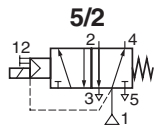
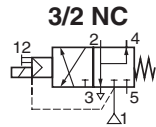
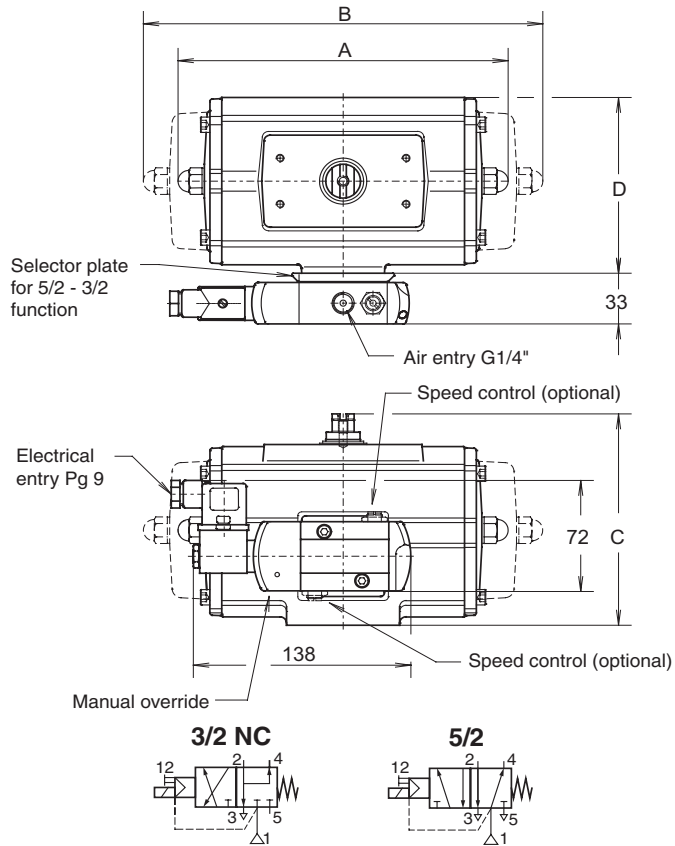


## Data sheet

Sheet No.: 3.106.3 Rev. A

Date: November 2009

## EL-O-MATIC ACTUATORS WITH ASCO SOLENOID VALVES



Dim. in mm.	Actuator type											
	E12	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
<b>A PD/ED</b>	103	159	180	199	221	283	305	387	424	516	378	502
<b>B PE/ES</b>	118	172	204	249	267	360	387	477	517	637	570	834
<b>C</b>	80	100	113	125	138	163	201	250	289	327	386	410
<b>D</b>	60	83	96	107	117	137	182	217	242	275	358	390
<b>Operating times in sec. (at 6 bar with average load)</b>												
	0.3	0.4	0.4	0.5	0.6	0.9	1.3	2	3	5	6	10

### Description

The Asco solenoid valve is a universal type, (5/2 or 3/2) and can be used on double acting or spring return actuators by simply rotating the sealing plate. The assembly is waterproof to IP65.

### Operation

The single solenoid control is continuously rated, and in the event of electrical failure the actuator returns to the clockwise (normally valve closed) position; by mechanical spring in case of single acting; and air in case of double acting versions. The normally 1/4" ported valve has a high kv value, allowing fast operating times. A local manual operation facility is provided as standard. Speed controllers can be fitted as an option.

### Installation

For general purpose solenoid control the Asco solenoid valve is fixed directly to the NAMUR interface on the side of the actuator (E12 requires adaptor plate).

### Technical data

Make	: Asco
Series	: 551
Type	: 5/2-3/2
Material	
housing	: Aluminium anodized
endcaps	: Glass-filled polyamide
option	: Stainless Steel
Air pressure	: 2 to 8 bar
Lubrication	: Not necessary
Temperature	: -25° to 60°C (optional -40°C)
Power	: AC - 2.5W DC - hot : 2.5W / cold : 3W
Voltages	DC : 24V AC : 24, 115 or 230 V (50Hz) : Other voltages and 60Hz on request
Air Entry	: G 1/4"
Air flow, kv	: 0.6 (m <sup>3</sup> /h)
<b>General purpose execution</b>	
Part number AC/DC	: SC G551A001 MS <sup>(1)</sup>
Electrical entry	: Plug, DIN 46244
Enclosure	: IP 65

### Hazardous area executions

Description	Class	Solenoid	Connections
Encapsulation (moulded)	II 2 G EEx m II T5-T4 (gas) <sup>(3)</sup> II 2 D IP65 T 100°C - T 135°C (dust)	PV G551A001 MS <sup>(1)</sup>	Cable (2m)
Flame proof	II 2G EEx d IIC T6...T4 IP65 II 2 D IP65 85°C/100°C/135°C (dust)	NF G551B401 <sup>(1)(2)</sup>	1/2" NPT
Intrinsically Safe	II 1G EEx ia IIC T6	ISSC G551B301 <sup>(1)(2)</sup>	PG11
	II 1G EEx ia IIC T6	WPIS G551B301 <sup>(1)(2)</sup>	Cable gland
Increased safety/Encapsulation	II 2G EEx em II T6...T3	EM G551A401 <sup>(1)(2)</sup>	Cable gland

### Notes

- 1 Specify voltage
- 2 If local manual operation is required on hazardous area executions, add MO to the part number, i.e. : NF G551B401 MO
- 3 Depending on ambient temperature
- 4 Operating times are dependent on load

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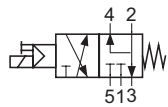
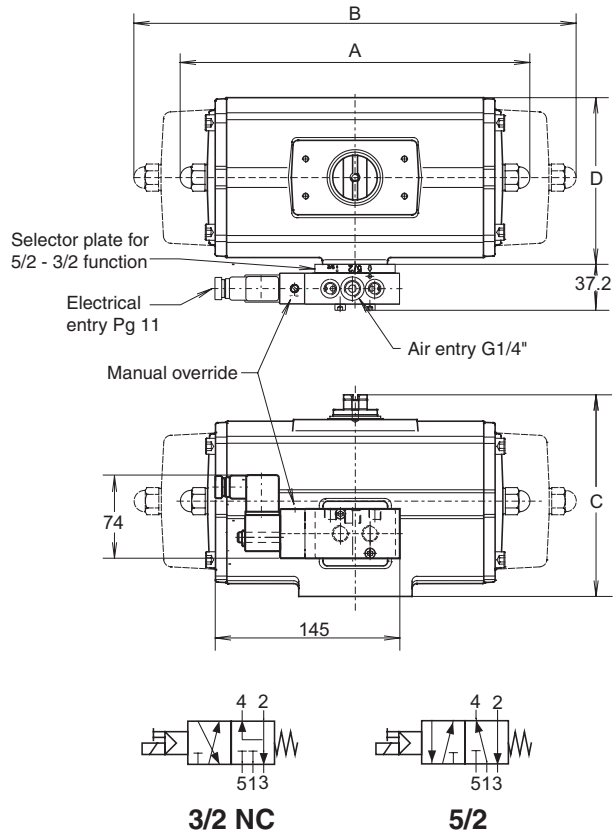
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# Data sheet

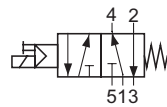
Sheet No.: 3.106.5 Rev. A  
Date: November 2009

## EL-O-MATIC ACTUATOR WITH HERION SOLENOID VALVE

SOL



3/2 NC



5/2

### Description

The Herion solenoid valve is a universal type, (5/2 or 3/2) and can be used on double acting or spring return actuators by simply rotating the sealing plate. The assembly is waterproof to IP65.

### Operation

The single solenoid control is continuously rated and in the event of electrical failure the actuator returns to it's fail safe position; by an air spring in both 3/2 and 5/2 versions. Coils are continuously rated, a push and hold manual override is standard.

### Installation

The Herion solenoid valve is fixed directly to the NAMUR interface on the side of the actuator (E12 has an adaptor plate), eliminating the need for tubing or fittings which can be damaged.

### Technical data

Air pressure	: 2 to 8 bar
Lubrication	: Not required
Temperature	: - 15° to +50°C
Voltage	: 230 VAC/50Hz and 24VDC standard (others available)
Duty rating	: 100%
Enclosure	: IP65, explosion proof on request
Electrical Entry	: Plug DIN 43650 B-PG11
Air Entry	: G1/4"
Air Flow,	: 750 l/min

### Note

1 Operating times are strongly dependent on load

Type	Type nr.	Voltage (V)	Power (W)		
			Body	Coil	
DA/SR	5/2 - 3/2	9710000	3051	230~	5.6/4.3
				24=	1.7

Dim. in mm.	Actuator type											
	E12	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
A PD/ED	103	159	180	199	221	283	305	387	424	516	378	502
B PE/ES	118	172	204	249	267	360	387	477	517	637	570	834
C	80	100	113	125	138	163	201	250	289	327	386	410
D	60	83	96	107	117	137	182	217	242	275	358	390
Operating times in sec. (at 6 bar with average load)												
	0.3	0.35	0.4	0.48	0.52	0.75	1.1	1.6	2.5	3.9	4.5	9.2



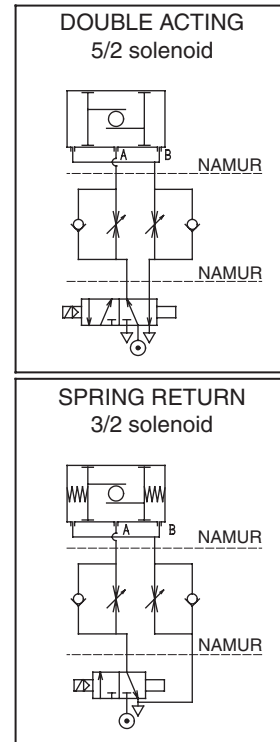
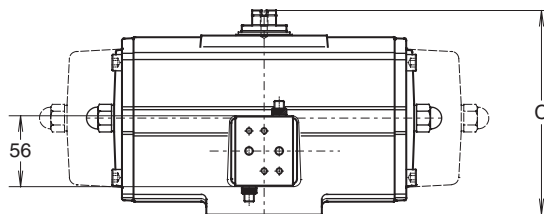
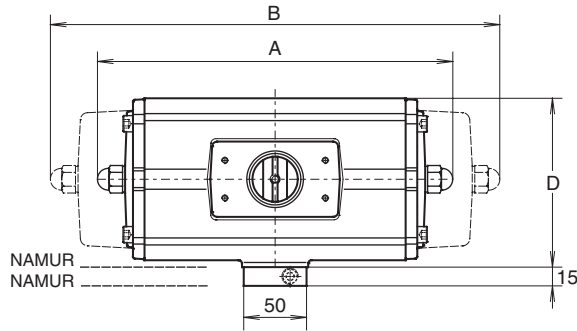
## Data sheet

Sheet No.: 3.110 Rev. A

Date: November 2009

## EL-O-MATIC ACTUATOR WITH SPEED CONTROL PLATE

VP



### Description

This speed control plate is specially used where ordinary flow restrictors will cause a malfunction of the indirect operating solenoid.

### Operation

The flow restrictors A and B are independently adjustable for both strokes, to slow the speed down turn the screw CCW (A for opening, B for closing in code A or B assembly mode).  
On spring return actuators, only the spring return stroke time can be regulated.  
Every port has a combination of a non-return valve and a speed regulator. Only exhausting air has an effect on the speed of the actuator.

### Installation

The speed control plate provides a speed regulating function for both double and spring return actuators with a NAMUR air entry manifold in combination with a NAMUR (in)direct operating solenoid.

### Identification

Factory option : "VP" is added to the basic actuator  
e.g. ED200-VP  
Kit option : Kit VP

Dim. in mm.	Actuator type											
	E12	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
<b>A PD/ED</b>	103	159	180	199	221	283	305	387	424	516	378	502
<b>B PE/ES</b>	118	172	204	249	267	360	387	477	517	637	570	834
<b>C</b>	80	100	113	125	138	163	201	250	289	327	386	410
<b>D</b>	60	83	96	107	117	137	182	217	242	275	358	390

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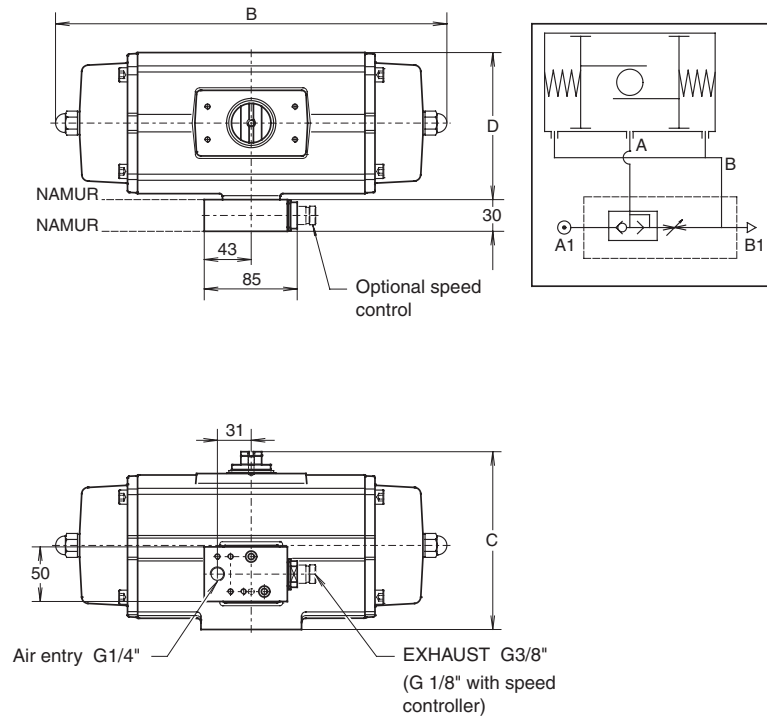
## Data sheet

Sheet No.: 3.120 Rev. A

Date: November 2009

# SPRING RETURN ACTUATOR WITH Q.E. BREATHER BLOCK

**BB**



### Description

The breather block provides corrosion protection of the actuator spring chamber. It should be used on applications where the actuator is located in a corrosive atmosphere which would otherwise be sucked into the actuator through the "B" port during the spring stroke.

### Operation

Air entering the actuator at A1 moves the shuttle valve to the right and allows the actuator to operate normally, displaced air from "B" is exhausted through "B1".

At the spring stroke, air is exhausted at "A1" and the shuttle valve moves to the left allowing the air from "A" to first fill the spring chamber through "B" then to exhaust to atmosphere at "B1".

The breather block has an built-in quick exhaust function to improve the spring stroke time (see table). An optional speed control can be provided to regulate this closing time.

### Installation

The breather block is fixed directly onto the NAMUR air entry manifold and has a further NAMUR interface so that a suitable solenoid valve may be directly mounted, or for a tubing connection in the case of a remote solenoid valve.

### Technical data

Housing	: Aluminium alloy
Finish	: Hard anodized, impregnated with PTFE
Pressure	: 1 to 8 bar
Media	: Air, dry or lubricated or non-corrosive gas (not suitable for oxygen service)
Temperature	: -20° to 80°C
Air entry	: G 1/4" and NAMUR
Air exhaust	: G 3/8" ( or 1/8" with speed control)
Air flow	: (Kv)
Air stroke	: 0.8 (m <sup>3</sup> /h)
Spring stroke	: 1.9 (m <sup>3</sup> /h)

### Identification

Factory option	: "BB" is added to the basic actuator part Nr. eg. ES200+BB
Kit option	: Kit BB
With speed control	: Kit BBS

Dim. in mm.	Actuator type										
	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
<b>A PD/ED</b>	159	180	199	221	283	305	387	424	516	378	502
<b>B PE/ES</b>	172	204	249	267	360	387	477	517	637	570	834
<b>C</b>	100	113	125	138	163	201	250	289	327	386	410
<b>D</b>	83	96	107	117	137	182	217	242	275	358	390
<b>Operating times in sec. (at 6 bar with average load)</b>											
<b>Air stroke</b>	0.35	0.4	0.50	0.53	0.75	1.1	1.7	206	4.1	4.7	8.5
<b>Spring stroke</b>	0.33	0.35	0.42	0.44	0.53	0.80	1.1	1.7	2.5	2.9	5.3

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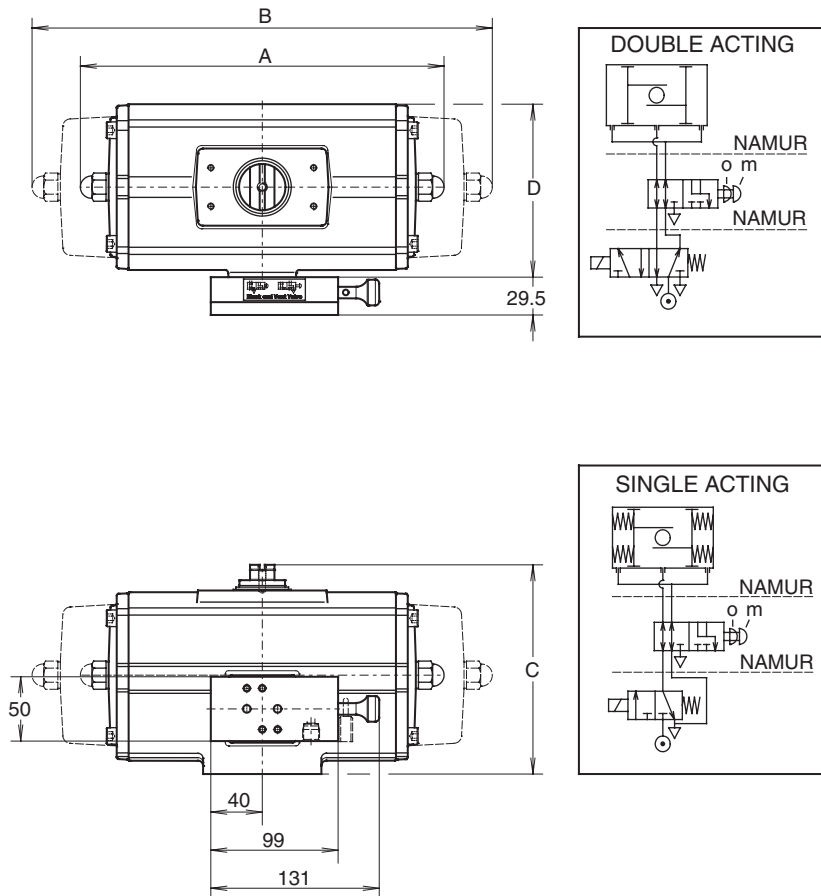
## Data sheet

Sheet No.: 3.130 Rev. A

Date: November 2009

## EL-O-MATIC ACTUATOR WITH BLOCK AND VENT VALVE

BV



### Description

This ancillary provides a local means of blocking the supply air from the actuator at the same time venting all compressed air from both chambers of the actuator.

It is suitable for double acting or spring return actuators and should be used on applications where "On site" servicing of the actuator is required and where the actuator needs to be isolated from the control system.

### Operation

The "Block and Vent" valve has a two position manual control for switching between the "O" (open) and "M" (manual or maintenance) position. An indicator shows which position is selected.

With the control in the "O" position both actuator ports are open to solenoid valve for normal control of the actuator.

With the control in the "M" position both actuator ports are opened to exhaust and supply air from the solenoid valve is blocked off.

### Installation

The valve block is fixed directly onto the NAMUR air entry manifold and has a further NAMUR interface so that a suitable solenoid valve may be directly mounted. Use extra long bolts (not supplied); standard bolts delivered with solenoids will be to short.

### Technical data

Housing	: Aluminium Alloy
Finish	: Anodized
Air pressure	: To 8 bar
Lubrication	: Not necessary
Temperature	: -20° to 80°C
Air Ports	: G 1/4"
Air flow: (kv)	: 0.8 (m <sup>3</sup> /h)
Media	: Air, dry or lubricated or non-corrosive gas (not suitable for oxygen service)

### Identification

Factory Option : "BV" is added to the basic actuator part Nr. i.e.: ED200+BV

Kit : Kit BV

### Option

A lockable version is available, this can be locked in the "O" position by means of a padlock. Padlock not supplied.

Dim. in mm.	Actuator type											
	E12	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
A PD/ED	103	159	180	199	221	283	305	387	424	516	378	502
B PE/ES	118	172	204	249	267	360	387	477	517	637	570	834
C	80	100	113	125	138	163	201	250	289	327	386	410
D	60	83	96	107	117	137	182	217	242	275	358	390

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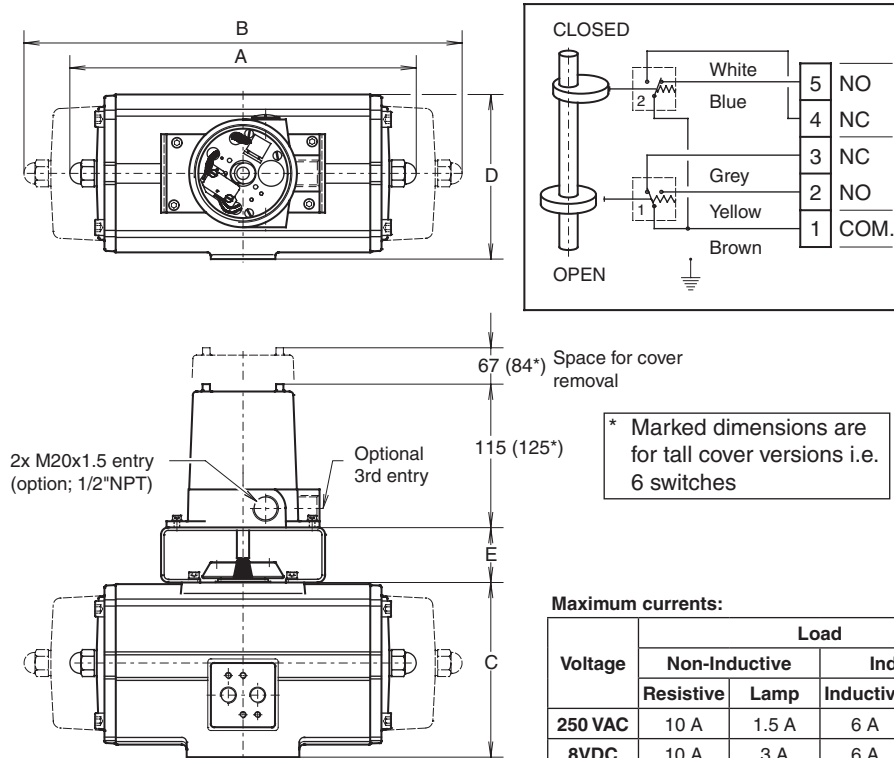
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# Data sheet

Sheet No.: 3.201.002 Rev. A  
Date: November 2009

## EL-O-MATIC ACTUATOR WITH HD SWITCH BOX IP67

HD



Maximum currents:

Voltage	Load			
	Non-Inductive		Inductive	
	Resistive	Lamp	Inductive	Motor
250 VAC	10 A	1.5 A	6 A	2 A
8VDC	10 A	3 A	6 A	3 A
30VDC	6 A	3 A	6 A	3 A
125 VDC	0.6 A	0.1 A	0.6 A	0.1 A
250 VDC	0.3 A	0.05 A	0.3 A	0.05 A

Dim. in mm.	Actuator type											
	E12	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
A PD/ED	103	159	180	199	221	283	305	387	424	516	378	502
B PE/ES	118	172	204	249	267	360	387	477	517	637	570	834
C	60	80	93	105	118	143	181	220	259	297	356	380
D	60	83	96	107	117	137	182	217	242	275	358	390
E	45	45	45	45	45	45	45	55	55	55	55	55

### Description

This heavy duty switch box encloses two single pole double throw switches for indicating the fully open and fully closed actuator positions. The enclosure is waterproof to IP67 (submersible) and as such completely dust tight.

### Operation

The switches are operated by two cams on an extension of the actuator drive shaft and all mechanical parts are contained within the enclosure. Both switches are independently adjustable throughout the operating stroke, but are normally set to indicate at about 5° before each end position.

### Installation

The two switches are prewired to a 5 pole terminal block, which is easily accessible when the top cover is removed. Two electrical entries are included (third entry optional), one of which is fitted with a blanking plug. This, with the addition of an extra pair of terminals, enables the switchbox to be used as a junction box for the solenoid wiring and provides the actuator with a single electrical entry. The switch box is mounted on top of the actuator with an accessory bracket according VDI/VDE 3845 (NAMUR), which incorporates a visual position indicator.

### Technical data

#### Switches

Type : V3, mechanical  
Contacts : Normally open and normally closed

#### Housing

Material : Aluminium alloy, AlSi7Mg  
Enclosure : IP 67 (IEC 529)  
Temperature : - 20°C to + 80°C  
Cable entries : 2 x M20x1.5  
Connections : 5 terminals (2.5 mm<sup>2</sup>)  
Finish : Epoxy coating, black  
Mounting : Acc. VDI/VDE 3845 (NAMUR), E12 has its own bracket

#### Identification

HD



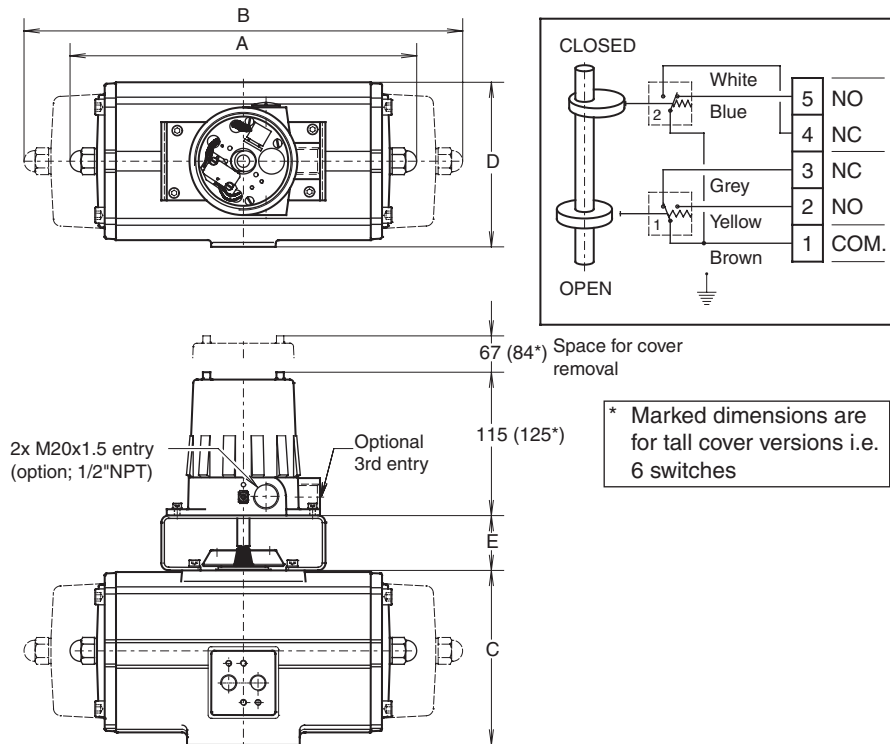
## Data sheet

Sheet No.: 3.201.003 Rev. A

Date: November 2009

## EL-O-MATIC ACTUATOR WITH HD SWITCH BOX Ex d

HDX



Dim. in mm.	Actuator type											
	E12	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
A PD/ED	103	159	180	199	221	283	305	387	424	516	378	502
B PE/ES	118	172	204	249	267	360	387	477	517	637	570	834
C	60	80	93	105	118	143	181	220	259	297	356	380
D	60	83	96	107	117	137	182	217	242	275	358	390
E	45	45	45	45	45	45	45	55	55	55	55	55

### Description

This heavy duty switch box encloses two single pole double throw switches for indicating the fully open and fully closed actuator positions. The HDX enclosure is Flameproof (Ex d) with ATEX and IECEx approvals and is suitable for use in zone 1, 2, 21 and 22 with all gas and dust groups. The enclosure is also ingress protected to IP67 and as such completely water and dust tight.

### Operation

The switches are operated by two cams on an extension of the actuator drive shaft and all mechanical parts are contained within the enclosure. Both switches are independently adjustable throughout the operating stroke, but are normally set to indicate at about 5° before each end position.

### Installation

The two switches are prewired to a 5 pole terminal block, which is easily accessible when the top cover is removed. Two electrical entries are included (third entry optional), one of which is fitted with a blanking plug. This, with the addition of an extra pair of terminals, enables the switchbox to be used as a junction box for the solenoid wiring and provides the actuator with a single electrical entry. The switch box is mounted on top of the actuator with an accessory bracket according VDI/VDE 3845 (NAMUR), which incorporates a visual position indicator.

### Technical data

#### Switches

Type : V3, mechanical  
Voltage : Maximum 250 V ac or dc  
Current : Maximum 5 A  
Contacts : Normally open and normally closed

#### Housing

Material : Aluminium alloy, AlSi7Mg  
Enclosure : IP 67 (IEC 529)  
Temperature : - 20°C to + 55°C  
Cable entries : 2 x M20x1.5  
Connections : 5 terminals (2.5 mm<sup>2</sup>)  
Finish : Epoxy coating, black  
Mounting : Acc. VDI/VDE 3845 (NAMUR), E12 has its own bracket

#### Protection

Method : Flame proof 'd';  
ATEX : Baseefa 07 ATEX 0095X  
Marking : Ⓜ II 2 GD Ex d IIC T6, Ex tD A21 IP67 T85°C (-20°C ≤ ta ≤ +55°C)

#### IECEx

Certificate : IECEx BAS 07.0017X  
Marking : Ex d IIC T6, Ex tD T85°C (-20°C ≤ ta ≤ +55°C)

#### Identification

HDX

#### Options

Low temperature execution, -55°C / +55°C  
Various 2- and 3-wire proximity switches

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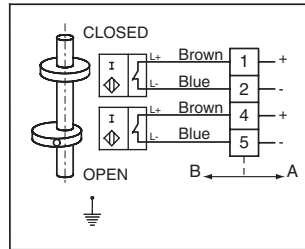
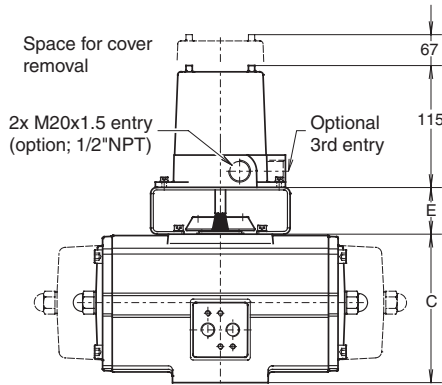
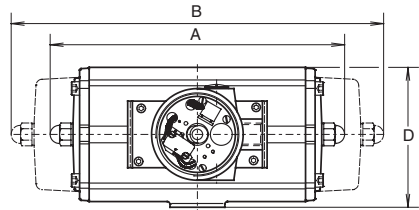


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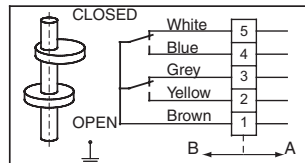
Sheet No.: 3.201.006 Rev. A  
Date: November 2009

## EL-O-MATIC ACTUATOR WITH HD SWITCH BOX INTRINSICALLY SAFE

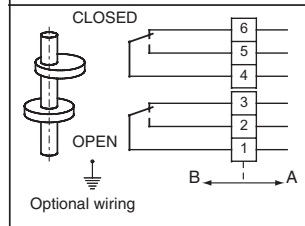
HDX



2-Wire inductive switches



Basic wiring



Mechanical switches

B : Box wiring  
A : Field wiring

### Description

This heavy duty switch box encloses two proximity switches or two single pole double throw change over switches for indicating the fully open and fully closed actuator positions. The switch box is intrinsically safe to II 1G or II 2 G EEx ia IIC T6...T4 and II 1 D T 44 °C...T 80 °C and suitable for all zones with all gas groups and dust groups. The enclosure is ingress proof to IP67 and as such completely dust and water tight.

### Operation

The sensors are operated by two vanes or cams on an extension of the actuator drive shaft and all mechanical parts are contained within the enclosure. Both switches are independently adjustable throughout the operating stroke, but are normally set to indicate at about 5° before each end position.

### Installation

The two switches are prewired to a terminal block, which is easily accessible when the top cover is removed. Two electrical entries are included (third entry optional), one of which is fitted with a blanking plug. The switch box is mounted on top of the actuator with an accessory bracket according VDI/VDE 3845 (NAMUR), which incorporates a visual position indicator.

### Protection

Method : Intrinsically safe  
Marking :  $\text{Ex}$  II 1G or II 2 G  
EEx ia IIC T6...T4  
 $\text{Ex}$  II 1 D T 44 °C...T 80 °C  
Certificate : KEMA 04ATEX 1005 X

### Technical data

#### Proximity switches

Slot type : SJ3,5-N, SJ5-N, SJ3,5-SN or SC3.5-G-N  
V3 type : NJ2-V3-N  
Voltage : 8 VDC (Ri = 1kOhm)  
Amps (output) : Switched, < 1 mA  
Standards : DIN EN 60947-5-6 (NAMUR)  
: For SJ3,5-SN : VDE 660 Part 209

#### Mechanical switches

Voltage : U<sub>i</sub> = 30 V  
Current : I<sub>i</sub> = 300 mA  
Power : P<sub>i</sub> = 1.2 W  
Capacitance : C<sub>i</sub> = 0 nF  
Inductance : L<sub>i</sub> = 0 μH

#### Housing

Material : Aluminium alloy, AlSi7Mg  
Enclosure : IP 67 (IEC 529)  
Cable entries : 2 x M20x1.5  
Connections : Inside terminals (2.5 mm<sup>2</sup>)  
Finish : Epoxy coating, black  
Mounting : Acc. VDI/VDE 3845 (NAMUR), E12 has its own bracket

Temperature : -25° to +80°C  
Actual upper temperature may be limited by the application. See certificate for more detailed info.

#### Identification

HD-box IS1 : SJ3,5-SN  
HD-box IS2 : SJ3,5-N  
HD-box IS3 : SJ5-N  
HD-box IS6 : NJ2-V3-N  
HD-box IS7 : V3 mechanical switch  
HD-box IS10 : SC3.5-G-N

Dim. in mm.	Actuator type											
	E12	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
A PD/ED	103	159	180	199	221	283	305	387	424	516	378	502
B PE/ES	118	172	204	249	267	360	387	477	517	637	570	834
C	60	80	93	105	118	143	181	220	259	297	356	380
D	60	83	96	107	117	137	182	217	242	275	358	390
E	45	45	45	45	45	45	45	55	55	55	55	55



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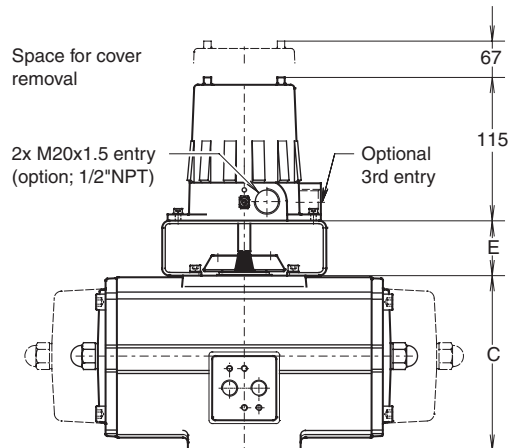
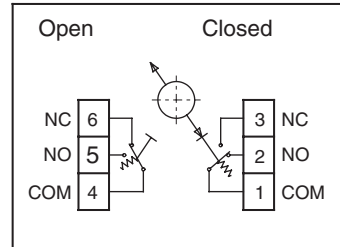
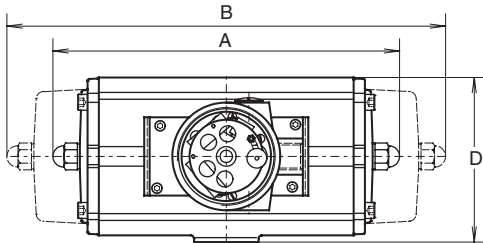
## Data sheet

Sheet No.: 3.201.009 Rev. A

Date: November 2009

## EL-O-MATIC ACTUATOR WITH HD SWITCH BOX EEx e/d

## HDX B2



Switching capacity with AC		
	ohmic load	inductive load
250 V	5 A	5 A
30 V	5 A	5 A

Switching capacity with DC		
	ohmic load	inductive load
250 V	0.25 A	0.03 A
125 V	0.5 A	0.06 A
75 V	1 A	1 A
30 V	5 A	5 A

### Description

This heavy duty switch box encloses two single pole double throw switches for indicating the fully open and fully closed actuator positions. The switches are explosion proof (EEx d) certified to EN 50018.

The HDX enclosure is Flameproof (Ex d) with ATEX and IECEx approvals and is suitable for use in zone 1, 2, 21 and 22 with all gas and dust groups. It is also waterproof to IP67 (submersible) and as such completely dust tight.

### Operation

The switches are operated by a rotary cam on an extension of the actuator drive shaft and all mechanical parts are contained within the enclosure. Both switches are independently adjustable throughout the operating stroke, but are normally set to indicate at about 5° before each end position.

### Installation

The two switches are prewired to a terminal block, which is easily accessible when the top cover is removed.

Two electrical entries are included, one of which is fitted with a blanking plug. This, with the addition of an extra pair of terminals, enables the switchbox to be used as a junction box for the solenoid wiring and provides the actuator with a single electrical entry.

The switch box is mounted on top of the actuator with an accessory bracket according VDI/VDE 3845 (NAMUR), which incorporates a visual position indicator.

### Technical data

#### Switches

Type : Bartec type 07-1501  
Enclosure : IP 54 (IEC 529)

#### Protection

Methode : Flame proof  
Marking : II 2 G EEx d IIC  
I M 2 EEx d I  
Certificate : PTB98ATEX1033 U  
Contacts : Normally open and normally closed

Temperature : - 20°C to + 55° C

#### Housing

Material : Aluminium alloy, AlSi7Mg  
Enclosure : IP 67 (IEC 529)  
Cable entries : 2 x M20x1.5  
Connections : 6 terminals (2.5mm<sup>2</sup>)  
Finish : Epoxy coating, black  
Mounting : Acc. VDI/VDE 3845 (NAMUR), E12 has its own bracket

#### Protection

Method : Increased safety 'e' in a flame proof 'd' enclosure  
Marking : II 2 G D EEx ed I C T6, Tamb = -20°C - 55°C

Certificate : Baseefa03ATEX0559X/1

#### Identification

HD B2

Dim. in mm.	Actuator type											
	E12	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
A PD/ED	103	159	180	199	221	283	305	387	424	516	378	502
B PE/ES	118	172	204	249	267	360	387	477	517	637	570	834
C	60	80	93	105	118	143	181	220	259	297	356	380
D	60	83	96	107	117	137	182	217	242	275	358	390
E	45	45	45	45	45	45	45	55	55	55	55	55

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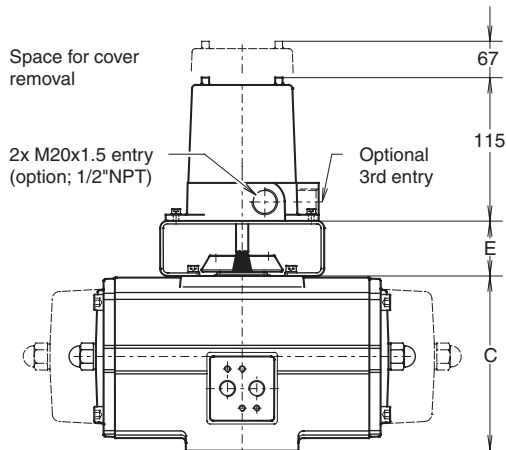
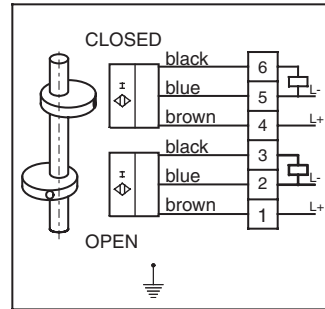
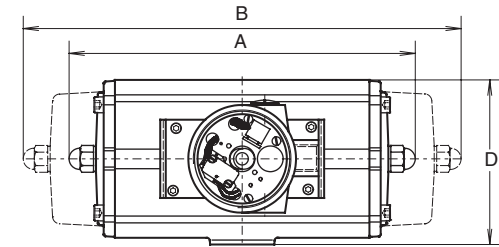
## Data sheet

Sheet No.: 3.201.010 Rev. A

Date: November 2009

## EL-O-MATIC ACTUATOR WITH HD SWITCH BOX

P&F V3



### Description

This heavy duty switch box, which enclosure contains two inductive proximity sensors without amplifiers, provides electric indication of the valve position.

The enclosure is ingress protected to IP67 (submersible) and as such completely dust tight.

### Operation

The sensors are operated by two cams on a shaft extension of the actuator spindle and all mechanical parts are enclosed within the enclosure. Both switching points are independently adjustable and are normally set to indicate at about 5° before each end position.

### Installation

The sensors wiring is prewired to a terminal block which is easily accessible when the top cover is removed.

Two cable entries are provided, (third entry optional), one of which is fitted with a blanking plug. This, with the addition of an extra pair of terminals, enables the switchbox to be used as a junction box for the solenoid wiring and provides the actuator with a single electrical entry.

The switch box is mounted on top of the actuator with an accessory bracket according VDI/VDE 3845 (NAMUR), which incorporates a visual position indicator.

### Technical data

#### Switches

Type : **3-wire inductive** PNP, normally open, with LED's  
 Name : Pepperl & Fuchs  
 Model : **NBB2-V3 E2**  
 Voltage : 10-30 VDC nominal  
 Max. current : 100 mA.  
 Temperature : -25°C to +70°C

#### Housing:

Material : Aluminium alloy, AlSi7Mg  
 Enclosure : IP 67 (IEC 529)  
 Cable entries : 2 x M20x1.5  
 Connections : Inside terminals (2.5mm<sup>2</sup>)  
 Finish : Epoxy coating, black  
 Mounting : Acc. VDI/VDE 3845 (NAMUR), E12 has its own bracket.

#### Identification

3 Wire = HD-PNP

Dim. in mm.	Actuator type											
	E12	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
A PD/ED	103	159	180	199	221	283	305	387	424	516	378	502
B PE/ES	118	172	204	249	267	360	387	477	517	637	570	834
C	60	80	93	105	118	143	181	220	259	297	356	380
D	60	83	96	107	117	137	182	217	242	275	358	390
E	45	45	45	45	45	45	45	55	55	55	55	55

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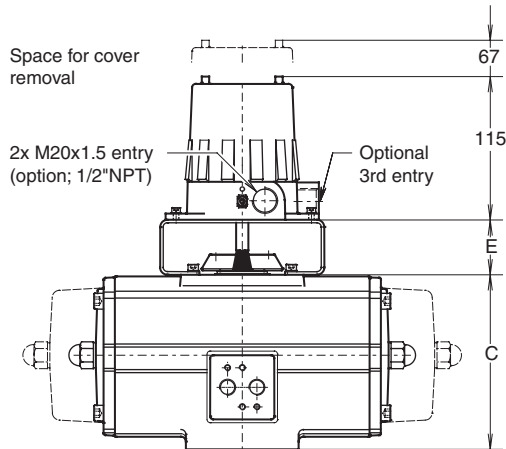
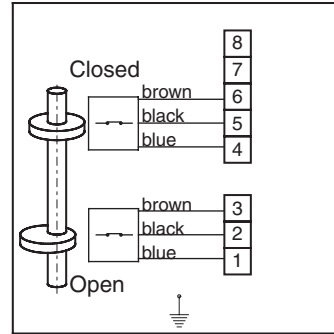
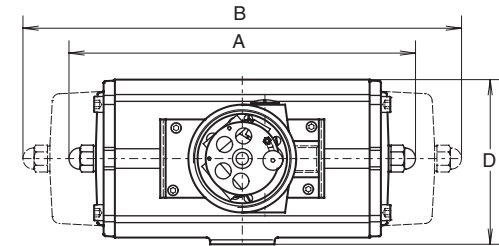
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# Data sheet

Sheet No.: 3.201.012 Rev. A  
Date: November 2009

## EL-O-MATIC ACTUATOR WITH HD SWITCH BOX - EEx d

HDX R2



### Description

This heavy duty switch box encloses two magnetic reed switches for indicating the fully open and fully closed actuator positions. The HDX enclosure is Flameproof (Ex d) with ATEX and IECEx approvals and is suitable for use in zone 1, 2, 21 and 22 with all gas and dust groups. The enclosure is also waterproof to IP67 (submersible) and as such completely dust tight.

### Operation

The switches are operated by a rotary cam on an extension of the actuator drive shaft and all mechanical parts are contained within the enclosure. Both switches are independently adjustable throughout the operating stroke, but are normally set to indicate at about 5° before each end position.

### Installation

The two switches are prewired to a terminal block, which is easily accessible when the top cover is removed.

Two electrical entries are included (third entry optional), one of which is fitted with a blanking plug. This, with the addition of an extra pair of terminals, enables the switchbox to be used as a junction box for the solenoid wiring and provides the actuator with a single electrical entry.

The switch box is mounted on top of the actuator with an accessory bracket according VDI/VDE 3845 (NAMUR), which incorporates a visual position indicator.

### Technical data

#### Switches

Type : Reed switches  
Material : Glassfilled Nylon (PA 6 GK 30)  
Voltage : Max. 70 VAC or VDC  
Current : Max. 0.1 A (3W/VA)  
Hysteresis : 1%  
Life : Min. 10<sup>6</sup> cycles  
Contacts : C-type, SPDT  
Resistance : 47 Ohm  
Option : 0 Ohm

#### Magnet

Material : Neodymium

#### Housing

Material : Aluminium alloy AlSi7Mg  
Enclosure : IP 67 (IEC 529)  
Cable entries : 2 x M20x1.5  
Connections : 8 terminals (2.5mm<sup>2</sup>)  
Finish : Epoxy coating, black  
Temperature : -20°C to +55°C  
Mounting : Acc. VDI/VDE 3845 (NAMUR), E12 has its own bracket

#### Protection

Method : Flame proof 'd';  
ATEX : Baseefa 07 ATEX 0095X  
Marking : ⓂII 2 GD Ex d IIC T6,

Ex tD A21 IP67 T85°C (-20°C ≤ ta ≤ +55°C)  
IECEX : IECEx BAS 07.0017X  
Marking : Ex d IIC T6, Ex tD T85°C (-20°C ≤ ta ≤ +55°C)

#### Identification

HDX R2

Dim. in mm.	Actuator type											
	E12	E25	E40	E65	E100	E200	E 350	E600	E950	E1600	P2500	P4000
A PD/ED	103	159	180	199	221	283	305	387	424	516	378	502
B PE/ES	118	172	204	249	267	360	387	477	517	637	570	834
C	60	80	93	105	118	143	181	220	259	297	356	380
D	60	83	96	107	117	137	182	217	242	275	358	390
E	45	45	45	45	45	45	45	55	55	55	55	55

