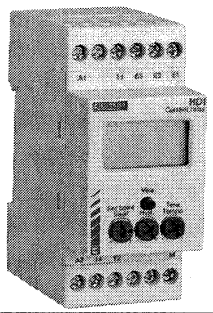
HDI Series Current Control

Crouzet

HDI

- **Displays the current value and the preset on LCD**
- **Controls AC & DC signals (auto Detection)**
- **Overload or underload selectable**
- **Threshold and Hysteresis adjusted separately**
- **Memory function in case of fault**
- **Delay on threshold crossing**
- **UL / cUL listed CSA recognized CE compliant**

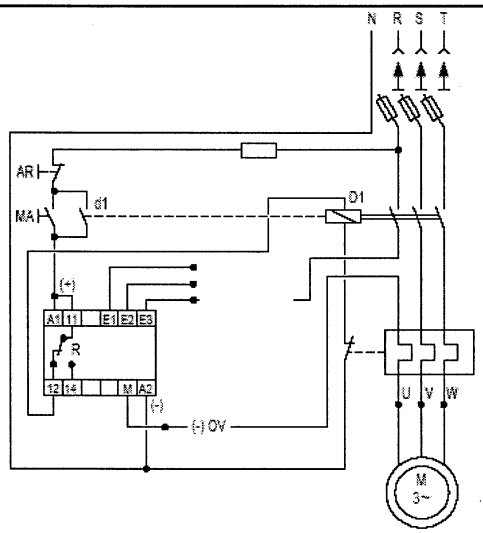


OPERATING PRINCIPLE: Controls AC and DC currents:

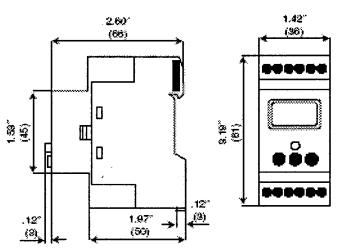
HDI's are designed to control an AC or DC electrical signal. The threshold and hysteresis are adjusted separately via 2 potentiometers on the front face. Prior to power up, the operating mode should be selected using the 4 dip switches located on the side of the unit (with/without memory, overload/underload and the specific operating range, 500mA or 10A). The supply voltage is applied to A1 and A2. The monitored signal is connected in series to terminals E1 E2 or E3 (depending on the range selected) and terminal M.

TYPE	HDI - L	HDI - H
INPUTS	E1-M : 2-20mA	E1-M : 0.1 - 1A
	E2-M : 10-100mA	E2-M : 0.5 - 5A
	E3-M : 50-500mA	E3-M : 1 - 10A
Input Resistance	E1-M : 5 ohm	E1-M : 0.1 ohm
	E2-M : 1 ohm	E2-M : 0.02 ohm
	E3-M : 0.2 ohm	E3-M : 0.01 ohm
Max permanent I @ 20C	E1-M : 40mA	E1-M : 2A
	E2-M : 200mA	E2-M : 10A
	E3-M : 1A	E3-M : 14A
Peak overload < 1ms @ 20C	E1-M : 1A	E1-M : 17A
	E2-M : 5A	E2-M : 20A
	E3-M : 8A	E3-M : 50A
Maximum Line Voltage	277Vdc / 480Vac	

Wiring Diagram



Dimensions Inches (mm)



Part Numbers

24VDC	HDIL	2 -500mA	84871301
24 VAC	HDIL	2 -500mA	84871302
120 VAC	HDIL	2 -500mA	84871304
230 VAC	HDIL	2 -500mA	84871305
24VDC	HDIH	0.1 - 10A	84871306
24 VAC	HDIH	0.1 - 10A	84871307
120 VAC	HDIH	0.1 - 10A	84871309
230 VAC	HDIH	0.1 - 10A	84871310

Specifications:

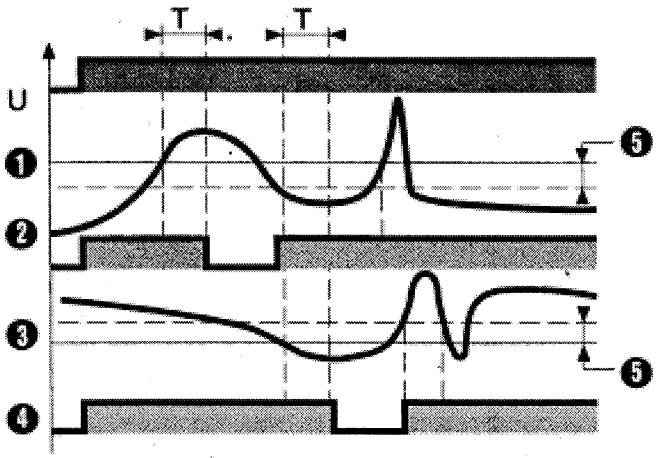
Input Power	24VDC, 24, 110, 230 VAC + 15%, 50/60 Hz
Max. power consumption	3VA at 230,120, 24VAC 1W at 24VDC
Frequency of measured signal (AC)	40-500 Hz
Setting accuracy - threshold	±10% of selected threshold
Hysteresis selection	5-50% of displayed threshold
Repeat Accuracy	±.1% w/constant parameters
Delay on threshold crossing	0.1 to 3 sec. - adjustable
Output	SPDT
Maximum current	5A resistive
Minimum current	100mA
Maximum switching voltage	250VAC
Electrical life of relay	500K operations at full load
Mechanical life of relay	5000K operations
Contact material	AgCdO
Case Material	Self extinguishing
Protection	Casing IP 40 Terminal IP20 Housing IP 50
Operating Temperature	-4F to140F(-20C to 60C)
Storage temperature	-22F to158F(-30C to 70C)
Relative Humidity (No condensation)	93% +2% -3%
Weight	11.2 oz. (320g)
Threshold display accuracy	+/-10%
Display	Relay Status Over or Under mode Memory function Type of signal AC or DC Measurement overflow
Immunity to power cuts	10mS
Delay on pick-up	500mS
Insulation	Category III, pollution degree 2 IAW IEC 664-1 & VDE 0110 4KV2

Note: 24VDC input version. The input voltage and the measured current **must be from separate sources**. The "negative" poles of the auxilliary power supply and the measurement circuit are connected internally

Operating Principles

The HDI is designed to control AC or DC currents. The threshold and Hysteresis can be adjusted independently of each other via the 2 potentiometers on the front face. Before appying power you must select the operating mode using the dip switches located on the bottom side of the relay (with/without memory, over/under load). The mode is validated when power is applied to the relay. The current to be monitored is connected between terminals E1, E2, E3 and M depending on the range. See Settings

Current control without Memory



When the value of the AC / DC current reaches the set threshold value the output relay changes state at the end of the time delay T1 (contacts 11 & 14 open). The relay changes state again (contacts 11 & 14 closed) when the current falls below the threshold minus the hysteresis in the overload position, or above the threshold plus the hsysteresis in the underload position.

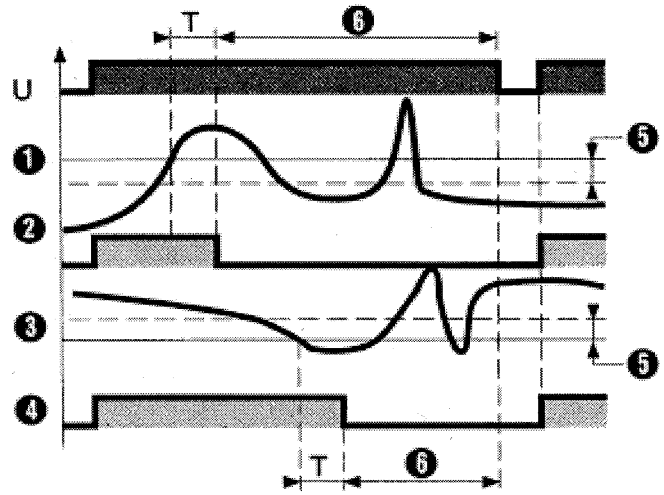
Notes

The threshold crossing time delay T1, which is adjusted on the front face from 0.1 to 3s ensures immunity to transient currents and other interferences, preventing the output relay from chattering.

In the "underload position the absolute value of the Hysteresis cannot be more than the maximum value of the measured range.

❶ Threshold ❷ Oper. R Overload ❸ Threshold ❹ Oper. R Underload ❺ Hysteresis

Current control with Memory



When the value of the AC / DC current reaches the set threshold value the output relay changes state at the end of the time delay T1 (contacts 11 & 14 open) and remains in that condition.
The relay is reset by disconnecting power from terminals A1 & A2.
The memory mode allows for the detection of over or under current values for short durations.

❶ Threshold ❷ Oper. R Overload ❸ Threshold
❹ Oper. R Underload ❺ Hysteresis ❻ Memory

Settings

The setting switches can be found on the lower side of the relay.
The switch settings for the different modes can be found on the right side of the relay in the lower left hand corner. Squares indicate switch positions