1. GENERAL DESCRIPTION

This specification defines supply of arm barrier, control circle, features and options intended for use at car park entrance and exit for controlled access.

2. SYSTEM CONFIGURATION

2.1. Armed Barrier

2.1.1. Depending on the road width, the arm barrier should be selectable in the range of 2mt and 6mt.

2.1.2. External cabinet of the arm barrier should be made of fully aluminium against decaying and rust.

2.1.3. Baier cabinet dimensions should be as follows: Width: 306 mm, length: 306 mm, height: 1054 mm. Steel plaster press easel that will be fastened onto ground should be electro galvanizing coated and painted with static dye with dimensions as follows: Width: 370mm, length: 370mm.

2.1.4. External cabinet of the arm barrier should be dyed with electrostatic dye RAL1028, which is the colour of traffic.

2.1.5. The casing where the arm barrier tubing is seated, and unilateral ETAL 140 aluminium connection system should exist.

2.1.6. In case a vehicle hits the barrier arm, a breaking point should be present at a certain place of the arm to minimise potential damages.

2.1.7. Arm barrier cabinet should be made of pieces, and it should enable the damaged parts only - rather than the whole body.

2.1.8. To protect the barrier cabinet from wet weather conditions, it should have a top cover made of plastic with injection print.

2.1.9. Feeding voltage of the arm barrier should be 230V 50-60Hz.

2.1.10. Motor of the arm barrier should be 24V DC eligible for uninterrupted operation.

2.1.11. Individual manual key should be available for sliding the barrier arm and close manually outside the electrical cabinet in case of power cut.

2.1.12. Barrier arm should be made of round aluminium, and the wind effect should be minimised.

2.1.13. Arm diameter should be no less than 67 mm, and an inflatable fuse should be fastened under the arm.

2.1.14. Limiting switch of the arm barrier should be electromechanical.

2.1.15. There should be a LED system well-hidden under the barrier arm for improved visibility for drivers. The barrier will flash red when the arm is off, it will blink red hen it is moving upwards, and it will flash green when the arm is fully up.

2.1.16. The arm should be white in colour with red reflector for warning purposes.

2.1.17. A plastic lid should be attached at the tip of the arm to prevent foreign substances.

2.1.18. There should be a supporting fork at the point where the barrier arm lowers. The support fork where the barrier arm is seated should be made of steel in full, and it should be in “Y” form. There should be a round protective metal piece on the support fork in order to assemble reflector of the cable-free safety photoelectric mechanism.

2.1.19. There should be a cable-free safety photoelectric mechanism hidden inside the barrier cabinet. Cabled safety photoelectric mechanism should deny closing the barrier, instead should open it if it detects an object, vehicle or living thing under the arm when it is lowering.

2.1.20. Engine power of the barrier should be no less than 60W.

2.1.21. Maximum power of the barrier motor should be 120 W.

2.1.22. The arm and the barrier should be well-balanced to avoid overweight on the motor.

2.2. CONTROL AND LOGIC CIRCUIT

2.2.1. Control circuit should be equipped with a structure together with any other necessary equipment needed for the motor unit and all necessary accessories; and it should ensure smooth operation of the system.

2.2.2. Control card should have a high-performance RISC processor, which should be supported by NanoWatt XLP, and capable of controlling extremely low power.

2.2.3. Control circuit should operate at 220-240V 50-60Hz There should be an internal supply outlet of 12-24V Dc for accessories and equipment.

2.2.4. Average voltage for the arm barrier should not exceed 2 ampers.

2.2.5. Control circuit should not exceed 5W power consumption under normal operating conditions.

2.2.6. Control circuit should be in a panel inside the hydraulic unit cabin where all connections and settings are enabled.

2.2.7. Control card will be a PCB print. Control card should be equipped with MOSFET and adjustable current protection circuit for the engine, as well as a 12VDC outlet, accumulator charging unit outlet, LED outlet for the traffic signalization light.

2.2.8. An integrated canal receiver should be available on the control card.

2.2.9. An optocoupler should be used for inlet and outlet on the electronic card against external disturbance.

2.2.10. Automatic closing term setting should be enabled on the control circuit.

2.2.11. Control circuit should have deep switches to select different operation modes. Deep switch modes should have automatic off enabled/disabled mode, turn on-stop-turn off mode / turn on-turn-turn off-control mode, LED operating mode, single turn on mode, synchronous operation mode, Stop cancel, photoelectical mode cancel, LED flash or traffic light mode.

2.2.12. Control circuit arm barrier should slow down to stop while rising, stop and recede if it detects an obstacle when shutting. Even when it is seated on the arm, it should check with the door without pressure on pressing the remote; it should stop and apply no pressure to the reducer.

2.2.13. Control circuit should allow connection of all access control elements for door opening such as remote control, button, card reader, loop detector, key-driven button, cell phone module, license plate recognition system.

2.3. ACCESSORY EQUIPMENT (One or all selectable)

2.3.1. 2 remote controls with 4 channels of 433,9 Mhz should be provided together with the system.

2.3.2. System should be equipped with an under-arm LED system, which flashes red when the road is blocked, and green when the road is clear.

2.3.3. A cable-free safety photoelectric system should be present for safe operation of the system.

2.3.4. The bar arm should be equipped with red reflectors for increased visibility.

2.3.5. Individual manual key should be available for sliding the barrier and close manually in case of power cut.

2.3.6. The system should be equipped with a uniform traffic signalisation light of 200V to warn vehicles and regulate vehicle traffic. High quality LEDs should be used for the traffic lights. Traffic light will be red when the road is blocked, otherwise it will be green when the road is clear. (Optional)

2.3.7. A LOOP detector system should be available for safe operation of the system. (Optional)

2.3.8. The system should be equipped with 2 accumulators to ensure the barrier continues uninterrupted operation in case of power cut. (Optional)

2.3.9. Barrier cabinet should enable painting in any desired RAL colour as may be chosen by the institution in question. (Optional)

2.3.10. Barrier should have a Windows-based software pack to check with the on-off, location info in a computerized medium. (Optional)

3. PERFORMANCE

3.1. Opening Speed

3.1.1. Arm barrier should open and close in 4-6 seconds.

3.2. Operation Sustainability and Life

3.2.1. Arm barrier should have minimum 2 (two) years of warranty by the manufacturer, and spare parts availability for a period of 10 (ten) year.

3.2.2. Operating sustainability of the arm barrier should be 100%.

3.2.3. Arm barrier should be eligible for uninterrupted operation during the day. (100% cycle)

3.2.4. Arm barrier cabinet should have IP54 protection class.

3.2.5. Arm barrier should enable stable operation from -20 to +70 degrees.

4. MANUFACTURER EXPERIENCE

4.1.1. Arm barrier manufacturer should have minimum 14 years of experience. Experience in manufacturing should be proven with official registration documents of the company.

4.1.2. Manufacturer should be employing at least 1 mechanical engineer, 1 electronic engineer, 1 mechatronics engineer. Manufacturer should prove this on a documentary basis.

4.1.3. Arm barrier product should have a CE, TS EN 60204-1 certificate for Electrical and Safety Test Report.

4.1.4. Manufacturer should have TUV CERT ISO 9001-2015, TUV CERT ISO 14001 and TUV CERT OHSAS 18001 quality management certificates and Service Area Compliance Certificate.

4.1.5. Manufacturer should have a Made in Turkey certificate or Domestic Production certificate for arm barrier.

4.1.6. Manufacturer should have TS 21 HYB, TS 12540 HYB, TS 12870 HYB and TS 13406 HYB certificates so as to be eligible for providing service to safety products.

5. QUALITY CONTROL TERMS

5.1.1. Barrier and equipment should be carefully packed.

5.1.2. FA tests will be performed after arm barrier is manufactured and before it is dispatched to the site; a certified FAT certificate will be delivered upon delivery of the product.

5.1.3. Assembling manual, user's manual and maintenance manual should be delivered at the time of final control along with the product.

5.1.4. Once the arm barrier system is complete, it will be fully tested before installing.

5.1.5. Arm barrier and its sub systems should be masterfully and carefully made.

5.1.6. Master dimensions should be compared with drawings and order dimensions.

5.1.7. Arm barrier should have assembling and user manuals in European standards.