

TENDER DOCUMENT FOR HVAC BUILDING MANAGEMENT SYSTEM

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k) Actuator for dampers:

Sr. No	Description	Specification
1	Type	On / Off / Modulating with spring return @ 90° angle of rotation
2	Nominal torque	Based on damper area & damper manufacturer's data
3	Position Indicator	Percentage opening to be indicated.
4	Shut off time	Motor- ≥ 75 seconds Spring Return- 25 seconds
5	Manual override	Actuator shall have capability to be turned to any position manually and be locked
6	Actuator Motor	Non wearing brushless DC motor
7	Input voltage	24 V AC
8	Enclosure protection class	IP20 unless otherwise stated.
9	Actuator mounting & orientation	Actuator shall be suitable for mounting damper shafts of square / round shapes & on either side of damper depending on the required rotation
10	Approved Makes	Siemens/ Belimo/ Sauter/ TAC-Schneider

1.2.25 DISPLAYS FOR ROOM

LED DISPLAY:

These LED displays shall be used for indication the status of Temperature / RH/ Pressure limit with reference to the set points. The indication for parameters can be status indication with different colour (Red / Green) LED Lamp, as specified in tender. Display unit with accessories shall be mounted inside MS powder coated box grouted in wall/ panel and with SS304 cover plate flushed to the wall.

Approved Make: POLMON / POLYGON / UNITECH / GLOBAL / AERONSENSE

LCD DISPLAY:

These LCD (NON BACKLITE) displays shall be used for actual values of Temperature / RH/ Pressure parameters. Display unit with accessories shall be mounted inside MS powder coated box grouted in wall/ panel and with SS304 cover plate flushed to the wall. The same can be in Intrinsically Safe (IS) construction , if specified in BOQ.



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Alpha-numeric display shall be Room mounted LCD type indicators for Temperature having 3½ Digit, Rh.- 2 Digit, Pressure-2Digit of 1" height. Alpha-numeric display shall have provision of **Flashing** in case the parameter goes out of the set point.

Synchronized Time display unit of 4 digit of 1" height for indicating time with synchronized master clock with Modbus output mounted inside MS box with SS 304 cover.

Approved Make: POLMON / POLYGON / UNITECH / GLOBAL / ACE / AERONSENSE

MAGNEHELIC GAUGE DISPLAY:

Magnehelic gauges provided should be Dwyer make and shall have accuracy within 2% of full scale. The design of the gauges should be such that it resists shock, vibration and over pressures. Housing of the magnehelic gauges shall be die cast aluminium. Range of the magnehelic gauges will be 0 – 60 Pa for areas with positive pressure and for areas with negative pressure the range will be 30 – 0 – 30 Pa.

The Magnehelic gauge should be mounted in a 18G CRCA powder coated enclosure having SS 304 cover plate in front with necessary tubing & S.S sensors.

Make – POLMON / POLYGON / UNITECH / GLOBAL / ACE / AERONSENSE

1.2.27 CABLING:

A) Cable:

PVC Sheathed ATC (Annealed Tinned Copper) shielded armoured cables shall be used for signal and communication. For power cabling PVC insulated aluminium conductor armoured cables shall be used.

Approved Make: Rolliflex / Thermo / Lapp / Lioni

B) Cable Gland:

Heavy duty compression type cable glands along with the cable lugs shall be used for termination of cables in panel. The cable glands shall be of cadmium plated brass. For all power cables, crimped type copper cable lugs shall be provided. For Flameproof areas, Flameproof double compression glands shall be used.

Approved Make: Comet / Safe Power Industries / Flame proof Equipments Pvt Ltd.

C) Cable tray:

The cable trays shall be perforated type for tray size less than 300 mm and shall be ladder type if it exceeds 300mm, made out of GI sheets (slotted) having a minimum thickness of 2 mm duly painted. (Cable trays exposed to atmosphere shall be hot dip galvanized). The Clamps used shall be Aluminium with GI/Cadmium plated nut-bolts. The size of these trays shall be selected