DET1 & DET1/F DEFROST TIMERS



OVERVIEW

The DET1 timer is a quality timer manufactured by ACDC Dynamics, an ISO 9002 registered company. The timer is microprocessor controlled, giving you high repeat accuracy and is designed for fail-safe operation.

INSTALLATION

The DET1 & DE1/F defrost timers should be installed by a competent electrician in accordance with the relevant diagram. Please read these instructions carefully to ensure that the correct functions, link and time range have been selected and that the control voltage of the timer is correct before switching on. This timer is supplied for use with a standard 11 Pin Base.

The typical application for the DET1 is for cold rooms, which require regular defrosting of the cooling coil inside the cold room. The typical application for the DET1/F (with fan delay) is for a freezer room where blowing warm air immediately after the defrosting cycle could damage products stored in the freezer room. The additional delay for the fan inside freezer room allows the cooling compressor to fill the heat exchanger first with cold refrigerant before circulating the freezer room air through the heat exchanger.

Note that with the DET1, the compressor, and the cold room fan are to be connected to terminal 4 and defrost heater to 3 with a common supply to 1. With the DET1/F, the freezer room fan is to be connected to terminal 9 with its supply connected to 11.

An external thermostat contact can be connected between terminals 5 & 6. In the event of over temperature, this contact should close, terminating the defrost cycle.

FUNCTION

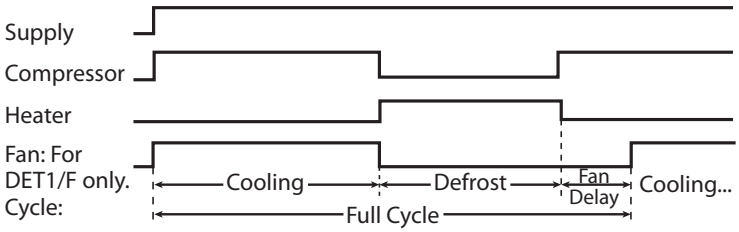
DET1 - When power is applied, the cooling cycle commences. The output relay remains de-energised, the compressor and fan both run. The cooling cycle time is selectable with the two DIP switches at the back of the module.

At the end of the cooling cycle, the output relay energises, the compressor and fan stop, the defrost heater is switched on and he defrost cycle commences. The defrost cycle time can be from 1 to 60 minutes and is set by the adjustment pot on the front of the module. At the end of the defrost cycle, the output relay de-energises, defrost heater switches off, cooling compressor and fan restart and the cooling cycle recommences.

Switch 1	Switch 2	Cycle Time
Off	Off	4 hours
On	Off	6 hours
Off	On	8 hours
On	On	12 hours

If the external over temperature thermostat contact closes during the defrost cycle, the defrost cycle is immediately terminated and the cooling cycle started.
The DET1 will continue cooling and defrosting until the power is disconnected.

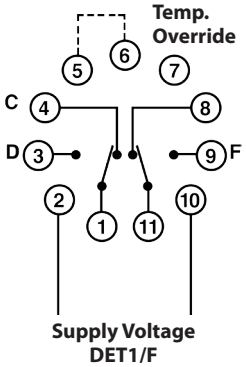
DET1/F - The operation is similar to DET1 except that the fan is controlled by a second output relay. The fan delay period is adjustable from 3 to 360 seconds by means of the additional pot on the front of the module. When ever the cooling cycle commences, the compressor starts and the fan delay time period commences. When the fan delay time period elapses, the fan output relay energises to start the fan. At the end of the cooling cycle, the compressor/heater output relay energises to stop the compressor and switch on the heater, and the fan output relay de-energises to stop the compressor and switch on the heater, and the fan output relay de-energises to stop the fan.

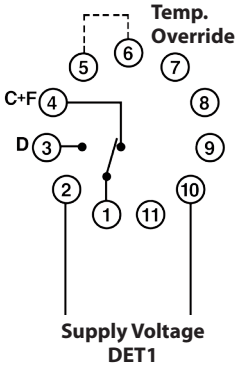


Specifications	
Range Accuracy	0.5%
Repeatability	0.1%
Scale Accuracy	±5%
Reset Time	300mSec
Operating Temperature	-20 - +70°C
Power Consumption	AC: 1.5VA, DC: 100mA
Contact Rating	SPDT: 10A 250VAC
LED Indicators	Defrost ON (red), Fan ON (green)

Available Voltages:
AC: Galvanic isolation with internal transformer 12, 24, 48, 110, 230, 400 or 525VAC ± 15% (Test Volts 2kV) **DC:** 12, 24, 48VDC

C: Cooling Compressor **D:** Defrost Heater **F:** Fan





BRANCH CONTACT DETAILS

Johannesburg:	010 202 3300
Cape Town:	021 510 0710
Pinetown:	031 700 4215
Germiston:	011 418 9600
Riverhorse:	031 492 4800

NATIONAL CALL CENTRE

Sales 010 202 3400
Technical 010 202 3500

www.acdc.co.za

TE01 PHASE ANGLE RELAYS

www.acdc.co.za



OVERVIEW

The ACDC Dynamics TE01 Phase Angle Relay provides protection for your submersible pump and motor with High Repeat Accuracy.

FEATURES

- Low Water (Dry Running Protection)
- Blocked Inlet/Outlet Protection
- Manual Calibration

Code	TE01*
11 Pin Plug In	●
Running dry- Under load blocked in/outlet	●
Star / Delta or Soft Start	●**
Shunt Required	●

* for 230VAC and 400VAC ** **TE01/S** only

SETTINGS

1. Gently turn the KILOWATT ADJ. knob to its low setting. With sufficient water supply in the borehole, start the pump. If the contactor drops out after a few seconds at the lowest setting, change the following connections:
   - Where a CT is fitted - reverse CT connections S1 & S2
   - Where no CT is fitted - reverse L1 & L2 on the incoming supply (at the isolator or circuit breaker - not at the contactor). Check direction of pump.
2. With the pump running, turn the knob clockwise until the light is at its brightest. To check kW setting, close all discharge valves or traps and the pump should switch off. If it does not slightly increase the setting, turn towards high.
3. Set the TIMER for the time you want the pump to restart after the borehole runs dry.
4. Wait and verify that the pump stops when the borehole runs dry.
5. After setting up, remove the adjustment spindle to prevent tampering.

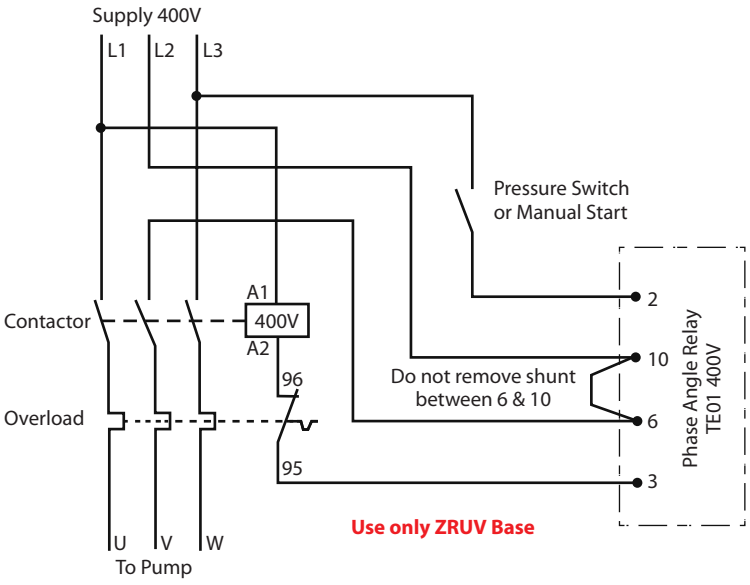
INSTALLATION FOR THREE PHASE 400V

1. This device is intended for use with three phase (400V) borehole and similar pumps and should be mounted within a suitable electrical enclosure and connected by a qualified electrician in accordance with the relevant drawing above, connect pressure/start switches only where shown.
2. One white shunt, supplied loose with the unit, must be fitted at all times to the recommended plug-in base, ZRUV.
3. For all motors 10 HP/7.5kW and larger, a current transformer (CT) must be installed and is available at an extra charge.
4. For use with Star-Delta Starters, use TE01/5 400V and obtain wiring diagram from ACDC Dynamics. This relay is supplied for use with a standard 11 Pin Base.

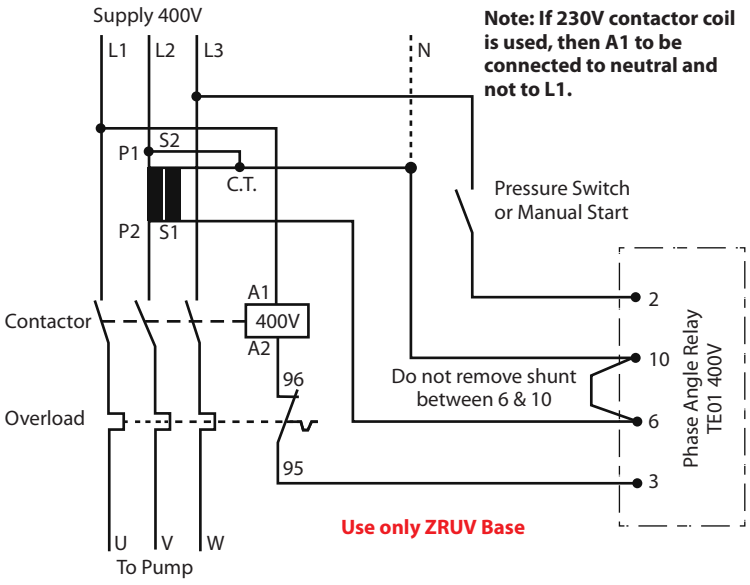
Ordering Chart											
HP	1/2 - 1½	2 - 7½	10	15	20	25	30	40	50	60	75
kW	0.37 - 1.1	1.5 - 5.5	7.5	11	15	18.5	22	30	37	45	55
Shunt	Red	White									
C.T. Part No.	-	-	PW205	PW305	PW405		MR1505	MR1755	MR11005		MR11505

For larger pump sizes, select a CT with 5A secondary to be the next size larger than the motor FLC, or consult your nearest ACDC Dynamics Branch.

Connection Diagram up to 7.5HP/5.5kW



Connection Diagram up to 10HP/7.5kW & Above



BRANCH CONTACT DETAILS

Johannesburg:	010 202 3300
Cape Town:	021 510 0710
Pinetown:	031 700 4215
Germiston:	011 418 9600
Riverhorse:	031 492 4800

NATIONAL CALL CENTRE

Sales 010 202 3400
Technical 010 202 3500

www.acdc.co.za