

ST-130

Star-Delta Timer

SLIMLINE

MONITORING RELAYS



ORDERING CODE

TYPE	MODEL	VOLTAGE	POWER SUPPLY	RELAY CONTACTS
ST	130	230V	AC	DP

SEE PAGE 60 FOR ORDERING OPTIONS

Application Example

- Timed switching of contactors from star to delta, with pause, to prevent contactors operating simultaneously.

Features

- Failsafe feature.
- Relay de-energises to “centre-off” position for failsafe operation.
- Adjustable time range of 0-60 seconds.
- Incorporates 75 millisecond pause time to prevent overlapping of Star and Delta switching.
- LED indication of relay output status, i.e.: Star or Delta mode.
- Two relay method for interlocking of contacts ensuring break before make.
- 5A relay output.
- Rated for continuous operation.

Description of Operation

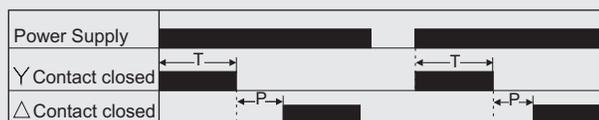
The **ST-130** is a high performance electronic timer to enable the star-delta starter to be switched safely from star to delta. Interlocking and an electronically controlled star make period, ensures failsafe operation. A pause time of 75 milliseconds prevents overlapping of sluggish star-delta contractors.

The key feature of this timer is that in the event of a failure, the relay fails to the “centre-off” position, meaning that neither the star nor delta contractors are energised.

Operation: When power is applied to the unit, the star contact (pins 1 & 4) closes and the preset time cycle starts (LED 1 illuminates). When the star time cycle ends, the star contacts opens and the pause period of 75 milliseconds starts. During the pause cycle, both the star and delta contacts are open. When the pause cycle ends, the delta contact (pin 1 and 3) closes (LED 2 illuminates).

The timer remains in the delta cycle until the power to the unit is interrupted. The relay then returns to the safe central position.

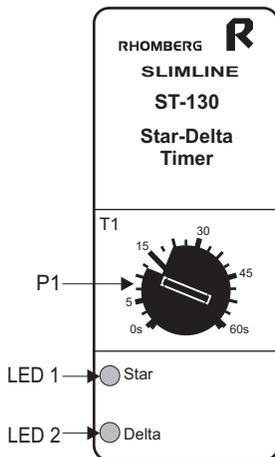
Operational Diagram



T = Time setting
P = Pause of approximately 75ms



Description of Controls



P1: **The Time Setting** is adjusted on P1, between 0 - 60 seconds, i.e. the star contact closure time.

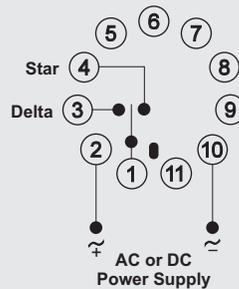
LED 1: The LED marked **“Star”** is illuminated when star contact is closed (i.e. pins 1 & 4 are connected).

LED 2: The LED marked **“Delta”** is illuminated when delta contact is closed (i.e. pins 1 & 3 are connected).

Wiring and Connection

Power Supply	
Phase/Positive	Pin 2
Neutral/Negative	Pin 10

Relay Contacts	
Closed during Delta cycle	1 + 3
Closed during Star cycle	1 + 4



Note: Relay de-energises to the “centre OFF” position when power is off.

Technical Specifications

POWER SUPPLY

AC: Supply voltage: 48, 60, 110, 230, 400, 415, 525V ±15%
Power consumption: 3VA (approx.)
6VA for 415, 525V (approx.)

DC: Supply voltage: 10-30V AC/DC, 48, 60, 110V DC ±10%
Isolation: no galvanic isolation
Power consumption: 100mA for 10-30V AC/DC
30mA for higher ranges.

RESET

Power supply to be interrupted for at least 1 second.

TIME SETTING

0 - 60 seconds adjustable.

PAUSE TIMER

Approximately 75 milliseconds ±10%.