

- ◆ *Modular type*
- ◆ *Plug-in (8 pin and 11 pin) or flush-mount 48x48mm type*
- ◆ *DIN rail mount type*
- ◆ *Rugged, reliable, high repeat accuracy*
- ◆ *Multi-voltage, single-scale, single-function versions*
- ◆ *Multi-voltage, multi-scale and multi-function versions.*



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On delay. Multiscale. AC/DC supply



TM P

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.1-1s 1-10s 6s-1min 1-10min 6min-1h 1h-10h 0.1-1 day 1-10 days ON only OFF only	24-48VDC 24-240VAC	TM P	59.00

General characteristics

- Multiscale, multivoltage.
- On delay, delay on make, with start at relay energizing
- One relay output with 1 SPDT contact
- Delay time adjustable on front by rotary switch: 10-100%
- Green LED indicator for power on
- Red LED indicator for relay state; flashing for delay and steady when relay energized
- Modular 17.5mm (0.7in) wide; suitable for screw fixing or 35mm DIN rail (IEC/EN 60715) mounting
- Degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-8.

Multifunction. Multiscale. AC/DC supply. 1 relay output



TM M1

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.1-1s 1-10s 6s-1min 1-10min 6min-1h 1h-10h 0.1-1 day 1-10 days ON only OFF only	12-240V AC/DC	TM M1	79.00

General characteristics

- Multifunction, multiscale, multivoltage
- Enabling input
- One relay output with 1 SPDT contact for TM M1
- Two relay outputs, one with 1 delayed SPDT contact and the other with 1 normally open (N/O) contact, programmable as instantaneous or delayed for TM M2
- Selectable functions: (a) On delay; delay on make with start at relay energizing. (b) Pulse on relay energizing with start when energized. (c) Flasher starting with OFF interval. Equal timing recycle. (d) Flasher starting with ON interval. Equal timing recycle. (e) Off delay; relay energizing at external contact closing with start on break. (f) Pulse on relay energizing with start on external contact closing. (g) Pulse on relay energizing with start on external contact opening. (h) On-off delay. Delay on make, with start at external contact closing, and delay at break, with start at external contact opening. (i) Step relay at each closing of an external contact. (j) Pulse generator, unequal timing recycle; starting with OFF pulse time and 0.5s ON pulse.
- Delay time adjustable on front by rotary switch: 10-100%
- Green LED indicator for power on
- Red LED indicator for relay state; flashing for delay and steady when relay energised
- Modular 17.5mm (0.7in) wide; suitable for screw fixing or 35mm DIN rail (IEC/EN 60715) mounting
- Degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-8 for TM M1 and W-9 for TM M2.

Multifunction. Multiscale. AC/DC supply. 2 relay outputs



TM M2

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.1-1s 1-10s 6s-1min 1-10min 6min-1h 1h-10h 0.1-1 day 1-10 days ON only OFF only	12-240V AC/DC	TM M2	89.00

**Asymmetrical
recycle, independent
timing.
Multiscale.
AC/DC supply**



moduLo

TM PL

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.1-1s 1-10s 6s-1min 1-10min 6min-1h 1h-10h 0.1-1 day 1-10 days 3-30 days 10-100 days	12-240V AC/DC	TM PL	150.00

General characteristics

- Programmable asymmetrical recycle, multiscale, multivoltage. Flasher with independent timing for ON and OFF intervals
- Enabling input of ON or OFF interval
- One relay output with 1 SPDT contact
- Delay time for OFF (pause) interval, adjustable on front by rotary switch: 10-100%
- Delay time for ON (work) interval, adjustable on front by rotary switch: 10-100%
- Green LED indicator for power on
- Red LED indicator for relay state; flashing for delay
- Modular 17.5mm (0.7in) wide; suitable for screw fixing or 35mm DIN rail (IEC/EN 60715) mounting
- Degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-9.

**Off delay.
Multiscale.
AC/DC supply**



moduLo

TM D

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.06-0.6s 0.6-6s 6s-1min 12s-2min	24-240V AC/DC	TM D	147.00

General characteristics

- Multiscale, multivoltage. True off delay; delay on break with start at relay de-energizing
- One relay output with 1 SPDT contact
- Delay time adjustable on front by rotary switch: 10-100%
- Green LED indicator for power on
- Modular 17.5mm (0.7in) wide; suitable for screw fixing or 35mm DIN rail (IEC/EN 60715) mounting
- Degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-9.

**Timer for
starters.
Multiscale.
AC/DC supply**



moduLo

TM ST

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.1-1s 1-10s 6s-1min 1-10min	24-48VDC 24-240VAC 380-440VAC	TM ST TM ST A440	106.00 106.00

General characteristics

- Multiscale, multivoltage for starting (wye-delta, impedance, autotransformer, etc.) of induction motors, 2 separate timings
- One relay output with 2 normally open (N/O) contacts with common pole
- Delay time adjustable on front by rotary switch: 10-100% for wye connection
- Starting and transition time (20-300ms time scale), adjustable on front by rotary switch
- Green LED indicator for power on
- Red LED indicator for relay state; flashing during delay and steady at delay lapsing
- Modular 17.5mm (0.7in) wide; suitable for screw fixing or 35mm DIN rail (IEC/EN 60715) mounting
- Degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-10.

**For staircases.
AC supply**



moduLo

TM LS

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.5-20min	220-240VAC	TM LS	75.00

General characteristics

- Single scale and voltage for staircase illumination
- One relay output with 1 powered normally open (N/O) contact
- Delay time adjustable on front by rotary switch
- Suitable for 3 or 4-wire systems
- 1 slide switch for timed or constant operation
- Function for 1-hour lighting and quick switch off
- Green LED indicator for power on
- Connection with up to 50 light-up switches maximum; ≤ 1mA each
- Modular 17.5mm (0.7in) wide; suitable for screw fixing or 35mm DIN rail (IEC/EN 60715) mounting
- Degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-10.

**On delay.
Multiscale.
AC supply**



31 AT1P

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.3-3s	24VAC	31 AT1P 240	68.00
1.2-12s	100-240VAC		
9.6-96s	24VAC	31 AT1P 440	68.00
76.8-768s	220-440VAC		

① For 31 AT1 single-scale types, contact Sales & Technical Support.

Time-range setting



General characteristics

- On delay, multivoltage, multiscale
- One output with 1 SPDT contact
- Delay time adjustable on front using potentiometer
- Time scale setting using dip switches
- LED indication for power on and relay state
- 22.5mm (0.9in) wide housing suitable for mounting on 35mm DIN rail (IEC/EN 60715)
- Screw fixing adapter CE106.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-10.

**On delay.
Multiscale.
AC/DC supply**



31 AT1CP

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.3-3s	12VAC/DC	31 AT1CP 24	68.00
1.2-12s	24VAC/DC		
9.6-96s	48-60VAC/DC	31 AT1CP 125	68.00
76.8-768s	110-125V AC/DC		

② For 31 AT1C single-scale types, contact Sales & Technical Support.

Time-range setting



General characteristics

- On delay, multivoltage, multiscale
- One output with 1 SPDT contact
- Delay time adjustable on front using potentiometer
- Time scale setting using dip switches
- LED indication for power on and relay state
- 22.5mm (0.9in) wide housing suitable for mounting on 35mm DIN rail (IEC/EN 60715)
- Screw fixing adapter CE106.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-10.

Off delay. Multiscale



31 ATD

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.3-3s	24VAC/DC	31 ATD 24	180.00
1.2-12s	48VAC/DC	31 ATD 48	180.00
9.6-96s	110-127VAC	31 ATD 110	180.00
76.8-768s	220-240VAC	31 ATD 220	180.00

Time-range setting



General characteristics

- True off delay. Does not require continuous power source.
- Single voltage, multiscale
- One relay output with 1 SPDT contact
- Delay time adjustable on front using potentiometer
- Time scale setting using dip switches
- LED indication for power on and relay state
- 22.5mm (0.9in) wide housing suitable for mounting on 35mm DIN rail (IEC/EN 60715)
- Screw fixing adapter CE106.

Certifications and compliance

UL listed for USA and Canada, File E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-10.

Off delay after external contact opening. Multiscale



31 AT1DP

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
With auxiliary power supply.			
0.3-3s	24VAC/DC	31 AT1DP 24 Ⓢ	115.00
1.2-12s	48VAC/DC	31 AT1DP 48 Ⓢ	115.00
9.6-96s	110-127VAC	31 AT1DP 110	115.00
76.8-768s	220-240VAC	31 AT1DP 220	115.00

Ⓢ With DC supply, connect (-) polarity to terminal A2.

Time-range setting



General characteristics

- Off delay after external contact opening, single voltage, multiscale
- One relay output with 1 SPDT contact
- Delay time adjustable on front using potentiometer
- Time range setting using dip switches
- LED indication for power on and relay state
- 22.5mm wide housing suitable for mounting on 35mm DIN rail (IEC/EN 60715)
- Screw fixing adapter CE106.

Certifications and compliance

UL listed for USA and Canada, File E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-10.

Multifunction. Multiscale. Multivoltage. 1 double-throw contact

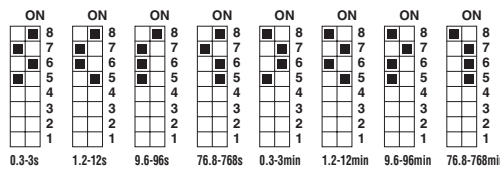


31 BTPM1

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.3-3s	24VAC/DC	31 BTPM1 220	118.00
1.2-12s	110-127VAC		
9.6-96s	220-240VAC		
76.8-768s	24-48-60V AC/DC	31 BTPM1 60 Ⓢ	118.00
0.3-3min			
1.2-12min			
9.6-96min			
76.8-768min			

Ⓢ Available on request.

Time-range setting



General characteristics

- Multifunction, multivoltage, multiscale
- One relay output with 1 SPDT contact
- Delay time adjustable on front
- Selectable functions: Delay on operate with relay de-energized. Pulsing on relay energizing. Delay on or off after on opening of external contact. Pulsing. Pulsing on opening of external contact
- Time scale and functions selected by dip switches
- LED indication for power on and relay state
- Time relay resetting possible by using an external contact connected at R1-R2 terminals; 5ms resetting time
- 22.5mm (0.9in) wide housing suitable for mounting on 35mm DIN rail (IEC/EN 60715)
- Screw fixing adapter CE107.

Certifications and compliance

UL listed for USA and Canada, File E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-10.

**Multifunction.
Multiscale.
Multivoltage.
2 independent
double-throw
contacts**

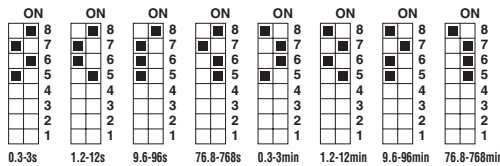


31 BTM

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.3-3s 1.2-12s 9.6-96s	24VAC/DC 110-127VAC 220-240VAC	31 BTM 220	132.00
76.8-768s 0.3-3min 1.2-12min 9.6-96min 76.8-768min	24-48-60V AC/DC	31 BTM 60Ⓢ	132.00

Ⓢ Available on request.

Time-range setting



General characteristics

- Multifunction, multivoltage, multiscale
- Two output relays, each with 1 SPDT contact, programmable by dip switches
- Delay time adjustable on front using potentiometer
- Selectable functions: Delay on operate with relay de-energized. Delay on relay energizing. Delay on or off after opening of external contact. Pulsing beginning with pause. Pulsing beginning with work. Pulsing after opening of external contact beginning with pause. Pulsing after opening of external contact beginning with work.
- Possibility, selectable by dip switches, to program an output relay with instantaneous function (21-22-24 output)
- Time scale and functions selected by dip switches
- LED indication for power on and relay state
- Time relay resetting possible by using an external contact connected at R1-R2 terminals; 5ms resetting time
- 22.5mm (0.9in) wide housing suitable for mounting on 35mm DIN rail (IEC/EN 60715)
- Screw fixing adapter CE107.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-11.

**Programmable
asymmetrical
recycle timer**

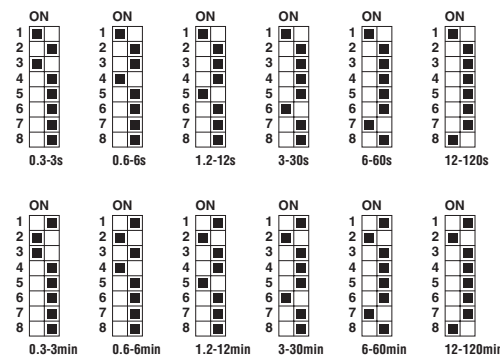


31 DRPL

Time of scale range	Control power	Catalog number	Price
	[V]		\$ each
0.3-3s 0.6-6s 1.2-12s	24VAC/DC 110-127VAC 220-240VAC	31 DRPL 220	176.00
3-30s 6-60s 12-120s 0.3-3min 0.6-6min 1.2-12min 3-30min 6-60min 12-120min	48-60VAC/DC	31 DRPL 60Ⓢ	176.00

Ⓢ Available on request.

Time-range setting



General characteristics

- Programmable asymmetrical recycle timers, multivoltage, multiscale
- Two relay outputs, each with SPDT contact
- Pause and work time adjustable on front using potentiometers
- Time scale selected by independent dip switches
- LED indication for power on and relay state
- Cycle can begin with work interval instead of pause (jumper on S1-S2 terminals)
- 45mm (1.8in) wide housing suitable for mounting on 35mm DIN rail (IEC/EN 60715)
- Screw fixing adapter CE106.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC 61812-1.

Functional diagram

See page W-10.

Timer for starters



31 BT2N

Time of scale	Control power	Catalog number	Price
	[V]		\$ each
0.6-6s	24VAC/DC	31 BT2N 6S 48	106.00
1.2-12s		31 BT2N 12S 48	106.00
3-30s		31 BT2N 30S 48	106.00
6-60s		31 BT2N 60S 48	106.00
0.6-6s	24VAC/DC	31 BT2N 6S 110	106.00
1.2-12s		31 BT2N 12S 110	106.00
3-30s		31 BT2N 30S 110	106.00
6-60s		31 BT2N 60S 110	106.00
0.6-6s	110-127VAC	31 BT2N 6S 110	106.00
1.2-12s		31 BT2N 12S 110	106.00
3-30s		31 BT2N 30S 110	106.00
6-60s		31 BT2N 60S 110	106.00
0.6-6s	24VAC/DC	31 BT2N 6S 220	106.00
1.2-12s		31 BT2N 12S 220	106.00
3-30s		31 BT2N 30S 220	106.00
6-60s		31 BT2N 60S 220	106.00
0.6-6s	220-240VAC	31 BT2N 6S 220	106.00
1.2-12s		31 BT2N 12S 220	106.00
3-30s		31 BT2N 30S 220	106.00
6-60s		31 BT2N 60S 220	106.00
0.6-6s	24VAC/DC	31 BT2N 6S 380	106.00
1.2-12s		31 BT2N 12S 380	106.00
3-30s		31 BT2N 30S 380	106.00
6-60s		31 BT2N 60S 380	106.00
0.6-6s	380-415VAC	31 BT2N 6S 380	106.00
1.2-12s		31 BT2N 12S 380	106.00
3-30s		31 BT2N 30S 380	106.00
6-60s		31 BT2N 60S 380	106.00
0.6-6s	24VAC/DC	31 BT2N 6S 440	106.00
1.2-12s		31 BT2N 12S 440	106.00
3-30s		31 BT2N 30S 440	106.00
6-60s		31 BT2N 60S 440	106.00
0.6-6s	415-440VAC	31 BT2N 6S 440	106.00
1.2-12s		31 BT2N 12S 440	106.00
3-30s		31 BT2N 30S 440	106.00
6-60s		31 BT2N 60S 440	106.00

General characteristics

- Dual voltage, for starters (wye-delta, impedance, autotransformer, etc.) of induction motors, 2 separate timing
- Two output relays, each with 1 SPDT contact
- Starting time and transition time (20-300ms) adjustable on front using potentiometers
- LED indication for power on and relay state
- 22.5mm (0.9in) wide housing suitable for mounting on 35mm DIN rail (IEC/EN 60715)
- Screw fixing adapter CE107
- Timing starts immediately as soon as voltage is applied to time relay; upon expiry of the interval (starting time), the two output relays are energized in sequence.

The first one disables the starting contactor, which opens; the second one, after the time interval which can be adjusted between 20 and 300ms (transition), enables the second contactor to close.

If the supply is removed before the set time expires, the time already elapsed is reset.

Certifications and compliance

UL listed for USA and Canada, file E93601.
Compliant with standards: IEC/EN 61812-1.

Operational diagram

See page W-11.

Accessories for DIN rail mount timers

Description	Catalog number	Price
		\$ each
Screw fixing adapter for timers: AT1 - AT1C - AT1P - AT1CP - ATD - AT1DP - DRPL	31 CE106	3.00
Screw fixing adapter for timers: BTM1 - BTM - BT2N	31 CE107	3.00

Plug-in and flush-mount timers



31 L48TP



31 L48TPB



31 L48M

Time of scale range	Control power	Catalog number	Price
			\$ each

Time relay, on delay.
Multiscale and multivoltage, 8-pin.

0.1-780s	24VAC/DC 110VAC	31 L48TP S 240	72.00
1.8s-780min	220-240VAC	31 L48TP M 240	72.00

Time range setting.

	A B	A B	A B	A B
	1 0	1 0	1 0	1 0
L48TP S	0.3-3s	1.2-12s	10-100s	78-780s
L48TP M	18s-3min	72s-12min	10s-100min	78s-780min

Time of scale range	Control power	Catalog number	Price
			\$ each

Time relay, on delay.
Multiscale and single voltage, 8-pin.

	24VAC/DC	31 L48TPB M24	79.00
0.05s-10min	110VAC 220-240VAC	31 L48TPB M110 31 L48TPB M240	79.00 79.00

Time range setting.

	A B	A B	A B	A B
	1 0	1 0	1 0	1 0
	0.05-1s	0.1-10s	0.6-1min	6s-10min

Time of scale range	Control power	Catalog number	Price
			\$ each

Time relay, multifunction, multivoltage and multiscale, 11-pin.

0.05s-10min	24-240V	31 L48M M 240	82.00
0.6s-10h	AC/DC	31 L48M H 240	82.00

Time range setting.

	A B	A B	A B	A B
	1 0	1 0	1 0	1 0
L48M M	0.05-1s	0.1-10s	0.6s-1min	6s-10min
L48M H	0.05-1min	0.1-10min	0.6min-1h	1min-10h

Housing size 48x48mm = 1.9x1.9in

General characteristics

L48TP TIMER

- On delay, multivoltage, multiscale
- One relay output with 1 SPDT contact
- Delay time adjustable on front by rotary knob
- Time scale selected by dip switches:
for L48TP S: 0.3-3s, 1.2-12s, 10-100s or 78-780s
for L48TP M: 18s-3min, 72s-12min, 10-100min or 78-780min
- LED indication for power on and relay state
- Use with 8-pin socket, see page 10-9
- Flush mount bracket, see page 10-9
- Degree of protection: IP40 on front; IP20 at rear.

L48TPB TIMER

- On delay, single voltage, multiscale
- Two relay outputs, each with 1 SPDT contact, adjustable as both delayed at energization or 1 delayed and 1 instantaneous at energization
- Delay time adjustable on front by rotary knob
- Time scale selected by dip switches:
0.05-1s, 0.1-10s, 0.6s-1min, 6s-10min
- LED indication for power on and relay state
- Use with 8-pin socket, see page 10-9
- Flush mount bracket, see page 10-9
- Degree of protection: IP40 on front; IP20 at rear.

L48M TIMER

- Multifunction, multivoltage and multiscale
- 2 DPDT output contacts
- Delay time adjustable on front
- Selectable functions: Delay on operate when relay de-energized. Delay on operate when relay energized. Pulsing beginning with pause. Pulsing beginning with work. Time relay resetting is possible on closing of external contact (R) connected to terminals 7-6. Possibility of stopping the time relay saving the elapsed time on closing of external contact (M) connected to terminals 7-5 and then restarting time on opening it. See diagrams on page W-9.
- Time scale and functions selected by dip switches:
for L48M M: 0.05-1s, 0.1-10s, 0.6s-1min, 6s-10min
for L48M H: 0.05s-1min, 0.1s-10min, 0.6m-1h, 1min-10h
- LED indication for power on and relay state
- Use with 11-pin socket, see page 10-9
- Flush mount bracket, see page 10-9
- Degree of protection: IP40 on front; IP20 at rear.

Certifications and compliance

UL Recognized for USA and Canada, file E172189.
Compliant to standards: IEC/EN 61812-1.

Operational diagrams

See page W-12.

**Accessories for
plug-in and
flush-mount timers**

Description	Catalog number	Price
		\$ each
8-pin socket for screw fixing or on 35mm DIN rail (IEC/EN 60715). Screw terminals.	31 S8	9.00
8-pin loose socket. Screw terminals.	31 L48 P8	12.00
11-pin socket for screw fixing or on 35mm DIN rail (IEC/EN 60715). Screw terminals.	31 S11	10.50
11-pin loose socket. Screw terminals.	31 L48 P11	14.00
Flush mount bracket.	31 L48AP	5.00

Certifications

Sockets: CSA certified, file LR 26716.
UL recognized, file E113714.





moduLo

PAGE 11-2 AND 3

MODULAR VOLTAGE RELAYS

- For single phase system
- For three phase system without neutral
- Powered by monitored voltage
- Programmable rated voltage value to monitor
- Delayed tripping.



moduLo

PAGE 11-4

MODULAR CURRENT RELAYS

- For single phase system
- Undercurrent, overcurrent and combination
- Auxiliary power supply
- Automatic or manual resetting
- Selectable functions.



moduLo

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OTHER MODULAR RELAYS

- Frequency control
- Phase shift control
- Selectable operating mode.

- ◆ *Modular version*
- ◆ *Minimum and maximum voltage monitoring relays for single and three phase systems, without neutral*
- ◆ *Minimum and maximum current monitoring relays with dual thresholds*
- ◆ *Frequency monitoring relay*
- ◆ *Phase shift relay.*



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