

Monitoring devices



Function	Two level liquid level		Four probe liquid level																																								
Model	DLL		DLL4																																								
Description of operation	<p>1. Emptying The relay operates when the liquid reaches the MAX electrode (contact 7), and releases when the liquid is no longer in contact with the MIN electrode (contact 9). Contact 10 must be connect to the container (if conductive) or a separate additional electrode should be used.</p> <p>2. Filling The relay releases when the liquid reaches the MAX electrode (contact 7) and operates when the liquid is no longer in contact with the min electrode (contact 9). Contact 10 must be connect to the container (if conductive) or a separate additional electrode should be used.</p> <p>Single level The relay can also be used for single level control high or low by only connecting one level electrode.</p>	<p>1. Emptying with Alarm Relay1 operates when liquid reaches the MAX1 electrode (contact 7) if liquid continues to fill to the MAX 2 electrode level relay 2 (alarm) reset when the liquid drops to below the MIN 1 electrode (contact 11) relay 1 resets. If level continues to drop to below MIN 2 level relay 2 (alarm) will reset.</p> <p>2. Filling with Alarm Relay1 releases when liquid reaches the MAX1 electrode (contact 7) if liquid continues to fill to the MAX 2 electrode level relay 2 (alarm) reset when the liquid drops to below the MIN 1 electrode (contact 11) relay 1 operates. If level continues to drop to below the MIN 2 level electrode relay 2 (alarm) resets.</p> <p>3. Emptying with pump priority Relay1 operates when liquid levels reaches the MAX1 electrode (contact 7) relay 1 releases when level drops to below MIN 1 electrode (contact 11). If the level reaches MAX 2 electrode, relay 2 operates and remains energised until level drops to below MIN 2 electrode, whereafter relay 2 releases. This way the stand-by pump is activated, emptying the tank faster.</p> <p>4. Filling with pump priority Relay1 releases when liquid level reaches the MAX1 electrode (contact 7) relay 1 operates when level drops below MIN 1 electrode (contact 11). If the level drops below MIN 2 electrode (contact 13), relay 2 operates and remains energised until MAX 2 electrode is reached, whereafter relay 2 releases. This way the stand-by pump is activated, filling the tank faster.</p> <p>5. Container filling and well draining with alarm Relay1 operates when liquid level reaches MAX2 in the well. Relay 1 releases when level reaches MAX 1 in the container or MIN 2 in the well relay 2 (alarm) will release if level is below MIN 1 (in container) and MIN 2 (in well)</p> <p>6. Electrode test All indicators are on if the (contact 14 and contact 13) is in good contact with liquid and the liquid is sufficiently conductive. No LED indicates that the poor contact (resistance higher than 80kohm)</p> <p>Time delay: 1 - 10sec (adjustable) response delay is incorporated.</p>	<p>The unit monitors the following parameters and respond accordingly</p> <p>Voltage sensing The relay releases if the supply voltage exceeds or falls below 15% of the set limit stored during calibration. If the voltage returns to within 15% of the set value the relay will automatically operate, starting the pump.</p> <p>Phase Failure / Sequence If there is a loss of any phases supplied to the unit the relay release. If any two phases are reversed the relay will release. The relay will automatically operate if the sequence is restored or the phase loss is corrected.</p> <p>Overload sensing If the current exceeds the set limit stored during calibration the relay will release after a one second delay. The relay will restart after a 10 second pause. If an over current condition is detected three consecutive times the unit will trip permanently until the power is removed and reapplied.</p> <p>Underload sensing The unit will detect a loss of load but detecting the increase in angular lag between the voltage and the current. The underload will release the relay after a 10 seconds delay. The relay will remain off for the recovery time, after which the unit will restart the pump.</p> <p>The unit can be calibrated from an un-calibrated state (all LED flashing) by pressing the front cover 'SET' button. The unit can be reset (not re-calibrated) from a latched fault state by pressing the 'SET' button. This can only be done three times in 15 minutes. This limit on restarts applies to non-latching faults. To re-calibrate the unit, the 'SET' button has to be press when the supply is applied to the unit until the POWER LED stops flashing.</p> <table border="1"> <thead> <tr> <th></th> <th>POWER LED</th> <th>STATUS LED</th> <th>RELAY LED</th> </tr> </thead> <tbody> <tr> <td>Over voltage</td> <td>flashing</td> <td>on</td> <td>off</td> </tr> <tr> <td>Under voltage</td> <td>on</td> <td>flashing</td> <td>off</td> </tr> <tr> <td>Over Current</td> <td>flashing</td> <td>off</td> <td>off</td> </tr> <tr> <td>Under Current</td> <td>off</td> <td>flashing</td> <td>off</td> </tr> <tr> <td>Phase Reversal</td> <td>flashing</td> <td>flashing</td> <td>off</td> </tr> <tr> <td>Contact 8&9 open</td> <td>on</td> <td>off</td> <td>flashing</td> </tr> <tr> <td>Startup delay</td> <td>on</td> <td>off</td> <td>flashing</td> </tr> <tr> <td>Pump Running OK</td> <td>on</td> <td>off</td> <td>on</td> </tr> <tr> <td>Uncalibrated</td> <td>flashing</td> <td>flashing</td> <td>flashing</td> </tr> </tbody> </table>		POWER LED	STATUS LED	RELAY LED	Over voltage	flashing	on	off	Under voltage	on	flashing	off	Over Current	flashing	off	off	Under Current	off	flashing	off	Phase Reversal	flashing	flashing	off	Contact 8&9 open	on	off	flashing	Startup delay	on	off	flashing	Pump Running OK	on	off	on	Uncalibrated	flashing	flashing	flashing
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Time adjustment	via dedicated calibrated front knob (scale accuracy: ±5%)																																										
Standard Voltages	AC: 12, 24, 48, 110, 230, 400, 525V ±15% DC: 12, 24, 48, ±15%																																										
Contact rating	10A 250VAC		16A 250VAC																																								
Consumption	AC: ±2.4 VA DC: 100 mA																																										
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Mechanical life	30 million operations																																										
Ambient limits	(operating) -20 + 60°C																																										
Dimensions	(H) 92mm x (D) 64mm (W) 35.5mm (2 modules wide)		(H) 92mm x (D) 64mm (W) 53.5mm (3 modules wide)																																								
Connection diagram																																											
Price																																											



Monitoring devices



Tachometer	Temperature controller	Power supply	GSM controller
DTM	DTC	DPSU	GSM
<p>On the unit over or under speed detection can be selected. While the speed remains below the set speed (over speed) or above (under speed) the relay will remain energised. The unit senses speed with a standard NAMUR 2 wire sensor. Four ranges can be selected :</p> <p>Speed Range</p> <p>1 – 10 Rpm 10-100 Rpm 100-1000 Rpm 100-1000 Rpm 1000-10000 Rpm</p>	<p>The unit interfaces with our TP1 probe. The unit can be set for over or under temperature where the relay de-energises when the temperature rises above (over temp.) or fall below (under temperature) the set limit.</p> <p>Hysteresis 5-50%.</p> <p>Ranges :</p> <p>-20 - +80 degrees +10 – +50 degrees -10 - +10 degrees 0 - +80 degrees</p>	<p>Provides a regulated DC output from an AC input source (24VA)</p> <p>30 VA output, 9/12/24</p>	<p>When the power supply is applied and a 20 second startup delay elapses the unit sends a SMS 'Power On' to the save GSM telephone number. 4 numbers to which all SMS are sent can be programmed into the unit by sending 'Save' all etc to the unit from that phone.</p> <p>Both relays can be controlled by sending the following SMSs to the unit</p> <p>SMS Commands</p> <p>PLEASE NOTE:</p> <p>First letter of every word CAPITALIZED xxx is user input ...(max 12 letters including spaces)</p> <p>All On Energizes all outputs(2&6,8&10) All Off De-Energises all outputs Energizes output 1 (2&6) Out1 On De-Energises output 1(2&6) Out2 On Energizes output 2 (2&8,10) Out2 Off De-Energises output 2 (2&6) Pulse1 Pulse Output 1 for 0.5sec Pulse2 Pulse Output 2 for 0.5sec Outputs Queries Outputs (replies with status of outputs) Inputs Queries Inputs (replies with status of inputs) Airtime Replies with remaining air time (Error if not "pay as you go") I1on xxx... Change input 1 ON text I1off xxx... Change input 1 OFF text I2on xxx... Change input 2 ON text I2off xxx... Change input 2 OFF text I3on xxx... Change input 3 ON text I3off xxx... Change input 3 OFF text Save1 Save number of current phone to position 1 of the DGSM Save2 Save number of current phone to position 2 of the DGSM Save3 Save number of current phone to position 3 of the DGSM Save4 Save number of current phone to position 4 of the DGSM Delete1 Delete number of current phone to position 1 of the DGSM Delete2 Delete number of current phone to position 2 of the DGSM Delete3 Delete number of current phone to position 3 of the DGSM Delete4 Delete number of current phone to position 4 of the DGSM Telme1 Activate Telemetry function 1 with number in international format (eg 27824508840) Telme1 Deactivate Telemetry function 1 Telme2 Activate Telemetry function 2 with number in international format (eg 27824508840) Telme2 Deactivate Telemetry function 2</p> <p>The inputs can be queried by sending 'Inputs' Antenna (ANT 1) and SIM Card to be bought separately, (Pg148).</p>
110, 230, 400V are equipped with internal transformer voltage. (test volts: 2kV)			N/A
±0.5%			
±0.2%			
via dedicated calibrated front knob (scale accuracy: ±5%)			
AC: 12, 24, 48, 110, 230, 400, 525V ±15% DC: 12, 24, 48, ±15%		96-240VAC	12,24VDC ±15%
10A 250VAC		N/A	6A 200V
	AC: ±2.4 VA DC: 100 mA		2000mA
0.5 sec (500 mSec)			
2kV between supply / output and adjacent contacts 1kV between open contacts.			
30 million operations		N/A	
(operating) -20 + 60°C			
(H) 92mm x (D) 64mm (W) 35.5mm (2 modules wide)			

Monitoring devices



Function	Phase failure / reversal relay	Voltage window comparator + phase failure		
		(single phase)	(three phase)	(three phase + neutral)
Model	DPF - DPF/K	DVW1	DVW3	DVW3N
Description of operation	<p>The relay will operate while all three phases are:</p> <ul style="list-style-type: none"> present in the correct sequence balanced <p>If any of the above conditions change the relay will release until conditions are restored to normal again.</p>	<p>Single phase The relay operates as long as measured voltage remains within the pre-set "upper" and "lower" limits. If monitored voltage exceeds or falls below the pre-set limits, the relay will release.</p> <p>Three phase The relay operates as long as measured voltage remains within the pre-set "upper" and "lower" limits and all phases are present and in a sequence. If monitored voltage exceeds or falls below the pre-set limit or a phase is lost or out of sequence, the relay will release. With phase reversal both LED's on.</p> <p>Three phase + neutral Same as DVW3 but also monitors the neutral phase</p> <p>Delays: can be activated via front selector</p> <p>1) No Delay Measurement starts immediately and relay responds directly (normal acquisition delays apply)</p> <p>2) Startup delay 10 sec On application of supply relay operates immediately power (LED flashes) monitoring only starts after 10 sec (power LED steadies)</p> <p>3) 180 sec Recovery delay On application of supply relay does not operate (power LED flashes) for 180 sec whereafter relay operates (power LED steadies). If relay trips the 180 sec delay is activated (power LED flashes) before relay operates again.</p> <p>4) Reaction delay 10 sec Relay operates immediately and power LED flashes when power supply is applied. Measurement starts after 10 sec and power LED stops flashing. The relay will only release after a fault condition has been present longer than for 10 sec.</p>		
Galvanic insulation	110, 230, 400V are equipped with internal transformer voltage. (test volts: 2kV)			
Range accuracy	±0.5%			
Repeat accuracy	±0.2%			
Time adjustment	via dedicated calibrated front knob (scale accuracy: ±5%)			
Standard Voltages	AC: 110, 230, 400, 525V ±15%			
Contact rating	10A 250VAC			
Consumption	AC: ±2.4 VA DC: 100 mA			
Reset time	0.5 sec (500 mSec)			
Insulation	2kV between supply / output and adjacent contacts 1kV between open contacts.			
Mechanical life	30 million operations			
Ambient limits	(operating) -20 + 60°C			
Dimensions	(H) 92mm x (D) 64mm (W) 35.5mm (2 modules wide)			
Connection diagram				
Price				



Monitoring devices



Voltage monitor	Frequency monitor	Current window comparator	Current monitor
DVM	DFM	DCW / DCW15	DCM / DCM15
<p>Monitors a separate voltage than supply configurable for "over" or "under" voltage monitoring via front mounted selector.</p> <p>Over voltage The relay operates as long as monitored voltage remains below the pre-set limit. If the limit is exceeded the relay releases and will only operate again when monitored voltage exceeds the pre-set hysteresis percentage 5-50%. (Difference between trip and recovery level.)</p> <p>Under voltage The relay operates as long as monitored voltage remains above the pre-set limit. If the voltage falls below the limit, the relay releases and will only operate again when monitored voltage exceeds the pre-set hysteresis percentage 5-50%. (Difference between trip and recovery level.)</p> <p>Delays: can be activated via front selector</p> <ol style="list-style-type: none"> 1) No Delay Measurement start immediately and relay responds directly (normal acquisition delays apply) 2) Startup delay 10sec On application of supply relay operates immediately (LED flashes) monitoring only starts after 10 sec (power LED steadies) 3) 180 sec Recovery delay On application of supply relay does not operate (power LED flashes) for 180sec whereafter relay operates (power LED steadies). If relay trips the 180sec delay is activated (power LED flashes) before relay operates again. 4) Reaction delay 10sec Relay operates immediately and power LED flashes when power supply is applied. Measurement starts after 10 sec and power LED stops flashing. The relay will only release after a fault condition has been presented for 10 sec. <p>A latch facility can be enabled by bridging terminals 8 and 10</p>	<p>The relay operates as long as the measured frequency remains within the pre-set "upper" and "lower" limits. If monitored frequency exceeds the "upper" or fall below the lower limits the relay will release.</p> <p>Delays: can be activated via front selector</p> <ol style="list-style-type: none"> 1) No Delay Measurement start immediately and relay responds directly (normal acquisition delays apply) 2) Startup delay 10sec On application of supply relay operates immediately (LED flashes) monitoring only starts after 10 sec (power LED steadies) 3) 180 sec Recovery delay On application of supply relay does not operate (power LED flashes) for 180sec whereafter relay operates (power LED steadies). 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If the monitored current exceeds or falls below the pre-set limits, the relay will release.</p> <p>DCW15 can monitor up to 15A directly.</p> <p>Delays: can be activated via front selector</p> <ol style="list-style-type: none"> 1) No Delay Measurement start immediately and relay responds directly (normal acquisition delays apply) 2) Startup delay 10sec On application of supply relay operates immediately (LED flashes) monitoring only starts after 10 sec (power LED steadies) 3) 180 sec Recovery delay On application of supply relay does not operate (power LED flashes) for 180sec whereafter relay operates (power LED steadies). If relay trips the 180sec delay is activated (power LED flashes) before relay operates again. 4) Reaction delay 10sec Relay operates immediately and power LED flashes when power supply is applied. Measurement starts after 10 sec and power LED stops flashing. The relay will only release after a fault condition has been presented for 10 sec. <p>A latch facility can be enabled by bridging terminals 8 and 10</p> <p>5A/15ADC current also available</p>	<p>Directly interfaces with conventional CT's (5A secondary). Configurable for "over" or "under" current monitoring via front mounted selector.</p> <p>DCM15 can monitor up to 15A directly.</p> <p>Over current The relay operates as long as monitored current remains below the pre-set limit. If the limit exceeded the relay releases and will only operate again when monitored current reduces by the pre-set hysteresis percentage 5-50%. (difference between trip and recovery level)</p> <p>Under current The relay operates as long as monitored current remains above the pre-set limit. If the current falls below the limit the relay releases and will only operate again when monitored current exceeds by the pre-set hysteresis percentage 5-50%. (difference between trip and recovery level)</p> <p>Delays: can be activated via front selector</p> <ol style="list-style-type: none"> 1) No Delay Measurement start immediately and relay responds directly (normal acquisition delays apply) 2) Startup delay 10sec On application of supply relay operates immediately (LED flashes) monitoring only starts after 10 sec (power LED steadies) 3) 180 sec Recovery delay On application of supply relay does not operate (power LED flashes) for 180sec whereafter relay operates (power LED steadies). If relay trips the 180sec delay is activated (power LED flashes) before relay operates again. 4) Reaction delay 10sec Relay operates immediately and power LED flashes when power supply is applied. Measurement starts after 10 sec and power LED stops flashing. The relay will only release after a fault condition has been presented for 10 sec. <p>A latch facility can be enabled by bridging terminals 8 and 10</p>

110, 230, 400V are equipped with internal transformer voltage. (test volts: 2kV)

±0.5%

±0.2%

via dedicated calibrated front knob (scale accuracy: ±5%)

AC: 12, 24, 48, 110, 230, 400, 525V ±15%
DC: 12, 24, 48, ±15%

10A 250VAC

AC: ±2.4 VA
DC: 100 mA

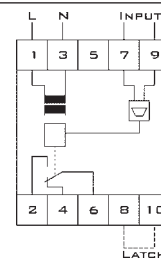
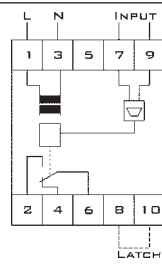
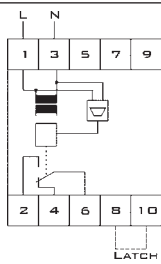
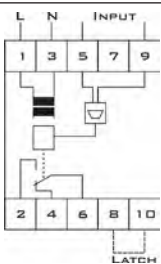
0.5 sec (500 mSec)

2kV between supply / output and adjacent contacts
1kV between open contacts.

30 million operations

(operating) -20 + 60°C

(H) 92mm x (D) 64mm (W) 35.5mm (2 modules wide)



Monitoring devices



Function	Load shed relay with real-time clock	Load shed relay	Three circuit load shed relay
Model	DRLS	DLS	DLS3
Description of operation	<p>The relay will remain off for 15 min on applying power to the unit. After which the relay energises. The input is monitored and will release the relay if the current exceeds 5A. . The relay will only operate again if the current remains below the limit for 15 min.</p> <p>The geyser will switch off in the pre-programmed peak time. This can be overridden by pressing and releasing the front panel button. The status LED will flash and the geyser will remain on for 1 hour.</p> <p>The geyser can be switched off by pressing the front panel button for more then 10s. The power light will start flashing and the relay will release. The unit can be switched to normal operation by pressing the front panel button again for 10s.</p> <p>Current settings 5A (via front mounted selector) Current over 16Amps on the sensing circuit requires a CT.</p>	<p>Designed to monitor current consumption and disconnect non-critical loads from the system. Idea for load-shedding in domestic applications where geysers can be disconnected when switching on the stove selectable current setting 5A (or) 10A.</p> <p>On applying supply, relay is operated as long as detected current is below pre-set limit 5A (or) 10A. If current exceeds the limit the relay will release disconnecting the circuit and only operate pre-set once sensed current drops below the set limit for 15 minutes.</p> <p>On start-up unit delays relay for 15 min.</p> <p>Current settings 5A (or) 10A (via front mounted selector) Current over 16Amps on the sensing circuit requires a CT.</p>	<p>Step Function The load shed relay continuously compares the input current to the set value. If the input current exceeds the set value relay 1 energises to disconnect the first circuit. If the overload is still present the next relay will be energised. The unit will attempt to reconnect removed circuits after 5min. If no overload is present all circuits will be re-connected. This enables circuits to be removed in a priority manner.</p> <p>Cyclic Function If a circuit is re-connected after the 5 min cycle time, and an overload remains the unit will remove the next circuit in a cyclic fashion. When a new overload condition is detected the next circuit in the cycle is removed. This enables circuits to be functional without priority.</p>
Galvanic insulation	110, 230, 400V are equipped with internal transformer voltage. (test volts: 2kV)		
Range accuracy	±0.5%		
Repeat accuracy	±0.2%		
Time adjustment	via dedicated calibrated front knob (scale accuracy: ±5%)		
Standard Voltages	AC: 110,230,400,525V +/- 15%		
Contact rating	16A 250VAC	1 x 16A 2 x 6A	
Consumption	AC: ±2.4 VA DC: 100 mA		
Reset time	0.5 sec (500 mSec)		
Insulation	4kV between supply / output and adjacent contacts 1kV between open contacts.		
Mechanical life	30 million operations		
Ambient limits	(operating) -20 + 60°C		
Connection diagram			
Price			



Monitoring devices



Function	Signal isolator	Voltage converter (non-isolated)	Current converter
Model	DSI	DVC	DCC
Description of operation	The SI120 is a signal isolator designed to eliminate potential ground loop problems prevalent in 4-20mA control loops. It can also be used in other applications where galvanic isolation is a requirement. The unit incorporates two isolated 24 VDC power supplies for input and output loops allowing it to be used with mains and/or loop powered transmit and receive instruments without the need for additional power supplies. Both power supplies are current limited at 30mA. Isolation is achieved by the use of an opto-coupler current mirror circuit.	The unit accepts specified voltages and converts them (true RMS) into either current or voltage output such as 4- 20mA or 0-5Vdc	The unit accepts specified current direct or from a CT and converts (true RMS) them into either current or voltage output such as 4- 20mA or 0-5Vdc
Standard voltage	AC: 110,230,400, 525 VAC 50Hz		
Galvanic isolation	110,230,400 525V are equipped with internal transformers providing effective galvanic separation of the electronic circuitry from supply voltage. (test volts: 2kV)		
Input signal options	1 = 0-10Vdc 5 = 0-5Vdc 4 = 4-20mA 0 = 0-20mA	eg: 0-600Vac or Vdc 0-230Vac or Vdc	0-5A 0-15A
Output signal options	4 = 4-20mA 5 = 1-5Vdc 0 = 0-20mA 1 = 0-10Vdc		
Extra	N/A		
Accuracy	Linear +/- 0.2%		
Consumption	+/- 3VA		
Ambient limits	(operating) -5 - + 60°C		
Type of duty	Continuous (100%)		
Response time	+/-0.5sec		
Price			

Monitoring devices



Function	Digital counter/timer	Digital temperature controller with timer	Digital temperature controller																												
Model	DDCT	DDTCT	DDTC																												
Description of operation	<p>Function 1: Counter Can be set to count up and/or down. A pre-scaler can be selected The pulse length can be adjusted. The de-bounce time can be set to eliminate contact bounce on a mechanical switch. The counter can be manually reset with the reset input (pin 9)</p> <p>Function 2: Timer The timer can be set to count up or down. The pulse length can be set in the menu. The timer can be manually reset with the reset input (pin 9)</p> <p>Function 3: Timer with start/Stop The timer can be started and stopped by Input1 (pin 13). The timer will start timing when Input1 is activated and stop when it is activated again.</p> <p>Function 4: timer with timing on activation When Input1 is activated the timer starts timing and will stop if Input 1 is de-activated.</p> <p>Menu Diagram "SET" Button Momentarily Count / Time setpoint "SET" Button 4 seconds</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>1-Counter</td> <td>2-Timer</td> <td>3-Timer</td> <td>4-Timer</td> </tr> <tr> <td></td> <td></td> <td>pulse start/stop</td> <td>start/stop</td> </tr> <tr> <td>Debounce</td> <td>Up/Down</td> <td>Up/Down</td> <td>Up/Down</td> </tr> <tr> <td>Pre-scaler</td> <td>Pulse Length</td> <td>Pulse Length</td> <td>Pulse Length</td> </tr> <tr> <td>Up/Down</td> <td>Range</td> <td>Range</td> <td>Range</td> </tr> <tr> <td>Pulse Length</td> <td>Show Relay</td> <td>Show Relay</td> <td>Show Relay</td> </tr> <tr> <td>Show Relay</td> <td></td> <td></td> <td></td> </tr> </table>	1-Counter	2-Timer	3-Timer	4-Timer			pulse start/stop	start/stop	Debounce	Up/Down	Up/Down	Up/Down	Pre-scaler	Pulse Length	Pulse Length	Pulse Length	Up/Down	Range	Range	Range	Pulse Length	Show Relay	Show Relay	Show Relay	Show Relay				<p>Temperature Controller The temperature relay remains energized until the measured temperature is above the set point. If the temperature moves below the set point minus the hysteresis the relay energises and will only de-energise when the temperature moves above the set point. The hysteresis eliminates chattering off the contacts.</p> <p>Timer The Timing contact will close if the clock time, set in the advanced function falls between the two set times. The time clock has battery backup and will keep the time even after power is removed.</p> <p>Menu Diagram "SET" Button Momentarily Temperature setpoint "SET" Button 4 seconds Clock On Time 1 Off Time 1 On Time 2 Off Time 2 Over ride On Time Interfaces with TP1 probe</p>	<p>A trip point can be set for each of the two relays. Hysteresis for each trip points can be set. The two relay can be set independently for over or under operation. The maximum and minimum temperature for the set point adjustment can also be set.</p> <p>Menu Diagram "SET" Button Momentarily Temperature setpoint "SET" Button 4 seconds Function setting (for future use) Hysteresis 1 Hysteresis 2 Max temperature set point Min temperature set point Heating/Cooling 1 Heating/Cooling 2 Interfaces with TP1 probe</p>
1-Counter	2-Timer	3-Timer	4-Timer																												
		pulse start/stop	start/stop																												
Debounce	Up/Down	Up/Down	Up/Down																												
Pre-scaler	Pulse Length	Pulse Length	Pulse Length																												
Up/Down	Range	Range	Range																												
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