

A range of panel mounting, solid state motor protection relays providing protection against overload, stalling and single phasing with finer control than is possible with thermal or magnetic devices.

## FEATURES

- Inverse time characteristic, faster response to higher currents
- For full load currents from 1.5 to 160A with in-built C.T.s
- External current transformers for full load currents up to 800A
- Stalled trip time adjustable 2-10s. 8-40s version also available
- Single phasing protection independent of time setting
- Type RUND offers visual indicator for accurate on-site setting
- Manual reset to prevent automatic restart without investigation
- Remote reset facility also available
- Test button to simulate fault
- Tamper proof cover for time and current controls
- High immunity to shock, vibration and electrical surges
- Versions for use with soft-start units and single phase motors



## ORDERING INFORMATION

CONTROL V AC 45-65Hz	OUTPUT CONTACTS	ORDERING REFERENCES : SELECT BY FULL LOAD CURRENT RANGE			
		RUN1 : 1.5-28A	RUN3 : 16-80A	RUN4 : 64-160A	RUND : 1.5-28A
110 or 240	SPDT	<b>RUN1/110/240</b>	<b>RUN3/110/240</b>	<b>RUN4/110/240</b>	
110	1 n/o + 1 n/c	<b>RUN1/110/C</b>	<b>RUN3/110/C</b>	<b>RUN4/110/C</b>	<b>RUND/110</b>
240	1 n/o + 1 n/c	<b>RUN1/240/C</b>	<b>RUN3/240/C</b>	<b>RUN4/240/C</b>	<b>RUND/240</b>
415	SPDT	<b>RUN1/415</b>	<b>RUN3/415</b>	<b>RUN4/415</b>	
415	1 n/o + 1 n/c	<b>RUN/415/C</b>	<b>RUN3/415/C</b>	<b>RUN4/415/C</b>	<b>RUND/415</b>

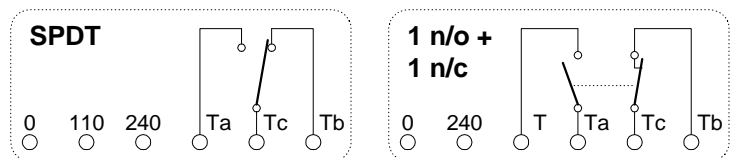
The above all have the standard time to trip on stall range of 2-10s. For longer run up times an 8-40s variant is available. Add **/40** to the reference after the voltage designation e.g. **RUN1/110/40/C**

For units suitable for soft-start use or with single phase motors a variant with the single phase protection disabled is available. Add **Y** after the type designation in the above references e.g. **RUNY1/110/C** or **RUNDY/110**

## REMOTE RESET

A solenoid unit is available which fits onto the RUN or RUND and allows remote operation of the reset button. Order references are **SOL/RESET/110** for 110V a.c. control and **SOL/RESET/240** for 220-240V a.c.

## OUTPUT CONTACT ARRANGEMENTS



## EXTERNAL CURRENT TRANSFORMERS

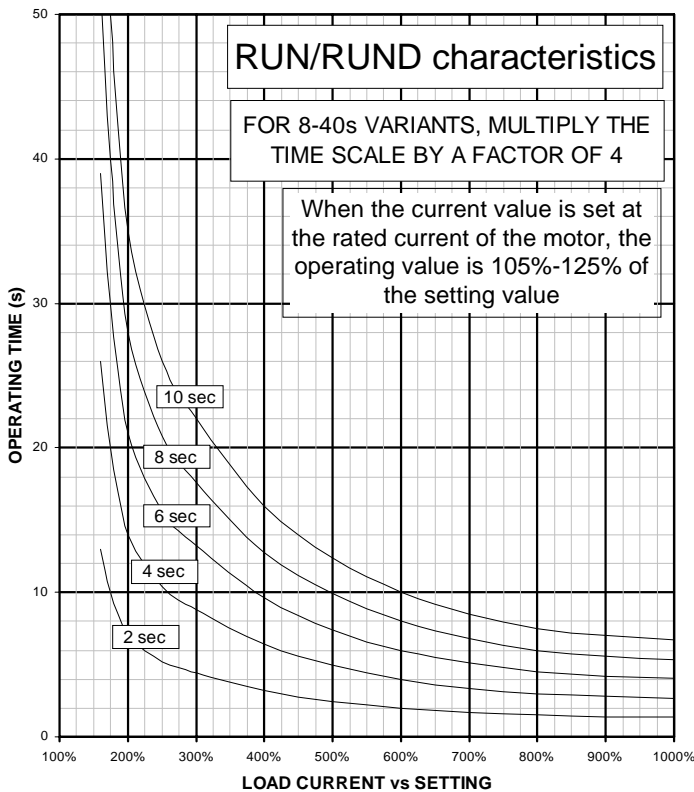
These can be used to extend the current ranges of the units or to allow the relay to be mounted remotely from the motor supply cables.

An RUN1 or RUND must be used and on its 3-7A range. Connections from the external C.T.s. must be passed 4 times through the internal C.T.s of the relay. Two external C.T.s are required per relay.

Type 10P10 2.5VA 5A secondary C.T.s are recommended and can be supplied under the references given opposite. Fixings are on 100mm centres and for M6 screws. The secondary terminals are also M6.

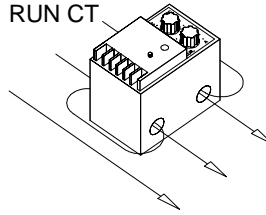
F.L.C (A)	CT ratio	External CT passes	Multiplier	Reference	Inside dia
12-20	60:5	3	4	<b>445.100</b>	38mm
18-30	60:5	2	6	<b>445.100</b>	38mm
30-50	100:5	2	10	<b>445.101</b>	38mm
36-60	60:5	1	12	<b>445.100</b>	38mm
60-100	100:5	1	20	<b>445.101</b>	38mm
90-150	150:5	1	30	<b>445.102</b>	38mm
120-200	200:5	1	40	<b>445.103</b>	38mm
150-250	250:5	1	50	<b>445.104</b>	38mm
180-300	300:5	1	60	<b>445.105</b>	54mm
240-400	400:5	1	80	<b>445.106</b>	54mm
300-500	500:5	1	100	<b>445.107</b>	54mm
360-600	600:5	1	120	<b>445.108</b>	54mm
480-800	800:5	1	160	<b>445.109</b>	67mm

## SETTING

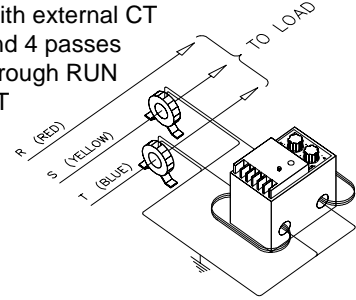


No. of CT PASSES	FULL LOAD CURRENT (A)			
	RUND	RUN1	RUN3	RUN4
8	1.5-3.5	1.5-3.5	-	-
4	3-7	3-7	-	-
2	6-14	6-14	16-40	-
1	12-28	12-28	32-80	64-160

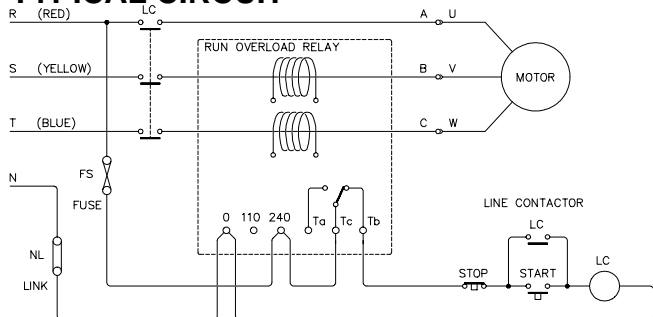
With 2 passes through each RUN CT



With external CT and 4 passes through RUN CT



## TYPICAL CIRCUIT



If RUN and contactor supplies are separate a monitor relay should be used to ensure that the contactor opens if the RUN supply is lost

## INSTALLATION

Any 2 of the 3 load cables are fed through the relay to give full 3 phase protection and must enter the internal CTs from the same direction. This also applies when using external CTs which must each be wired identically

The phase failure detection circuit will be triggered by soft-start units, single phase motors and by high harmonic distortion. In these cases use type RUNY or RUNDY which have the phase sensitive circuitry disabled.

The RESET button is pushed up on detection of a fault and remains in this state, even after a power failure. The button must be mechanically reset and this may be achieved remotely by means of a solenoid reset unit.

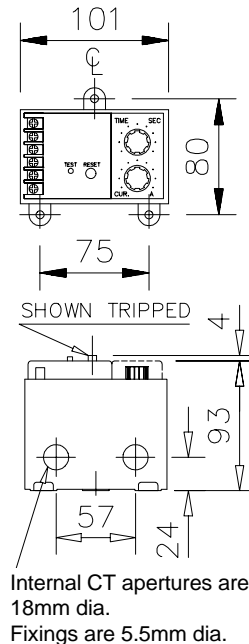
The TEST button may be used to check operation. The response time will not be the actual tripping time on load.

## SPECIFICATION

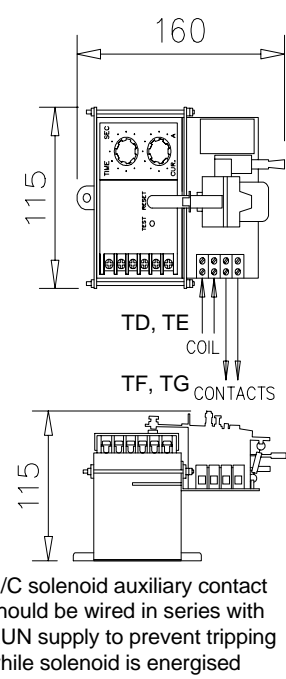
Operating temperature:	0 to +60°C
Control supply range:	20% from nominal, 45-65Hz
Trip time (overcurrent)	See formula - 10% tolerance
Trip time (phase failure)	< 2s (current >60% trip level)
Effect of control variation	20% gives 3% trip variation
Internal CT burden	< 0.5VA
Max primary cable size	95mm <sup>2</sup> 600/1000V
Control consumption	4VA
Output contacts (0.4p.f.)	240V 2A, 415V 1A
Control terminals	1 or 2 x 2.5mm <sup>2</sup> , integral cover
Withstand voltage	>2kV for 60s phase-phase
Insulation resistance	>100MΩ phase-earth

## RUN, RUND

weight:0.7kg



## WITH SOLENOID RESET



## RELATED PRODUCTS

For Earth Leakage Protection use relay type ELRC33L. See data sheet DELR for further details

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