



# ***APEX A9000 Digital Positioner Accord Controls***



***Experience In Motion***



## ***APEX A9000 Digital Positioner***

### ***Description***

The APEX A9000 is a compact digital positioner that is very simple and quick to install and operate. To calibrate it, simply press the button for 5 seconds, the APEX 9000 will auto-calibrate and tune itself in a few seconds.


The APEX A9000 can be fitted with optional 4-20 mA feedback transmitter and limit switches. HART communication is also possible as an option.

For visual indication you can select between flat indicator or a dome indicator.

### ***Features and Benefit***

- Modular
- Flexible
- Rotary Applications
- Additional switch and position feedback options
- VDI/VDE 3845
- HART option
- 4-20mA feedback option

#### **Intrinsically safe:**

ATEX II 1 G  Ex ia IIC T6

FM Class I, Div. 1, Group A, B, C, D T4

FM AEx ia IIC T4

#### **Non-Incendive**

FM Class I, Div. 2, Groups A, B, C, D T4 (NIFW)

FM Class I, Div. 2, IIC T4 (NIFW)



1. LED's for status and calibration
2. Calibration/configuration button
3. Modular feedback options



Press button and APEX A9000 will auto calibrate itself.



APEX A9000 with LCD, Dome Indicator, and Double Acting module.



APEX A9000 modular design provides many options.



APEX A9000 mounted according to VDI/VDE 3845.

## APEX A9000 Technical data

### APEX A9000 Digital Positioner

Input signal	4-20 mA
Current supply min.	3,6 mA
Current supply Max.	150 mA
Load Standard	400 ohm at 20mA
Load HART	470 ohm at 20mA
Voltage drop Standard	8 VDC at 20mA
Voltage drop HART	9.4 VDC at 20mA
Angle of rotation min	0-40°
Angle of rotation Max	0-90°
Air supply range	1.5 – 6 bar / 22-87 psi
Out put	0-100% of air supply pressure
Air supply quality	Free from oil, dust and moisture IEC 770, ISA 7.0.01
Air supply effect	<0.1%FS for 10% pressure change at 6 Bar / 87 psi
Ingress protection	IP66 / Nema 4X
Operating humidity	0-100% rh non-condensing
Air connections	¼" NPT
Cable entry	2 x ½" NPT or 2 x M20x 1,5
Terminals	Screw terminals 2,5 mm2 (AWG 14)
Operating Temperature	-20 to +85°C -40 to +85°C (optional)
Storage temperature	-40 to +85°C
Air delivery capacity	7 Nm3/h @ 6 bar 4.12 SCFM @ 87 psi
Air delivery capacity Double acting	7 Nm3/h @ 6 bar 4.12 SCFM @ 87 psi
Air consumption Single acting	0,120 Nm3/h @ 6 bar
Air consumption Double acting	.071 SCFM @ 87 psi
Cv air delivery Single acting	0,12
Cv air delivery Double acting	0,12
Cut off function	Close 0.5% Open 99.5%
Linearity	<1%
Sensitivity	<0.05%
Resolution	<0,1%
Repeatability	<0.2%
Hysteresis + dead band	<0.5%
Temp effect	<0.1%/10K
Mounting position effect	<0,2%
CE	93/68/EEC, 2004/108/EEC, 2006/95/EEC
Approvals	II 1G Ex ia IIC T4 Ta:85°C FM Class I, Div. 2, Groups A,B,C,D T4 (NIFW) FM Class i, Div. 2, IIC T4 (NIFW)
Certificate nr	Nemko 08ATEX1362X
Housing material	Die cast Aluminium
Surface treatment	Powder coating
Soft goods	Nitrile

### Optional plug in module

#### Mechanical switches

Type	SPDT
Size	Sub Sub miniature
Rating	3A, 125 VAC / 2A, 30VDC
Mechanical life	>1 x 106 operations

#### Namur sensors

Type	P+F NJ2 V3 N Inductive DIN 19234
Load current	<1mA>3mA
Voltage range	5-25 VDC
Hysteresis	3-15% (5% typical)
Temp range	-25° to +100° C (-248° to 373° F)

#### Namur sensors

Type	P+F SJ2-N
Normal Voltage	8 VDC
Load current	1mA<l<3mA
Voltage range	(5-25 VDC)
Hysteresis (max)	0.2%
Temp range	-25° to +100° C (-248° to 373° F)

#### Namur sensors

Type	P+F SJ2-SN
Normal Voltage	8 VDC
Load current	1mA<l<3mA
Voltage range	5-25 VDC
Hysteresis (max)	(0.2%)
Temp range	-40° to +100° C (-233° to 373° F)

#### Namur sensors

Type	P+F SJ2-S1N
Normal Voltage	8 VDC
Load current	1mA<l<3mA
Voltage range	5-25 VDC
Hysteresis (max)	0.2%
Temp range	-25° to +100° C (-248° to 373° F)

#### Proximity switches

Type	SPDT
Rating	10W
Voltage max	200VDC
Current max	500mA
Contact resistance max	0.2 ohm
Operating time	1.0 ms

#### Transmitter

Power supply	12-28 VDC
Output	1-22 mA
Resolution	0.1%
Linearity	±0.5%
Load impedance	600 ohm at (12 VDC and 20mA)

#### Alarm Output

Supply	3-28 VDC
Output	20mA @ 24 VDC

## **APEX A9000 Digital Positioner Model Code**

### **Brand**

AC - Accord

### **Model**

90 - Digital Positioner, Single Button Interface, LED Status

92 - Digital Positioner, Full LCD Menu, LED Status

### **Approvals, Certifications**

G - General Purpose

I - Intrinsically Safe, ATEX/FM

N - Class I Division 2, Non-incendive w/ Fieldwiring, FM

### **Connections Air, Electrical**

M - 1/4" NPT Air, M20 x 1.5 Electrical

N - 1/4" NPT Air, 1/2" NPT Electrical

### **Housing/Surface Treatment**

U - Aluminum/Powder Epoxy, Black

R - Remote Mount Feedback Sensor

Y - Other

### **Function**

S - Single Acting

D - Double Acting

### **Shaft**

23 - NAMUR VDIVDE 3845 Rotary

### **Cover**

1 - Flat Top, No Indicator

2 - Dome Indicator, Red/Green

3 - Flat Top, Disk Indicator, Green/Black

### **Temperatures/Seals**

Z - Standard -20°C to 85°C (-4°F to 185°F)

Q - Low Temperature -40°C to 85°C (-40°F to 185°F)

### **Input Signal**

N - 4-20 mA/None

H - 4-20 mA/HART

### **Feedback Options**

X - No Feedback Options

T - 4-20 mA Transmitter Only

S - Limit Switches, Mechanical SPDT + 4-20 mA Transmitter

N - NAMUR V3 Type Sensor, P&F NJ2-V3-N + 4-20 mA Transmitter

P - Limit Switches, Proximity SPDT + 4-20 mA Transmitter

### **Options, Add In Electronics**

0 - Standard Diagnostics

1 - Advanced, Built in Pressure Sensors (Available in Model 92 Only)

### **Accessories**

X - No Accessories

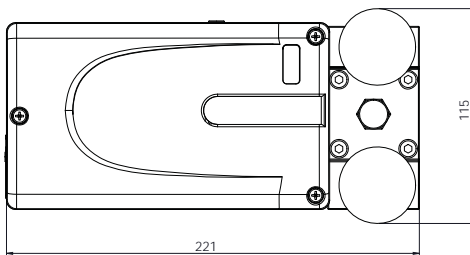
M - Gauge Block 1/8" G (2 gauges included)

N - Gauge Block 1/8" NPT (2 gauges included)

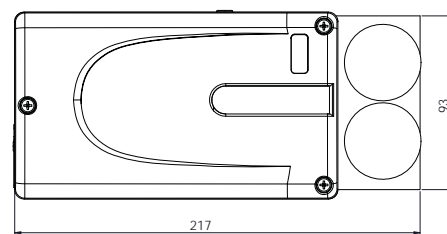
**NOTE 1:** *If you order double acting, you do not need to order a gauge block. Also comes with 2 gauges, Stainless Steel with brass internals.*



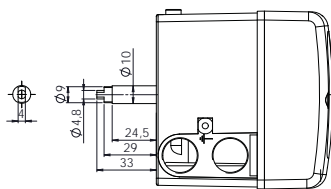
**Spindles and Dimensions drawings (mm)**



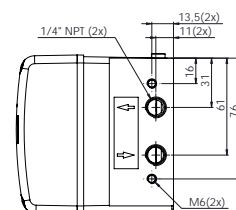
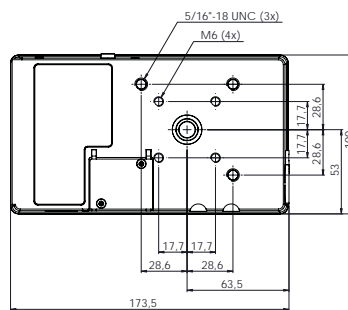
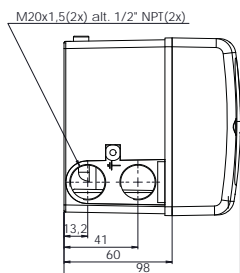
Double acting block



Gauge block



S23 "Namur Spindle"





FCD ACENBR0007-00 Printed in USA.

***To find your local Flowserve representative:***

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