

Datasheet and installation instruction

CD 550, CD 550-R

DESCRIPTION

The CD 550 Shock Detector mounts on various objects providing their reliable protection. The CD 550 detects and indicates any attempt to break into the object using tools applied with much power, or even explosives. This detector senses momentary high amplitude vibrations. It includes a programmable event counter which makes the detector trip an alarm once the pre-programmed number of events (1, 2, 3 or 4) have occurred. Still the detection of an explosion trips an alarm regardless of the number of the counted events.

The CD 550 mounts on elastic, multi-element structures (e.g. window / door frames and casings), on brick walls one might attempt to penetrate using a blunt instrument applied with much power.

For mounting on concrete or concrete-like surfaces use preferably the special MP 550 mounting plate. When installing outdoors or in cold rooms use the WH 550 housing protecting against severe weather conditions.

The CD 550 is based on an advanced signal processing algorithm microcontroller offering digital processing of the recorded events which translates into operation reliability and immunity to ambient interferences.

The desired sensitivity of the CD 550 is selected by DIP-switch. The effective adjustment can be verified with the CT 400 which simulates real attack vibrations. The impact power it uses remains always at the same level.

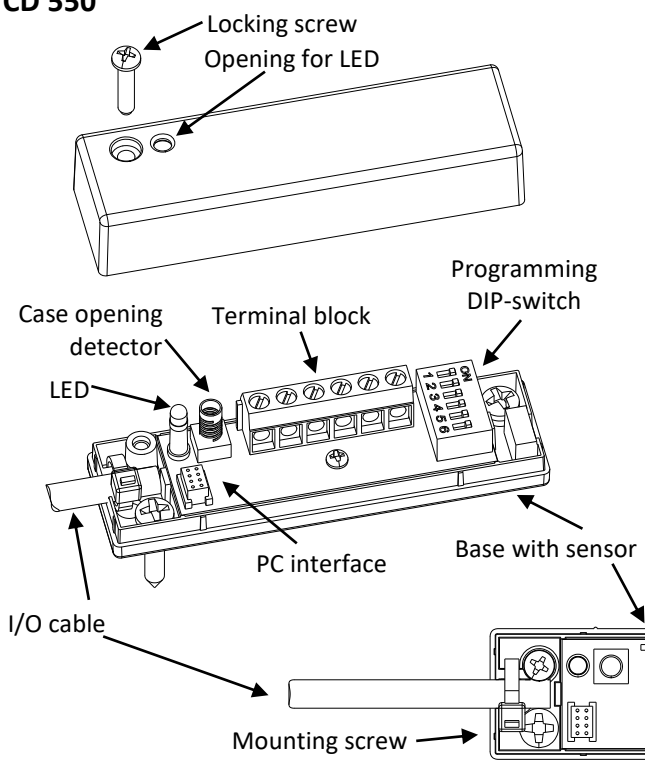
VERSIONS

Version	Description
CD 550	Shock detector
CD 550-R	Shock detector with integrated Magnetic Contact

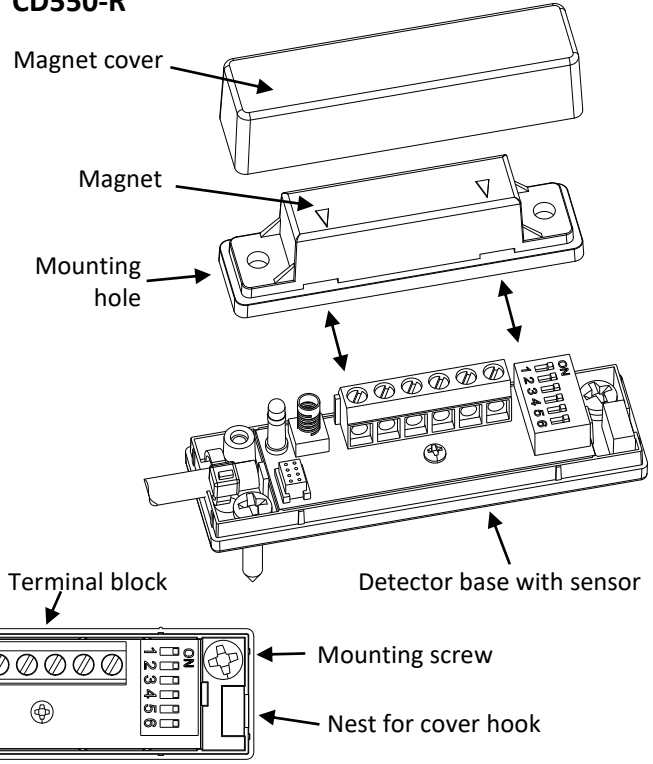
FEATURES

- Detection of vibrations from attacks on the protected surface
- Advanced DSP system based on a microcontroller
- Noise filtering system providing high immunity to environmental noise
- Three vibration detection channels working in parallel:
 - Detection of momentary high amplitude shock waves in Gross Attack channel (GAT)
 - Detection of mid-energy attacks in counting channel (CNT) with programmable number of pulses from 1 to 4
 - Detection of low energy – long duration attacks (drilling, cutting, etc.) in integrator channel (INT)
- Quick sensitivity adjustment using DIP-switch with 4 sensitivity levels
- Two operating modes:
 - 3 channels active - GAT, CNT and INT
 - 2 channels active – GAT & CNT (INT disabled)
- Alarm relay triggering mode programmable: latched or auto-reset
- Built-in LED as alarm indicator
- Anti-tamper protection
- Low-voltage indication
- Small dimensions simplifying mounting in tight places
- Built-in reed magnetic contact in CD550-R model
 - Break/make distance on wood 44/40 mm
 - Break/make distance on steel 22/20 mm

CD 550



CD550-R



APPLICATION

The unit can be mounted on any stable surface where an intrusion attempt might occur. However, the following must be taken in to account:

1. The design and construction of the protected surface and its material.
2. The detector location in relations to studs, joints, door/window hinges etc.
3. Background disturbances that can influence the detector.

COVERAGE

The typical coverage in various materials is shown in the table below. The ranges are only presented as guidelines, practical tests must always be conducted.

Material	Steel/Wood/Glass	Brick/Gips	Concrete (*)
Range	r = 3 m	r = 2 m	r = 3 m

* – with MP400 mounting set

MOUNTING

1. Loosen the cover screw and remove cover
2. Select a suitable mounting position
3. Use the bottom part as a template and mark the fixing holes
4. Use a 2-2.5 mm drill for the self-tapping screws provided

Note! The clean and even surface under the detector will give the best coverage.

CONNECTION OF DETECTOR

Detector has 6 position terminal block as shown in table.

Position	Marking	Signal
1	(-)	Common ground
2	(+)	Supply voltage, 10.5 – 30 Vdc
3	C	Alarm relay
4	NC	
5	T	Tamper switch
6	T	

PROGRAMMING DIP-SWITCH

6-position DIP-switch is used to program the following detector functions:

Sensitivity – one of four predefined ranges

Sensitivity	High	Standard	Low	Very Low
DIP-1	ON	ON	OFF	OFF
DIP-2	OFF	ON	OFF	ON

Counter – number of pulses to activate alarm (1 to 4)

CNT pulses	1	2	3	4
DIP-3	OFF	OFF	ON	ON
DIP-4	OFF	ON	OFF	ON

INT channel mode

INT mode	Enabled	Disabled
DIP-5	ON	OFF

Relay and LED mode

Relay mode	Auto-reset (3 s)	Latched
DIP-6	ON	OFF

On delivery all six DIP switches are set ON resulting in the following factory setting: standard sensitivity, reacts to four impacts (pulses), INT channel enabled, alarm automatically reset after 3 s.

ADJUSTMENT AND SETTING-UP

Adjustment and setting is quite simple. Check if detector mode is set to auto-reset (DIP-6 ON). The LED will then indicate activation and the alarm relay will reset after three seconds. If programmed for multiple pulses, each registered impact will be shown by a short flash, the alarm will result in a longer flash.

1. Set-up the highest sensitivity (DIP-1 = ON, DIP-2 = OFF).
2. Tap lightly close to the detector and check if each tap is indicated and the alarm relay is working properly after the set number of pulses.
3. Set-up the lowest sensitivity (DIP-1 = OFF, DIP-2 = ON).
4. Use the tool (CT 400) at the most distant point to be protected and increase the sensitivity until the LED indicates a receive pulse.

CONNECTION OF MAGNETIC CONTACT

Detector CD550-R is equipped with built-in magnetic contact connected in series with alarm switch to contacts 3 and 4 in terminal block. Reed contact is placed in the centre of longer side of base part under terminal block. Sensing area is marked with two arrows on bottom side of detector base. Arrows identify detector side where the corresponding magnet should be mounted.

CONNECTION TO PC

Detectors CD550 and CD550-R are equipped with PC interface terminal. Communication can be achieved with the help of additional interface unit USB-link providing also supply of detector from voltage available in USB port. Visualization of detector state, signal and event recording is possible with the help of CVDlink free software.

TECHNICAL DATA

Supply parameters

Supply voltage	10.5 – 30 V DC
Low voltage alarm	10 V
Max. ripple	2 Vpp (at 12V)
Current draw (standby)	5.5 mA @ 12 V, 6 mA @ 24 V
Current draw (alarm)	6 mA @ 12 V, 6.5 mA @ 24 V

Alarm signalization

Alarm output	relay, NC, res. < 30 Ω
Alarm response time	3 s in automatic reset mode
Relay contact rating	35 V / 100 mA

Tamper signalization

Tamper protection	micro-switch, NC
Switch contact rating	35 V / 50 mA

MC parameters (CD 550-R only)

Break distance (wood)	44 mm
Make distance (wood)	40 mm
Break distance (steel)	22 mm
Make distance (steel)	20 mm
Dimensions	20 x 23 x 80 mm [H x D x W]

Environmental conditions

Operating temperature	from -10°C to +70°C
Storing temperature	from -40°C to +70°C
Humidity	max. 95% RH
Housing protection cat.	IP 42

Approvals:

CE, RoHS, WEEE,
EN 50130-5 class II