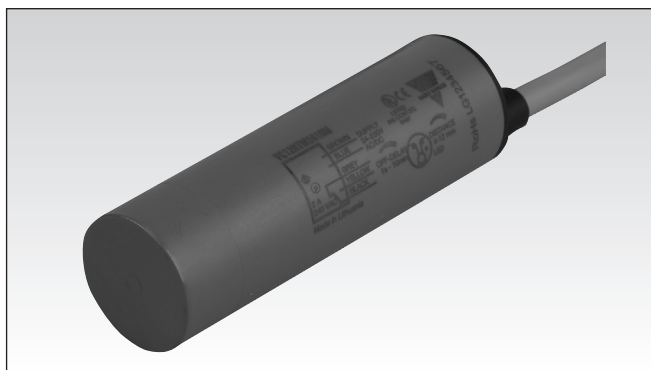


# Proximity Sensors Capacitive Thermoplastic Polyester Types VC11RTM24, VC12RTM24, VC12RNM24

CARLO GAVAZZI



- Level sensor for solid, fluid or granulated substances
- Adjustable sensing distance: 4-12 mm
- Multi voltage supply: 20.4 to 255 VAC/DC
- SPDT relay output
- Time delay on operate or release
- Time delay options up to 10 minutes
- VC11/12RTM24: With adjustable time delay
- VC12RNM24: Without time delay
- Cable versions

## Product Description

Capacitive sensor in thermoplastic polyester for mounting in AMB-M40 mounting bracket. Available with adjustable sensing distance and with/without built-in time

delay (ON or OFF delay). The relay output ensures that the load can be driven directly. Excellent for use in the agricultural area (detection of grains, fluids etc.).

## Ordering Key

**VC11RTM2410M**

Type \_\_\_\_\_  
 Time delay options \_\_\_\_\_  
 Voltage \_\_\_\_\_  
 Time delay \_\_\_\_\_

## Type Selection

Supply voltage	Ordering no. With ON delay	Ordering no. With OFF delay	Ordering no. Without time delay
24- 230 V AC/DC	VC11RTM2410M	VC12RTM2410M	VC12RNM24

## Specifications

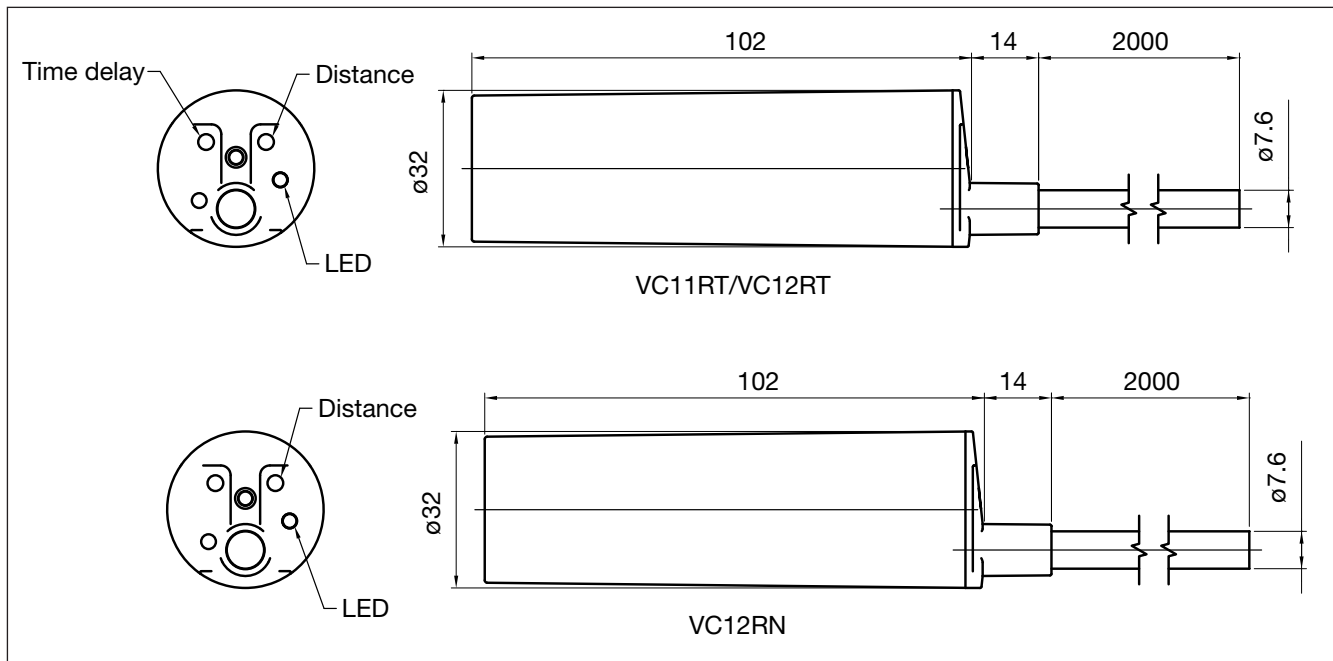
<b>Rated operating distance (S<sub>n</sub>)</b>	Up to 12 mm, reference target 30 x 30 mm ST37.1 mm thick, grounded	<b>Operating frequency (f)</b>	≤ 1 Hz
<b>Sensing distance</b>	4-12 mm, adjustable Factory set at 7 mm	<b>Response time</b> OFF-ON (t <sub>ON</sub> ) ON-OFF (t <sub>OFF</sub> )	≤ 500 ms ≤ 500 ms
<b>Sensing distance adjustment</b>	Multiturn, 15 turns adjustment steps	<b>Power ON delay (t<sub>v</sub>)</b>	≤ 200 ms
<b>Temperature drift</b>	0.8 x S <sub>r</sub> ≤ S <sub>u</sub> ≤ 1.2 x S <sub>r</sub>	<b>Output function</b>	SPDT relay
<b>Hysteresis (H)</b>	3 to 20%	<b>Output switching function</b>	N.O. and N.C.
<b>Rated operational volt. (U<sub>B</sub>)</b> (ripple included)	20.4 to 255 VAC/DC	<b>Indication</b> Output ON Time Delay	Red LED LED flashing depends on time delay
<b>Rated supply frequency</b>	47 to 63 Hz	<b>Output Time delay</b> Delay on operate, adjustment VC11TRM2410M Delay on release, adjustment VC12RTM2410M No time delay VC12RNM24	Factory settings 0 sec. 1 sec. - 10 min. 1 sec. - 10 min. no delay
<b>Rated operational power</b>	0.5 to 2.5 VA	<b>Time delay adjustment</b>	Multiturn, 15 turns
<b>Output</b> AC12                    2 A AC140                  2 A DC12                    2 A DC13                    2 A Mechanical life typically Electrical lifetime	2 A Relay SPDT@240 VAC  15x10 <sup>6</sup> operations 1x10 <sup>5</sup> operations @ 2A/240VAC	<b>Environment</b> Installation category Pollution degree Degree of protection	III (IEC 60664/60664A; 60947-1) 3 (IEC 60664/60664A; 60947-1) IP68 @ 1 m and 4 h (IEC 60529; 60947-1) NEMA (1, 2, 5)
<b>Minimum operational current (I<sub>m</sub>)</b>	10 mA@12 VDC (i.e. Minimum relay current)		
<b>Protection</b>	Reverse polarity and transients		



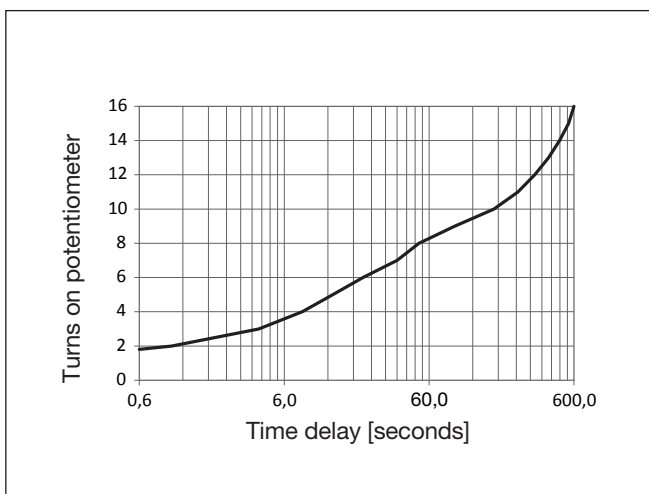
## Specifications (cont.)

<b>Ambient temperature</b> Operating temperature	-20° to +70°C (-4° to +158°F)	<b>Housing material</b> Body Backpart Trimmer	PBT, Polyester Aritel LCP Vectra
Storage temperature	-40° to +85°C (-40° to +185°F)	<b>Connection</b> Cable	PVC, gray, 2 m 5 x 0.75 mm <sup>2</sup> , Ø = 7.6 mm
<b>Vibration</b>	10 to 150 Hz, 1.0 mm/15 G (IEC 60068-2-6)	<b>Weight</b>	≤ 320 g
<b>Shock</b>	30 g / 11ms, 3 pos, 3 neg per axis (IEC 60068-2-6, 60068-2-32)	<b>Approvals</b>	cULus (UL508+CSA)
<b>Rated insulation voltage</b>	≥ 250 VAC (rms)	<b>CE-marking</b>	Yes

## Dimensions



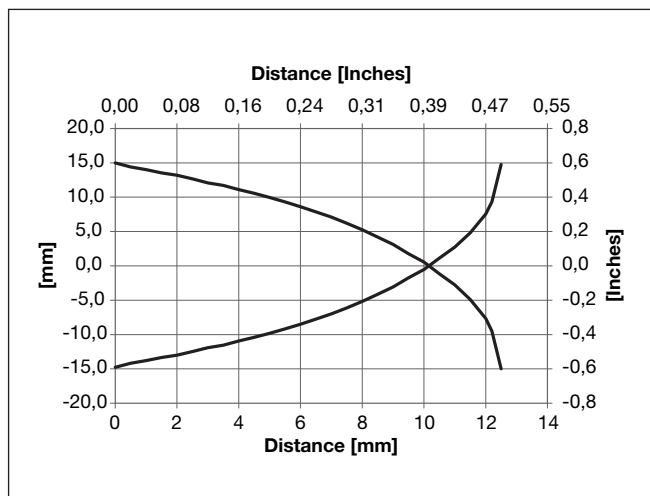
### Trimmer VS Delaytime



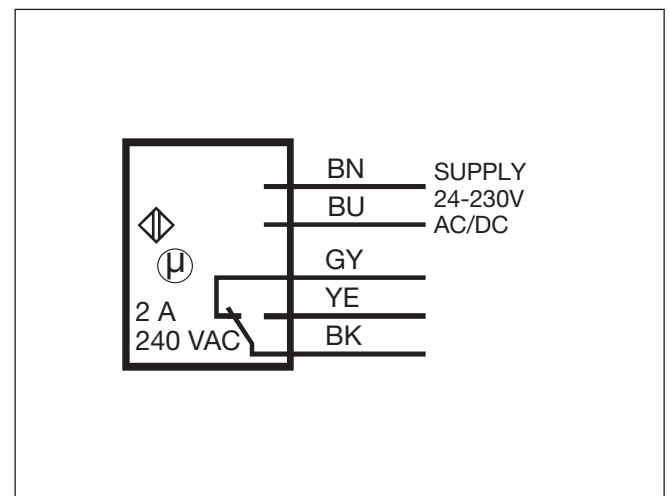
### Trimmer VS Distance



## Detection Diagram



## Wiring Diagram



## Mode of Operation

**VC11RTM24** (See operation diagram). Power supply is applied to the sensor (BN and BU wires). When the target is not present, the relay operates (connection between BK and YE wires) and LED lights. When the target is detected the time

measurement starts and LED flashes. After expiration of the set time (0-10 min.), the relay releases (connection between BK and GY wires) and LED turns off. The relay remains released as long as the target is detected.

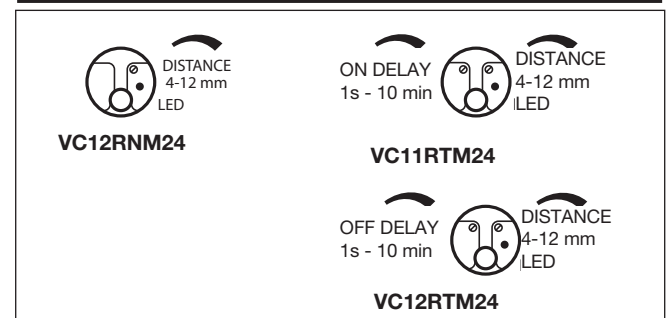
**VC12RTM24** (See operation diagram). Power supply is applied to the sensor (BN and BU wires) and time measurement starts. When the set time has expired (0-10 min.) the relay operates (connection between BK and YE wires) and remains

connected until the target is detected. After activation of the sensor the relay releases (connection between BK and GY wires). As soon as the target is not present again the time measurements of the set time starts.

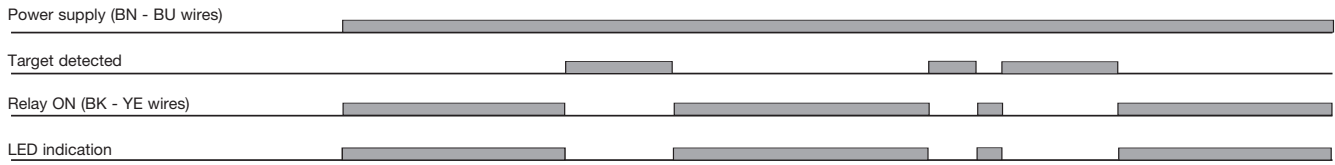
**VC12RNM24** (See operation diagram). Power supply is applied to the sensor (BN and BU wires). The relay operates (connection between BK and YE wires) and remains ON until the

target is detected. After activation of the sensor the relay releases (connection between BK and GY wires).

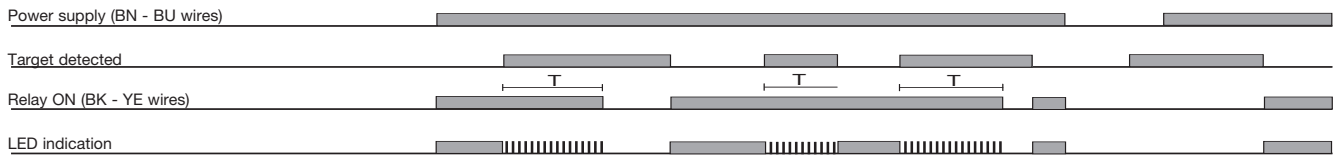
## Adjustment



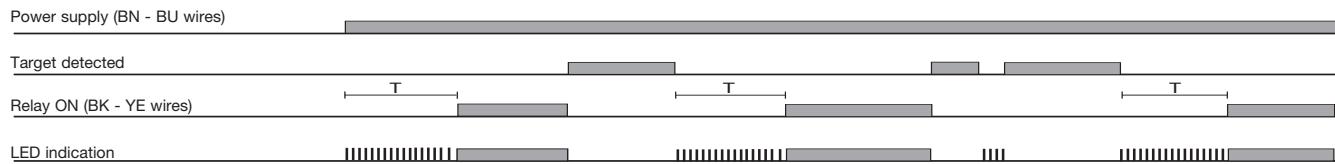
## Operation Diagrams



### VC12RNM24

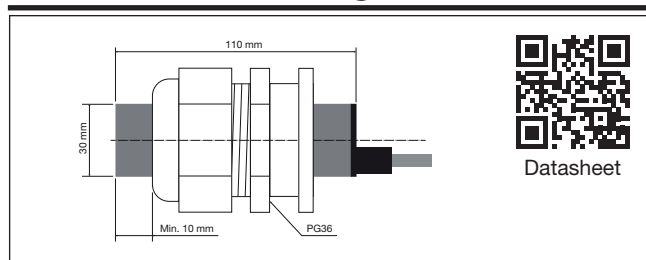


### VC11RTM24



### VC12RTM24

## AMB-M40 mounting



Datasheet

## Delivery Contents

- Capacitive switch: VC11/12
- Installation instruction
- Screwdriver
- **Packaging:** Plastic bag