



Bharat Heavy Electricals Ltd
Boiler Auxiliaries Plant
Ranipet-632 406

EDC/GATES & DAMPERS
TECHNICAL SPECIFICATION

SPECIFICATION NO: GDRS:029

REV NO:01

PAGE NO 01 OF 03

01	Item	SMART POSITIONER
02	Scope of supply	Supply of Smart Positioner for Pneumatic regulating Cylinder
03	SITE CONDITIONS: - Altitude above Sea Level	500 meters
	Atmosphere	Tropical, Dusty, Windy & Heavily polluted atmosphere
	Relative humidity Operating Temperature	100% -30 to 80 deg C
04	Make of the SMART positioner	Vendor to specify
05	Type of Input	4-20 mA, 24 V DC, 2 wire system (Loop powered from DCS)
06	Operational signal range	3.6 Ma – 21 mA (4-20 mA). Split range operation shall also be possible.
07	Voltage	12 to 36 V DC
08	Input impedance	Vendor to specify
09	Supply Air pressure	3 – 7 kg/cm ²
10	Air Capacity	Vendor to match with the requirement of the actuator.
11	Sensitivity, Characteristic Deviation	Sensitivity: <= 0.1% of span, Characteristic Deviation : <= 0.5% of span
12	Type of Acting (Direct/Reverse)	Vendor to match with the requirement of the actuator.
13	Flow characterization	SMART positioner shall be compatible to fit valve characteristic curves, Linear/Equal percentage etc.

01	08.11.18	Sl.no.18 altered.	Sd/-	Sd/-
00	26.10.18	Fresh Release	Sd/-	Sd/-
			M. SURESH	ASHWIN DHINAKAR
REV	DATE	DESCRIPTION	PREPARED	APPROVED

Sl. No.	Particulars	Description
14	Stroke time	Vendor to match with the requirement of the actuator.
15	No. of Pneumatic outputs (Single/Double)	Vendor to match with the requirement of the actuator.
16	Pneumatic Process connection	½" NPT (F)
17	Communication by Hart Protocol	SMART positioner shall be compatible for Remote calibration & Diagnostics using Hart Management System. (Super-imposed Hart signal on input 4-20 mA signal)
18	Calibration	SMART positioner shall be compatible for Auto Start with self-calibration, Remote calibration from Hart Management System & manual calibration using push buttons available on the positioner.
19	Position/sensing feed back	Non contact type position sensing with 4-20 mA position feedback output signal.
20	Electrical Cable entry	Side or Bottom entry to avoid water ingress.
21	Protection Class	IP 65
22	Action required during 4 to 20 mA control signal failure.	SMART positioner shall be compatible for achieving Fail Open, Fail Close & Stay Put (Fail Freeze) functions to be configured at site.
23	Accessories	For Supply & output pressure, gauges shall be provided on the positioner.

Sl. No.	Particulars	Description
24	EMC Compliance	SMART positioner shall conform to EMC Compliance as per international standards IEC/EN.61000-4-2/3/6/12.
25	Influence of Temperature rise on SMART positioner	$\leq 0.01\%$ per deg C
26	Diagnostic Features	1.Soft Open/Close limit switch output, 2.Fault, 3.Manual/Auto operation indication, 4.Alarm on Power air failure, 5.Travel/Stroke counter, 6.Diagnosis of leakage in actuator, 7.On line partial closure test (as per requirement of valve) 8.Valve signature analysis, 9.Valve friction/Jamming detection, 10.Step Response Test
27	In built Operator Panel	The positioner shall have a display with push buttons for configuration and for read out. The same shall be Password protected/Hardware lock.
28	Valve Mounting Assembly	Required mounting accessories & fasteners for mounting the positioner on valve actuators shall be taken care of by Valve vendor.
29	Test reports & Catalogues	1.Test certificates as per Manufacturer's standard. 2.Valve Signature test reports, SMART positioner catalogues & O&M manuals. 3.The above documents 1 & 2 shall be submitted to BHEL (Soft Copies) for reference and also a copy of the same shall be sent to site along with the consignment.