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1.0 SCOPE

- 1.1 This specification covers the design, manufacture, assembly, testing and inspection at vendor's/sub-vendor's works, packing and despatch to site of Local Pushbutton Station as described in the various sections of this specification.

2.0 CODES AND STANDARDS

- 2.1 Unless specified otherwise, the latest revision of the relevant standards and other applicable statutory rules and regulations are applicable and shall be referred to.

3.0 DESIGN REQUIREMENTS

- 3.1 Local Push Button Stations are used to control the motors locally. Starters for the motors will be located in motor control centres remotely situated.

4.0 CONSTRUCTIONAL FEATURES

4.1 LOCAL PUSHBUTTON STATION (LPBS)

The local pushbutton station shall be suitable for the low voltage distribution system specified. The ratings shall be designed for continuous operation under design ambient temperature of 45°C.

4.1.1 Enclosure

- 4.1.1.1 The local push button stations shall be metal enclosed, suitable for outdoor / indoor mounting on wall or steel structures. The enclosure shall be die-cast aluminium or cold-rolled sheet steel of at least 1.6 mm thickness.

- 4.1.1.2 The local push button stations shall be dust and vermin proof and shall have a degree of protection of IP -55 as per IS/IEC 60947. The front cover of Push Button Station enclosure shall be bolted on one side and hinged on the other side.

- 4.1.1.3 Local push button contact shall be suitable for 10A at 110/240V AC as well as 8A for 110/220V DC control supply.

- 4.1.1.4 Local pushbutton station shall be provided with two earth studs with lugs on the external surface of the enclosure suitable for termination of 8SWG/16SWG GI wire.

- 4.1.1.5 The push button stations shall be suitable for bottom cable entry and shall be provided with removable undrilled gland plates or knockouts. Adequate space shall be available inside the push button station enclosure for terminating external cables directly on pushbutton terminals.

4.1.2 Mounting

The Local pushbutton station shall be suitable for wall/column mounting. Fixing bolts/lugs shall be supplied along with the stations.

4.1.3 Wiring & Terminations



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All wiring inside shall be carried out with 1100 V grade PVC insulated multi stranded copper wire having a cross section not less than 1.5 sq.mm for control & 2.5 sq. mm for power. Terminals for External connections shall be stud or insertion type suitable for accepting at least 2 number 2.5 sq. mm copper wires. Terminations on all components inside shall be done using crimped lugs. Each wire end shall be identified by a system of ferruling.

4.1.4 Cabling

External cables entering from bottom shall be terminated by BHEL on the pushbutton station. These shall be fitted with bottom removable gland plate suitable for PVC insulated cables of the type – 4Cx2.5 mm² (OD approx. 16mm). Double compression Nickel plated brass cable glands shall be suitable for conduit entry of cable. The required cable glands and lugs (tinned copper type) for control cables shall be supplied by the vendor and mounted on gland plate.

4.1.5 Components

4.1.5.1 Push button

The push button station shall comprise of a latched type EMERGENCY STOP push button with two (2) NO and two (2) NC contacts. Push button for initiation shall be shrouded to prevent inadvertent operation. Actuator for stop push button shall be mushroom type press to stop and turn to release with keyless mechanism feature. Pushbutton shall be inside a flap type cover arrangement to prevent inadvertent operation. Type & colour for each pushbutton function is given below: -

a) Non Flameproof LPBS TYPE-A (Stop-Red)

5.0 INSPECTION & TESTS

5.1 Identification of enclosure material.

5.2 Routine & type test certificates of components and finished units.

5.2 Power frequency high voltage withstand test shall be carried out at 2.5kV for one minute.

5.3 Valid type test certificates shall be furnished for purchaser's approval.

5.4 Inspection for visual and finishing


- Verification of specifications
- Completeness of scope
- Markings & Labels
- Functional check

5.5 Inspection shall be carried out as per approved Quality Plan.

6.0 PAINTING

6.1 All bidders must have 7-tank or 8-tank painting procedure.

6.2 All metal parts, surfaces shall be degreased by dipping in hot alkaline solution and rubbed with wire brush to remove oil and scale and then rinsed in water. Alternatively, they may be shot blasted.

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<p>6.3 Parts shall be pickled by dipping in hydrochloric acid to remove the rust from the surfaces formed during storage of sheets and then rinsed to remove traces of the acid. The cleaning and pre-treatment of all metal parts shall be as per applicable standard.</p> <p>6.4 The surfaces to be painted shall then be prepared by phosphatizing to protect them from further rusting and to create a good bond with the paint.</p> <p>6.5 All parts shall then be subjected to a coat of primer paint. All inside surfaces of enclosure shall be spray painted with black matt finish and outside surfaces of enclosure shall be spray painted with power coating.</p> <p>6.6 Paint thickness shall be minimum 50 microns. LPBS shall be painted to shade no. RAL: 9002.</p> <p>6.7 Finished parts shall be coated with peelable compound by spraying method to protect the finished product from scratches, grease, dirty and oily spots during handling and transportation.</p> <p>7.0 PACKING</p> <p>The LPBS shall be properly packed to avoid wear and tear during transport along with 2 copies of Bill of quantity and catalogue.</p> <p>8.0 DRAWINGS/DOCUMENTS TO BE SUBMITTED AFTER CONTRACT</p> <p>8.1 GA and Schematics Drg. for LPBS</p> <p>8.2 Routine & type tests reports.</p>			



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BILL OF MATERIAL:

1 set of LPBS (Local Push Button station) is defined as;

Description	Quantity	Unit
Local Push Button station (2 NO + 2 NC)	100	No.