ELECTRO-PNEUMATIC POSITIONERS
PI991

DESCRIPTION

The ADCATrol PI991 is a digital intelligent electronically configurable positioner with communication capabilities, designed for mounting to pneumatic linear or rotary actuators. Communication protocols include analog (4 to 20 mA) with or without superimposed HART communication, PROFIBUS PA and FOUNDATION Fieldbus-H1.
The advanced diagnostic can be partially shown on the local LCD of the positioner or fully on a PC or a DCS workstation with a DTM based software (VALcare or Valve Monitor).
The PI991 also has the capability to control a Partial Stroke Test (PST) that offers to operators a tool to identify the trouble-proof function of ESD (Emergency Shut Down) valves.

MAIN FEATURES

Low operating cost.
Compact and flexible design.
Easy to comission with user-friendly interface.
Status- and Diagnostic-Messages displayed on LCD.
Integrated mechanical position indicator.
With HART, Profibus PA or FOUNDATION Fieldbus-H1.
Mounting onto any linear or rotary actuator.
Single or double acting.
For SIL3 safety loops.

OPTIONS AND ACCESSORIES

ATEX, FM, CSA and IECEx approvals.
Stainless Steel housing for Offshore or Food and Beverage applications.
Module for analog position feedback.
Binary inputs and outputs.
Digital position feedback with inductive switches (two or three-wire system).
Digital position feedback with microswitches.
Positioner with remote sensor.
Sensors for supply air pressure and output pressure.
Attachment kit for linear actuators acc. to IEC 534/NAMUR and rotary actuators acc. to VDI/VDE 3845.
Connection manifold with gauges.
Infrared Interface for wireless communication.
Partial Stroke Test (PST) for Emergency Shut Down applications.

TECHNICAL DATA

GENERAL

Material	Housing: AISI 316L / 1.4404 st. steel, 1,25 mm thick
IP rating	Protection class IP 66 NEMA 4X
Impact Resistance	7 Joule acc. to EN 50014
Pneumatic connections	Female threaded ISO 228 G 1/4"
Electrical connections	M20 x 1,5 Cable glands Screw terminals: max. 2.5 mm²
Weight	Complete positioner: 3,5 kg

AMBIENT CONDITIONS

Ambient temperature	-40 ºC to 80 ºC

AIR SUPPLY

Air supply pressure	1,4 to 6 bar *
Supply air quality	According to ISO 8573-1
Max. particle size and density	Class 2
Max. oil contents	Class 3

* 1,4 to 7 bar with spool valve.

HART COMMUNICATION (TWO-WIRE SYSTEM)

Reverse polarity protection	built-in standard feature
Signal range	4 to 20 mA
Operating range	3.6 to 21 mA
Voltage	12 to 36 V DC (unloaded circuit)
Maximum load	420 Ohms (8.4 V at 20 mA)
Communication signal	HART, 1200 Baud, FSK modulated on 4 to 20 mA

PROFIBUS-PA

Data transfer	acc. to PROFIBUS- PA profile class B based on EN 50170 and DIN 19245 part 4

FOXCOM COMMUNICATION (DIGITAL OPERATING MODE)

Input signal	digital
Supply voltage	13 to 36 V DC
Supply current	~ 9 mA at 24 V DC
Communication signal	FoxCom digital, 4800 Baud, FSK modulated on supply Voltage

INPUT SIGNAL

Stroke range	8 to 260 mm
Angular range	Up to 95º

Remark: All "intelligent" versions are suplied with micro controller.

RESPONSE CHARACTERISTIC

Sensitivity	< 0,1% of travel span
Non-linearity (terminal based adjustment)	< 0,4 % of travel span
Hysteresis	< 0,3 % of travel span
Supply air dependency	< 0,1 % / 1 bar
Temperature effect	< 0,3 % / 10 K
Mechanical effect	10 to 60 Hz up to 0,14 mm, 60 to 500 Hz up to 2 g: < 0,25 % of travel span

FIELDBUS COMMUNICATION (ACC. TO FISCO)

Input signal	digital fieldbus
Supply voltage	9 to 32 V DC
Operating current	10.5 mA ±0.5 mA (base current)
Current amplitude	±8 mA
Fault current	base current +0 mA (+4 mA by means of independent FDE-safety circuit)

FOUNDATION FIELDBUS H1

Data transfer	FF Specification Rev. 1.4, Link-Master (LAS)
Function blocks	AO, PID, Transducer, Resource, 2 x DI, DO

WITHOUT COMMUNICATION (4 TO 20 MA - TWO-WIRE SYSTEM)

Reverse polarity protection	built-in standard feature
Signal range	4 to 20 mA
Operating range	3,8 to 21,5 mA
Voltage	DC 8 to 36 V (unloaded circuit)
Maximum load	300 Ohms (6 V at 20 mA)

Remarks: For full product specifications, including requirements for use in potentially explosive atmospheres, different communication protocols (Profibus PA and FOUNDATION Fieldbus-H1) and others, please consult.