

# Monitoring Relays

## 3-Phase Max. and Min. Current Control

### Type H 475

CARLO GAVAZZI



- 3-phased current metering relay
- Measures on current with 3-phased current metering transformers, type A74-... ...
- Measures if all 3-phase currents are within set limits
- Upper and lower limits separately adjustable
- Output: 10 A SPDT relay
- For mounting on DIN-rail in accordance with DIN/EN 50 022
- H4-housing
- LED-indication for power supply and output ON
- AC power supply 2-phases

#### Product Description

3-phase current metering relay with separate setting of upper and lower current level. For DIN-rail mounting. Often used where a certain applica-

tion such as a large mixer has to be kept within a set current value in order not to overload the system.

#### Ordering Key

**H 475 156 230**

Housing \_\_\_\_\_

Type \_\_\_\_\_

Output \_\_\_\_\_

Power supply \_\_\_\_\_

#### Type Selection

Plug	Output	Supply: 115 VAC	Supply: 230 VAC	Supply: 400 VAC
Screw terminals	SPDT	H 475 156 115	H 475 156 230	H 475 156 400

#### Input Specifications

Input from current transformers	A74-... ...
Terminal 5	red, phase L1
Terminal 6	white, phase L2
Terminal 7	yellow, phase L3
Terminal 8	black
Input voltage	0.4-4 V <sub>p</sub>

#### Supply Specifications

Power supply AC types	Overvoltage cat. III (IEC 60664) (IEC 60038)
Rated operational voltage	
Through term. 22 & 24	115
	115 VAC $\pm 15\%$ , 45 to 65 Hz
	230
	230 VAC $\pm 15\%$ , 45 to 65 Hz
	400
Voltage interruption	400 VAC $\pm 15\%$ , 45 to 65 Hz
Dielectric voltage	$\leq 40$ ms
Rated impulse withstand volt.	2 kVAC (rms) (supply/elect.)
	4 kV (1.2/50 $\mu$ s) (line/neutral)
	(line/line), no direct connection to electronics
Rated operational power	2.5 VA

#### Output Specifications

Output	SPDT relay
	250 VAC (rms)
	(cont./elect.)
Contact ratings (AgCdO)	$\mu$ (micro gap)
Resistive loads	10 A/250 VAC (2500 VA)
	1 A/250 VDC (250 W)
	or
Small inductive loads	10 A/25 VDC (250 W)
AC 15	2.5 A/230 VAC
DC 13	5 A/24 VDC

Mechanical life	$\geq 30 \times 10^6$ operations
Electrical life	AC 1 $\geq 2.5 \times 10^5$ operations (at max. load)
Operating frequency	$\leq 7200$ operations/h
Dielectric strength	
Dielectric voltage	$\geq 2$ kVAC (rms) (cont./elect.)
Rated impulse withstand volt.	4 kV (1.2/50 $\mu$ s) (cont./elect.)
	(IEC 60664)

## General Specifications

Reaction time	$\tau = 0.2$ s, worst case reaction time may be up to $5 \times \tau$
Indication for	
Power supply ON	LED, green
Output ON	LED, red
Environment	
Degree of protection	(IEC 60947-1) IP 20 B/front IP40 D (IEC 60529)
Pollution degree	3 (IEC 60664)
Operating temperature	-20° to +50°C (-4° to +122°F)
Storage temperature	-50° to +85°C (-58° to +185°F)
Weight	300 g
CE Marking	Yes

## Mode of Operation

The relay requiring 2-phased power supply is used with one of the 3-phased current metering transformers, types A 74-10 5, A 74-10 20, A 74-11 100, A 74-11 500. When the supply voltage is applied the relay operates, provided the current flowing in all 3-phase cables exceeds the minimum current of the transformers and phase cables must be drawn through the transformer from the same side.

When the power supply is applied the relay operates when all 3-phase currents are within the set levels, and releases when one or more phase-phase currents exceed the upper set level or drop below the set level. The relay operates again when all 3-phase currents are within the set levels. Hysteresis on operate is approx. 2%. The phase sequence through the current metering transformer is arbitrary.

## Range Setting

### Measuring range

3-phased current metering transformers measure in the following 4 ranges:

A 74-10 5 = 0.5 - 5 A  
A 74-10 20 = 2 - 20 A  
A 74-11 100 = 10 - 100 A  
A 74-11 500 = 50 - 500 A

### Range setting

Left potentiometer:

Lower limit. From 8 to 98% of nominal max. value for the current metering transformer employed.

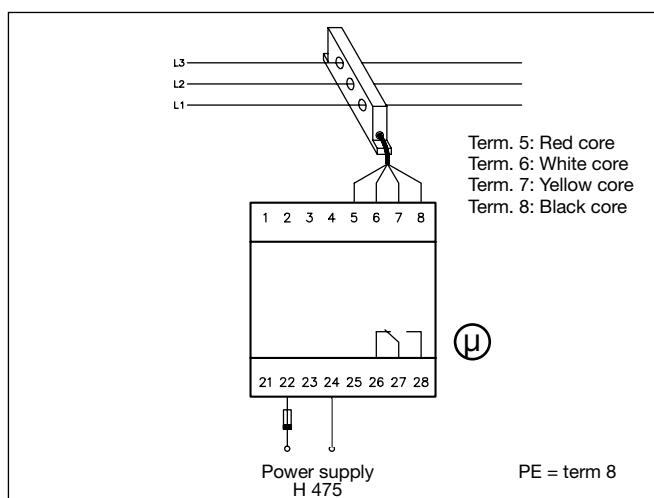
### Right potentiometer:

Upper limit. From 10 to 100% of nominal max. value for the current transformer employed. If the lower limit is set above the upper limit, the output relay releases and cannot be activated before the lower limit is set lower than the upper limit.

### Hysteresis

Max. limit: - 2%  
Min. limit: + 2%

## Wiring Diagram



## Operation Diagram

Upper limit

Hysteresis

Lower limit

Hysteresis

Relay ON

L1, L2, L3