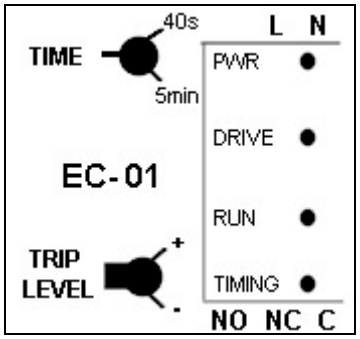
ECONOMIZER EC-01 SERIES Under and Over current monitors



Description

EC – 01US0 Under current/No remote reset/External current transformer required
EC – 01US1 Under current/No remote reset/Built in current transformer

The EC – 01 series under current detection devices incorporate the following features, selected by the model number.

Working voltage range	:	120 – 400 AC
Current detection	:	Limited to CT and burden resistance
Variable current setting	:	Determined by CT size
Switching current	:	16A / 250VAC resistive
Variable trip time	:	40 seconds to 5 minutes
Mounting	:	Standard DIN rail mounting
Size	:	110(D) x 75(H) x 50 mm(W)
Indication	:	Power ON – Drive – Run – Timing

Operation EC – 01US1 (Refer diagram below)

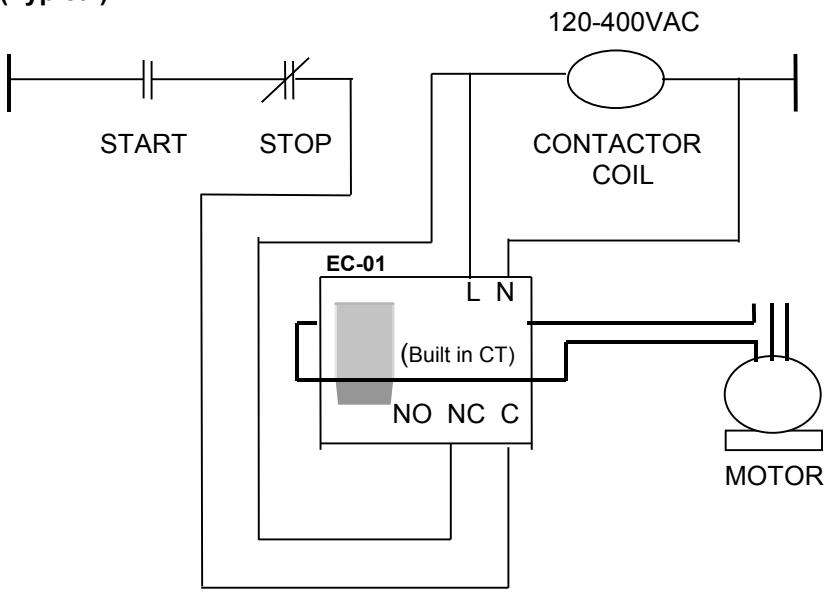
Mount the EC–01 onto a DIN rail suitably located inside the control panel.

Once connected operate the machine. In the event of the machine idling and thus causing the EC–01 to detect an under current situation, the EC – 01 will commence timing out to the setting as adjusted on the TIME scale. On completion of the time out cycle the internal relay will energize causing the machine to cease.

Removing and reapplying voltage to the EC-01 will cause a new cycle to commence (reset). This is known as automatic resetting. The models EC-01(nnn)R incorporate a remote reset circuit.

The internal circuitry of the EC-01 allows for a slight delay before activating in the event of the machine being started up in an under current condition.

Connection (Typical)



The EC-01 is connected in series with the motor control circuit, and is powered by the same circuit. As can be seen from the diagram, after timeout occurs, the motor run contactor will drop out as will simultaneously the AC supply to the EC-01 unit causing an automatic reset in the EC-01.

With STAR/DELTA starters it is recommended that the L and N supply to the EC-01 is taken from the DELTA contactor coil.

In the event of the L and N supply to the EC-01 not being available from the start circuit, a supply taken from two phases (400V) of the motor is in order. The EC-01 can operate in the range 120 – 400 VAC.

Wire one leg of the motor feed circuit through the built in current transformer. This is accessed via a 12mm hole in the side of the EC-01. See setting up below for details. Leave enough slack on this wire in case it needs to be looped through the current transformer more than once or twice.

SETTING UP
Setting the EC-01 up is simple due to its built in current transformer (EC – 01US1).

Run the machine at its full or average load. Observe the DRIVE LED. It should glow steadily at roughly half the intensity of the PWR LED. If it does not, loop the feed wire once more through the EC-01 body (built in current transformer).

Run the machine and check again – repeat as necessary to obtain the desired illumination of the DRIVE LED.

Next slowly rotate the TRIP LEVEL spindle using a small grub screw driver. A point will be reached where the RUN and TIMING LED's will change over. Set to a point where the GREEN RUN LED is glowing steadily and the YELLOW TIMING LED is completely off.

Ideally the small arrow head indicator on the spindle should point approximately midway of the rotation of the spindle. This is not imperative but ideal.
Set the TIME spindle using a grub screw driver to the desired cut-out time interval required between 40 seconds and 5 minutes.

Now unload the machine so that it runs at its idling load and current drain. Observe the EC-01. The GREEN RUN LED should turn OFF and the YELLOW TIMING LED should illuminate.

After the preset time the EC-01 will operate its internal relay and the machines motor control circuit will be interrupted causing the motor and machine to turn off.

Depressing the machine's START button will initiate a new machine run cycle.

If difficulty is experienced in obtaining a switching point between the RUN and TIMING LED's this is generally caused by insufficient DRIVE signal obtained from the built in current transformer. Increasing the number of turns through the built in current transformer will remedy this problem.

The ECONOMIZER EC-01 series under current and EC-02 over current monitors are manufactured and distributed by:

Automated Control Electronics Limited

Further product information and specifications are available at the following Website address:

www.electrons.co.nz