Procurement Specification for an EB750 ATEX CAT3 Rising Arm Barrier

A. Requirement

This document is to be used to specify the physical and operational requirements of the EB750 ATEX Rising Arm Barrier.

The EB750 ATEX Barrier is a barrier designed to operate in the Oil & Gas, Petrochemical, Pharmaceuticals, and Chemical & Fertilizer industries.

The barrier is designed to operate with a full range of access control systems and can be configured to integrate into existing access control systems Within EU standards EN 60079-0 and EN 60079-1 this product is classed as:

Group 2.
Category 3.
Ex d (Flameproof Protection).
Equipment Category 2G.
Equipment Protection Level (EPL) of Gb.

This product is to be installed in maximum ATEX Zone 2 only.

B. Barrier Unit

B.1 Barrier Construction

The steel cabinet is shot blasted, primed and powder coated (RAL 1007 other options available). The barrier cabinet is categorized as an ATEX Flameproof EX d enclosure and houses the barrier control panel including the power supply isolator, fuses, thermal overload trips and motor contactors.

Barrier Arms shall be of rectangular extruded aluminium 76 x 38mm white powder coated with red fascal strips, Max length 5m.

B.2 Barrier Height

The height of the Barrier Arm when in the closed (lowered) position, as measured from the top of the Arm frame to the road surface, will be a minimum of 910mm.

B.3 Barrier Width

The width of the Barrier Arm will be between 3,000mm and 5,000mm to suit site conditions.

B.4 Finish

The Barrier Cabinet and Boom Arm are to be finished with an anti-corrosion paint system

C. Technical Details

C.1 Operation

The heavy duty motor plate supports the 100% duty cycle permanent 4 pole T.E.F.C. motor, which provides the power for the toothed belt driven industrial grade gearbox. This in turns drives the sinusoidal output mechanism. Two heavy duty bearings support the drive shaft; this having two machined cams to activate the adjustable limit switches to control the boom travel.

C.2 Motor

The heavy duty motor used will be a single ph, 230v unit with a power rating sufficiently sized to allow for continuous operation (100% duty cycling).

The motor should be protected by a thermal overload cut out device.

C.3 Power fail conditions

A winding handle will be provided to enable the manual raising and lowering of the Barrier Arm in the event of electrical power failure.

C.4 Casing

The barrier is able to operate in hazardous environments or potentially explosive atmospheres: the working components are housed in a flameproof enclosure designed to withstand the pressure developed during an internal explosion and prevent the transmission of the explosion to the explosive gas atmosphere surrounding the enclosure.

Cable and conduit gland entry plate is located at the base of the Ex d enclosure. Only suitably rated ATEX Flameproof Ex d, Group II, Cat 3 glands can be used on suitable cables fitted to the EB750 ATEX barrier.

The Barrier Cabinet will have fully lockable doors to the front of the cabinet for ease of access and the joints between cabinet and doors are classed as flanged joints and are surface treated with an anti-corrosive acid. The doors are fixed to the cabinet by M8 stainless threaded bolts.

D. Control System

D.1 Voltage

The main system input voltage is to be 230v 1phase 50-60Hz supply with the control system operating at 24V SELV provided from an internally mounted power supply.

D.2 Casing

The barrier cabinet is categorized as an ATEX Flameproof EX d enclosure and houses the barrier control panel including the power supply isolator, fuses, thermal overload trips and motor contactors and should give easy access to all electrical components for connection, maintenance and programming.

E. Access Control

E.1 System Interfacing

The control system will be capable of accepting inputs from every major type of access control including but not limited to – Push buttons to raise, lower and emergency stop, swipe card readers, proximity card readers, inductive loop systems, RF transmitter equipment and biometric readers. Please note that any access control products linked to the equipment may not necessarily be to the same ATEX standard.

F. Performance

F.1 Manufacturers Experience

The manufacturer of the Rising Arm Barrier will have a minimum of 20 years experience in the manufacture, installation and maintenance of this type of equipment and must be a member of a recognised Professional Trade Association.

F.2 Speed of operation

Standard operation speed will be 4.2 seconds for either raising or lowering.

In normal operation the Rising Arm Barrier shall be capable of 100% duty cycling and must have been satisfactorily factory tested in a single continuous run of 1,200 cycles.

Technical summary

1. ATEX Flameproof Ex d, Group II, Cat 3
2. Electro-Mechanical drive unit
3. 100% duty cycling
4. Fast acting 4.2 sec
5. Modular design
6. Multi-process coating specification
7. Winding handle for manual operation
8. Power requirement 230V single phase 50Hz 6A
9. Operating temperature range available: -25°C - +70°C
10. Cabinet- 360mm W x 468mm D x 1160mm H
11. Barrier Arm Length Max 5m

G. QA

G.1 Equipment Testing

The manufacturer will have fully tested the Rising Arm Barrier and Control System prior to despatch. These tests will be fully traceable to each unit despatched and must be transparent.

The QA testing will include dimensional checks, workmanship quality and finish as well as full operational testing. Once fully tested, the Rising Arm Barrier will be fitted with a nameplate bearing the manufacturers details, serial number and test date.

The manufacturer’s quality system must be certified to ISO 9001.

G.2 Despatch

The Rising Arm Barrier will be packed will be suitably packed ready for despatch.

Two full sets of operation and maintenance manuals will be provided with the equipment to include site specific program, installation risk assessment, method statement, and wiring and installation drawings (additional manuals should be available at a nominal cost).

H. Disclaimer

This type of equipment is designed for high security use and while it is possible to integrate a number of safety features into the system design, it is strongly

recommended that a safety / security risk assessment is carried out prior to specifying the product and any necessary safety systems.

Avon Barrier Corporation Ltd can provide information on safety systems to suit most sites / applications on request.

I. Procurement Source

The EB750 ATEX Rising Arm Barrier can be purchased from the following sources:

Avon Barrier Corporation Ltd
149 South Liberty Lane
Bristol
BS3 2TL UK
Tel +44 117 9535252
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