

- RC30: Current monitoring    RV30: Voltage monitoring**
- 3 metering inputs in each module**
- Adjustments for setpoint and time delay**
- Selectable relay inversion, time delay, hysteresis and start-up delay**
- Automatic detection of AC or DC metering input**
- DC supply or AC supplies up to 230 VAC**
- Made in accordance with the CE and EMC regulations**



C-mac® current monitoring relay, type RC30, and voltage monitoring relay, type RV30 are universal metering relays, each supplied with 3 metering ranges, automatic detection of AC or DC input signal, plus a 24 VDC output voltage, for the supply of external sensors or the like.

By means of a DIP-switch in the bottom of the unit you can select between 4 different combinations of relay inversion and reaction-delay, 5 or 15% hysteresis and start-up delay.

On the front of the unit you can adjust the setpoint and reaction-delay between 0 and 10 seconds.

The monitoring relays are each available in 3 different variants, which makes it possible to select current ranges between 0.1 to 2 mA and 0.25 to 6 A, and voltage ranges between 3 to 60 mV and 25 to 600 V.

The start-up has the following function:  
When the DIP-switch for selection (switch 4) is off, there will be no start-up delay, which means the monitoring will start, when the supply voltage is connected.

When switch 4 is on, there will be a fixed start-up delay of 10 seconds, and in this period the output relay is in the position, which corresponds to no signal on the input, and after this period, the output corresponds to the actual input signal.

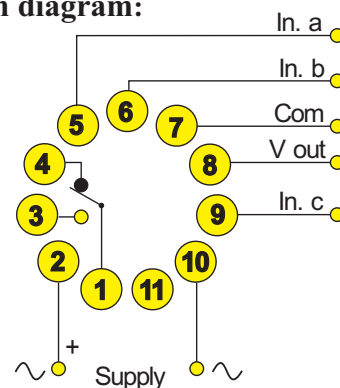
This function is particularly interesting, if you are monitoring a load, which has a very high start-up current.

The units are supplied for 24, 115 or 230 VAC supply or 10-50 VDC supply.

### Metering ranges, max. input signals and input impedances ( $R_{in}$ ):

Module	input a	input b	input c
RC type 1	1-20 mA max. 0,1 A $R_{in}=72 \Omega$	0,5-10 mA max. 80 mA $R_{in}=122 \Omega$	0,1 - 2 mA max. 50 mA $R_{in}=524 \Omega$
RC type 2	25-500 mA max. 0,8 A $R_{in}=2,7 \Omega$	10-200 mA max. 0,5 A $R_{in}=3,2 \Omega$	5-100 mA max. 0,5 A $R_{in}=4,7 \Omega$
RC type 3	0,25-6 A max. 8 A $R_{in}=7 m\Omega$	0,05-1 A max. 3 A $R_{in}=40 m\Omega$	-
RV type 1	3-60 mV max. 1 V $R_{in}=10 k\Omega$	7,5-150 mV max. 2 V $R_{in}=25 k\Omega$	0,05-1 V max. 10 V $R_{in}=168 k\Omega$
RV type 2	0,5-10 V max. 60 V $R_{in}=111 k\Omega$	1-20 V max. 100 V $R_{in}=221 k\Omega$	2,5-50 V max. 150 V $R_{in}=553 k\Omega$
RV type 3	5-100 V max. 200 V $R_{in}=1 M\Omega$	10-200 V max. 400 V $R_{in}=2 M\Omega$	25-500 V max. 600 V $R_{in}=5,1 M\Omega$

### Connection diagram:



## Common technical data:

<b>Supply, AC:</b>	24, 115 and 230 VAC +/- 10%
<b>Supply frequency:</b>	40-70 Hz
<b>Supply, DC:</b>	12-50 VDC
<b>Isolation voltage:</b>	Supply-input-output: 3.75 kV
<b>Power consumption:</b>	3 VA
<b>Operation temp.:</b>	-20°C to +60°C
<b>Humidity:</b>	0 - 90% RH, non-condensing
<b>Temp. coefficient:</b>	< 0,01% /°C

### Indications:

Green LED, active:	Supply ON and input OK
flashing:	Supply ON and input signal outside the metering range
Red LED:	Relay active

### Selection of function:

S1-S2:	relay inversion and reaction delay, see functional diagram
S3:	Hysteresis: OFF: 5%, ON: 15%
S4:	Start-up delay: OFF: no delay ON: 10 seconds delay

### Adjustments:

Potentiometer 1:	setpoint, 0-100% of the range
Potentiometer 2:	reaction delay, 0-10 seconds

### Transducer supply:

Pin 8,	
V <sub>out</sub> :	24 VDC +5% -20%
I <sub>out</sub> :	max. 22 mA

**Max. load, relay:** 8 A - 250 VAC, ohmic load

## EMC and safety regulations.

<b>Emmission:</b>	EN 50 081 - 1
<b>Immunity:</b>	EN 50 082 - 2
<b>Safety:</b>	EN 60 730

**Approvals:** The units are produced in accordance with the CE og low voltage regulations.

## Ordering guide, RC30:

supply	type number
12-50 VDC	RC30-1-4-012-x
24 VAC	RC30-1-1-024-x
115 VAC	RC30-1-1-115-x
230 VAC	RC30-1-1-230-x

x= metering range:

1 = 0,1-2 mA, 0,5 - 10 mA and 1 - 20 mA
2 = 5 - 100 mA, 10 - 200 mA and 25 - 500 mA
3 = 0,05 - 1 A and 0,25 - 6 A

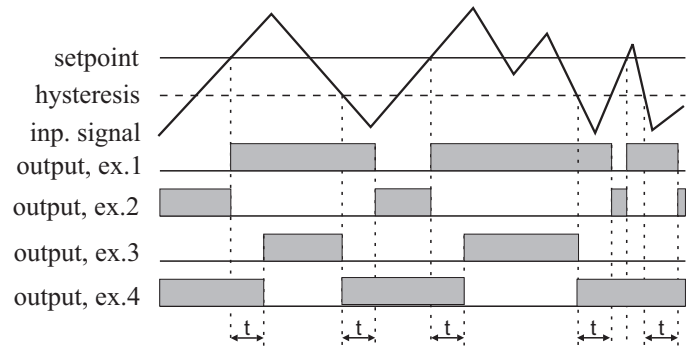
## Ordering guide, RV30:

Supply	type number
12-50 VDC	RV30-1-4-012-x
24 VAC	RV30-1-1-024-x
115 VAC	RV30-1-1-115-x
230 VAC	RV30-1-1-230-x

x = metering ranges:

1 = 3 - 60 mV, 7,5 - 150 mV and 0,05 - 1 V
2 = 0,5 - 10 V, 1 - 20 V and 2,5 - 50 V
3 = 5 - 100 V, 10 - 200 V and 25 - 500 V

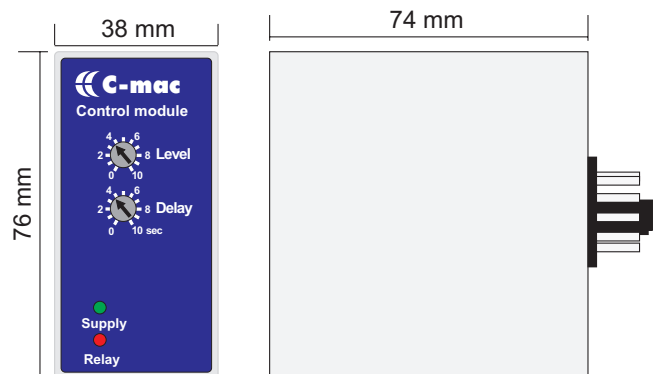
## Functional diagram:



## Selection of function:

SW 1	SW 2	ex. no.	function
OFF	OFF	1	Relay activates, when setpoint is exceeded, delay on release
ON	OFF	2	Relay releases, when setpoint is exceeded, delay on activate
OFF	ON	3	Delay on activate, when setpoint is exceeded
ON	ON	4	Delay on release, when setpoint is exceeded

## Mechanical dimensions:



## Materials and weight:

<b>Housing:</b>	NORYL-SE-1, grey, self-extinguishing
<b>Housing bottom:</b>	NORYL SE-1, GFN-2, black, self-extinguishing
<b>Terminals:</b>	Nickel-plated brass
<b>Weight:</b>	190 g