

## SECURITY SYSTEMS | HRB-HS-CT CRASH TESTED HYDRAULIC BOLLARD

### HRB-HS-CT

### PATENT 2017/04667



### PAS 68 CRASH TEST



## GENERAL DESCRIPTION

Optima HRB-HS-CT series crash-tested retractable bollards are designed for high-security vehicle entrances, military, industrial, governmental and commercial buildings or streets which are closed to vehicle traffic between certain hours of the day. Even though the attack is from high tonnage vehicles with high speeds, it is not possible for the vehicle to keep on moving because of the damage given to the front, wheels and the bottom of the vehicle. HRB-HS-CT series designed to PAS68: 7500(N3)/80/90 standards. The actual crash test is conducted in TRL Institute, UK.

## HYDRAULIC POWER UNIT AND CONTROL ELECTRONICS

All the hydraulic components are tested at 250 bars although normal operating pressure is around 80-120 bars. The manual hand pump is standard in the HRB-HS-CT series. Therefore, in case of power failure, it is possible to raise and lower the bollards by a manual hand pump. Bollard raise/lower time is 3-5 sec. The accumulator integrated with the hydraulic power unit for emergency fast raise in 1.5 seconds and cycle of operations after power off (optional). Control electronics utilized in hydraulic road bollard is PLC controlled. Two keyboards with emergency stop are standard; one desktop, other being integrated into the hydraulic power unit. The motor is driven by a contactor and protected by a thermic breaker. The low current voltage required by the system is supplied by a switch-mode power supply. All the cables running in the system are color-coded and numbered to ease tracking.

## SECURITY SYSTEMS | HRB-HS-CT CRASH TESTED HYDRAULIC BOLLARD

### STEEL STRUCTURE

The raising section of the bollards is 350 mm in diameter for HRB-HS-CT series; raised height is 1100 mm made of a special type of steel, hot-dip galvanized and AISI 316 grade stainless steel sleeved with flashing light on top. In lowered position bollard withstand 50 tons of axle load.

### ENVIRONMENTAL CONDITIONS AND POWER REQUIREMENT

Between -15°C and +65°C, 95% non-condensing humidity; 380V, 3 phase, 50-60 Hz (or 220V/440V/etc, three phase, 50-60 Hz, optional by transformer).

### INCLUDED ACCESSORIES

- Red/green traffic lights with steel pole.
- Dual vehicle safety loop detector.
- Led Flashing light on top of bollard.

### OPTIONAL ACCESSORIES

- Safety photocell.
- Stand and casing for safety photocell.
- Protective construction(tubular) around drive unit.
- Hydraulic accumulator.
- Transformer to convert the power.
- Uninterrupted power supply (UPS).
- DC motor and pump with dry batteries.
- Submersible drainage pump.
- Wrong way alarm.
- High speed alarm.
- SCADA or any control system: It is possible to change and check the position of bollard with touch screen control panel, mobile devices (ios-android), computer, etc.

## MODELS

- ⇒ Raised height: 1100mm.
- ⇒ Diameter: 350mm.
- ⇒ Groups: From 1 bollard to 4 bollards per hydraulic power unit( 3-5 sec ),( 1,5 sec Emergency Raise ).
- ⇒ Groups: From 5 bollard to 6 bollards per hydraulic power unit( 5-7 sec ),( 2,5 sec Emergency Raise ).

## MAIN BODY MEASUREMENTS AND FOUNDATION

