 3RR22 42 | 4 ... 40 | With stand-alone installation holder | ✓ |

✓ Available