



ORDERING CODE

TYPE	MODEL	VOLTAGE	POWER SUPPLY CONTACTS	RELAY CONTACTS
AT	130	230	A	D

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 Star Time range of up to 60 seconds.
- Fixed 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 SPDT relays with neutral centre position ensure break before make.
- Microprocessor technology incorporated.
- 5A SPDT relay output.
- Rated for continuous operation.

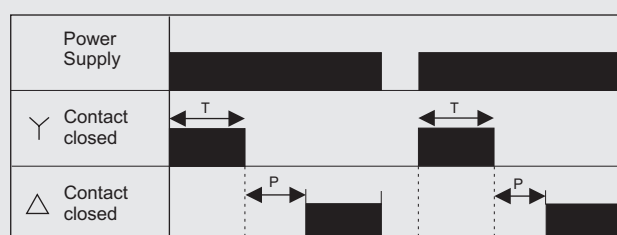
Description of Operation

The **AT-130** is a high performance microprocessor based electronic timer, designed to enable the Star-Delta starter to be switched safely from Star to Delta. An electronically controlled Star-make period enables failsafe operation. A pause time of 75 milliseconds prevents the overlapping of sluggish Star-Delta contactors.

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 or the Delta contactors are energised.

Operation: When power is applied to the unit, the Star contact closes and the preset time cycle starts (L2 illuminates). When the Star time cycle ends, the star contact 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 closes (L1 illuminates). The timer remains in the Delta cycle until the power to the unit is removed. The relay then returns to the safe central position.

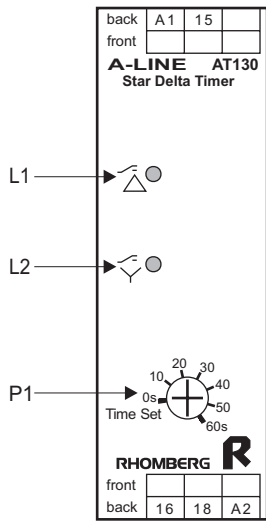
Operational Diagram



T = Set time
P = Pause of approximately 75ms



Description of Controls



L1: The red LED marked illuminates when the **Delta contact** is closed.

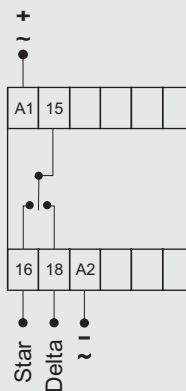
L2: The red LED marked illuminates when the **Star contact** is closed.

P1: **Time Set**: The Star contact closure time, adjustable from 0 to 60 seconds, is set on P1.

Wiring and Connection

Power Supply	
Phase/ Positive	A1
Neutral/ Negative	A2

Relay Contacts	
Normally Open, Closed during Delta cycle	15 + 18
Normally Open, Closed during Star cycle	15 + 16



NOTE: Relay de-energised to the "centre-OFF" position when power is off.

Technical Specifications

POWER SUPPLY			
Type	Voltage	Tolerance	Consumption
AC Transformer (2kV galvanic isolation)	12, 24, 115, 230(220-240), 400(380-415), 525V	±15%	2VA (approx.) 6VA (approx.)
AC Reactive	250 (90-250)V	-	100mA
DC Supply	48, 60, 110V	±15%	30mA
AC/ DC	12/24V	±15%	100mA

RELAY	
Relay Options (250V, 5A)	SPDT (1 x SPST for Delta and 1 x SPST for Star)

HOUSING		
Voltage	250V and below	Above 250V
Housing Width	22,5mm	45mm

RESET
Power supply to be interrupted for at least 1 second

STAR TIME ADJUSTMENT
0-60 seconds

PAUSE TIME
75 milliseconds

Additional information in Section J, page 131.