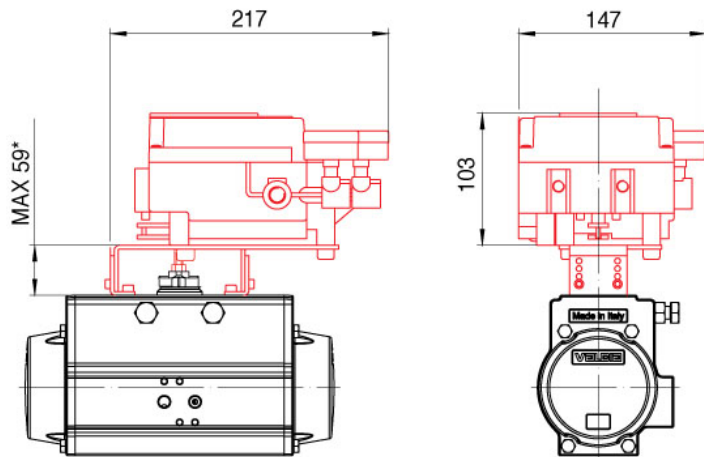


ELECTRO-PNEUMATIC POSITIONER




*79 mod. 330

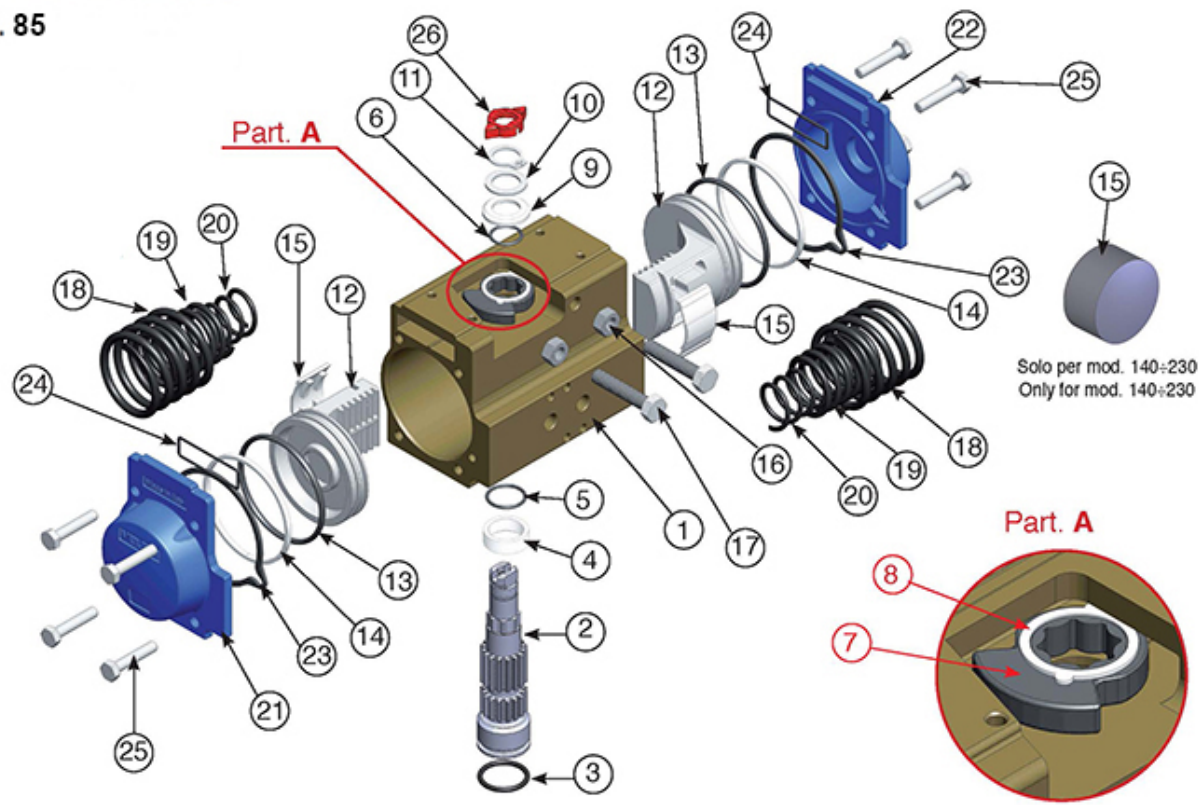
MAIN CHARACTERISTICS

Input current	4~20 mA cc (standard)*
Input resistance	235 +/- 15 Ω (4~20 mA cc)
Supply pressure	1,4~7 bar
Standard stroke	0°-100° MINIMUM ADJUSTMENT > 60°
Sensitivity	WITHIN 0,5%
Linearity	WITHIN +/- 2%
Hysteresis	WITHIN 1%
Repeatability	WITHIN +/- 0,5% F S
Thermal coefficient	WITHIN 0,1% F S/ °C
Output flow	DA 80 NI/min o > (Alim.:1,4 bar) A 200 NI/min o > (Alim.:4bar)
Air consumption	DA 5 NI/min o < (Alim.:1,4 bar) A 11 NI/min o > (Alim.:4bar)
Working temperature	-20°C ~ 80°C
Connections	Female screw 1/4" NPT
Electrical connections	M20 x 1,5
Material	Die cast aluminium
Weight	2.4 Kg
Classification of protection degree	IP65
Parameters	Ui ≤ 28V, Ii ≤ 125 mA, Pi ≤ 1.2W, Ci ≤ OnF, Li ≤ OmH

*: On the standard model it is possible 1/2 split this rate selecting the angular stroke.

CODE	STANDARD VERSIONS	ACTUATOR MOD.
3160000029	 Electro-pneumatic positioner 4-20mA atex Intrinsic safety type of explosion protected construction II 2G Ex ib II C T5/T6 Approval KEMA No. 03 ATEX1119	52-270 85
31600280001		330
31600000035	Electro-pneumatic positioner 4-20mA with feed back signal 4-20mA	52-270
31600280003		330

ASSEMBLING AND ADJUSTING OF POSITIONER

MOD. 85


POSIZ. ITEM	DESCRIZIONE DESCRIPTION	MATERIALE MATERIAL	TRATTAMENTO TREATMENT	Q.TA' DA	Q.TA' SR
1	Corpo - Body	Alluminio estruso - Extruded aluminium	Ossidato duro - Hard anodized	1	1
2	Pignone antiespulsione - Anti-blowout pinion	Acciaio - Steel	Nichelato - Nickel plated	1	1
• 3	O-ring	NBR		1	1
• 4	Anello distanziale - Spacer ring	POM		1	1
• 5	O-ring	NBR		1	1
• 6	O-ring	NBR		1	1
7	Camma - Cam	Acciaio inox - Stainless steel		1	1
8	Anello camma - Spacer	POM		1	1
• 9	Anello sotto seeger -Spacer	POM		1	1
10	Rondella - Washer	Acciaio inox - Stainless steel		1	1
** 11	Seeger - Snap ring	Acciaio - Steel	Nichelato - Nickel plated	1	1
12	Pistone - Piston	Alluminio pressofuso - Die cast aluminium		2	2
• 13	O-ring	NBR		2	2
• 14	Anello antifrizione - Antifriction ring	POM		2	2
• 15	Pattino reggispinta - Thrust block	POM		2 [4]	2 [4]
16	Dado di bloccaggio reg. - Stop bolt retaining nut	Acciaio inox - Stainless steel		2	2
17	Vite di regolazione - Stop bolt	Acciaio inox - Stainless steel		2	2
18	Molla esterna - External spring	Acciaio - Steel	Verniciata - Painted	0	Vedi set molla pag. 22 See spring setting at page 22
*** 19	Molla centrale - Central spring	Acciaio - Steel	Verniciata - Painted	0	
20	Molla interna - Internal spring	Acciaio - Steel	Verniciata - Painted	0	
21	Tappo sinistro - Left end cap	Alluminio pressofuso - Die cast aluminium	Verniciato - Painted	1	1
22	Tappo destro - Right end cap	Alluminio pressofuso - Die cast aluminium	Verniciato - Painted	1	1
23	Guarnizioni Tappi - End cap seats	NBR		2	2
24	O-ring	NBR		2	2
25	Vite di serraggio tappi - End cap fixing screw	Acciaio inox - Stainless steel		8	8
26	Indicatore di posizione - Position indicator	Gomma termoplastica TPE Thermoplastic rubber TPE		1	1

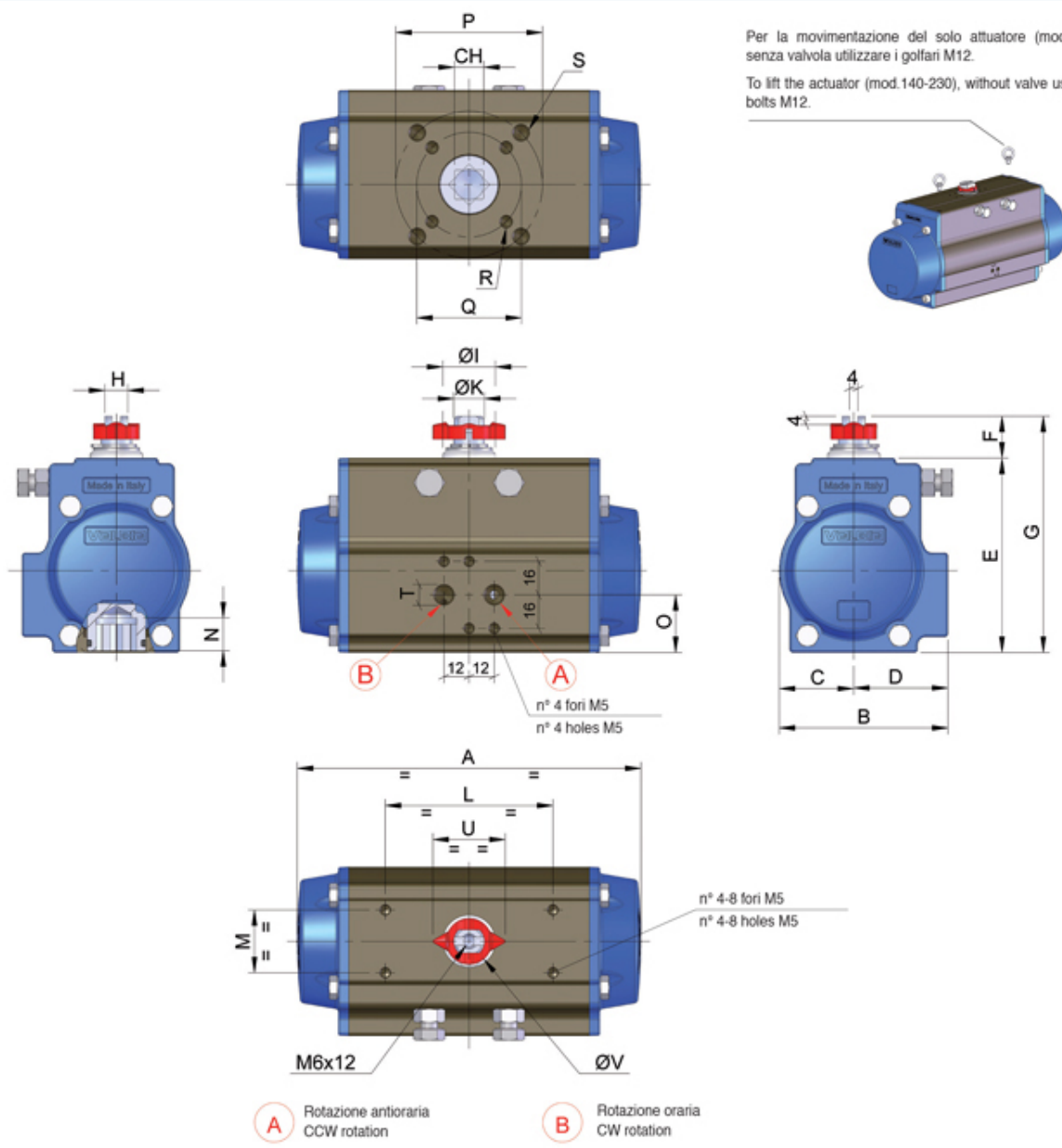
• Particolari soggetti ad usura - Parts subject to wear ** Serie rinforzata DIN 471-UNI 7436 - Reinforced series DIN 471-UNI 7436

[4] Vale solo per mod. 140-160-180-200-230 - Valid for mod. 140-160-180-200-230 only.

*** Solo per mod. 160-180-200 - Only for mod. 160-180-200.

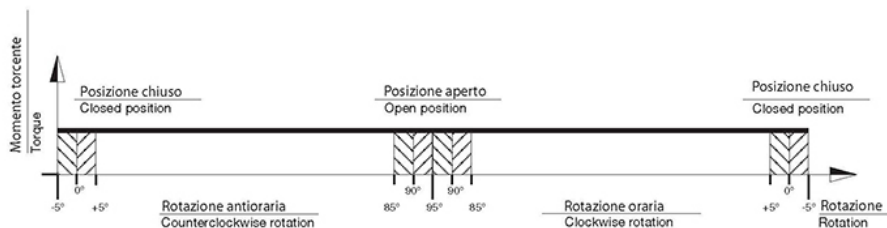
Per la movimentazione del solo attuatore (mod.140-230) senza valvola utilizzare i golfari M12.

To lift the actuator (mod.140-230), without valve use the eye bolts M12.



MOD.	FORATURA DRILLING ISO 5211	CH	A	B	C	D	E	F	G	H	ØI	ØK	L	M	N	O	P	Q	R	S	T ISO 7/1	U	øV
85	F05 - F07	17	240,5	106	47,5	58,5	125	20	145	15	35	22	80	30	19	42	70	50	M6X8	M8X12	1/8"	42	29

ATTUATORE DOPPIO EFFETTO DOUBLE ACTING ACTUATOR



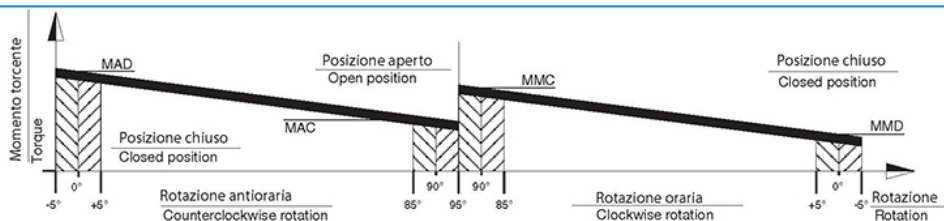
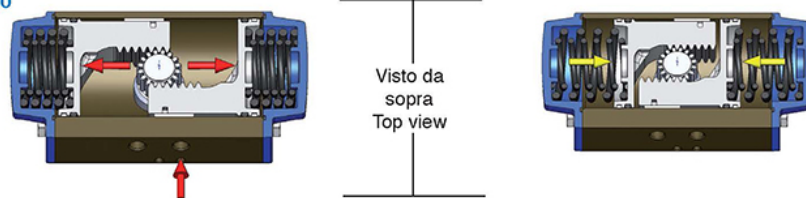
IT Dal grafico riportato si può notare che la coppia di un attuatore a doppio effetto si mantiene costante lungo tutta la manovra. L'utilizzatore potrà procedere alla scelta del modello idoneo alle proprie esigenze basandosi sulle seguenti indicazioni:

1. verificare la coppia di spunto massima della valvola da automatizzare;
2. aumentare del 25-50% (a seconda del tipo di valvola e delle condizioni di esercizio) il valore della coppia di spunto verificata, stabilendo così un coefficiente di sicurezza;
3. ottenuto in questo modo il valore di coppia consigliato, individuare nella tabella dei momenti torcenti (in corrispondenza della pressione disponibile) un valore di coppia uguale o simile (comunque non inferiore) a quello ottenuto;
4. una volta identificato il valore basterà spostarsi in orizzontale verso la colonna "modello" per avere la misura dell'attuatore adatto.

UK With reference to the above diagram it can be noted that the torque of a double acting actuator remains constant through-out the complete operation. The user can decide on which model to choose according to the specific requirements, using the following guidelines:

1. define the maximum torque of the valve to automate;
2. to obtain a safety factor increase the torque value chosen by 25-50% (subject to the type of valve and working conditions);
3. once the torque value suggested is obtained consult the torque chart (in relation to the corresponding air pressure) to find a torque value exact or similar to (but not lower than) the one obtained;
4. once the torque value is determined move horizontally to the column "model" to find the suitable actuator model.

ATTUATORE SEMPLICE EFFETTO SPRING RETEURN ACTUATOR



IT Dal grafico riportato si può notare che la coppia di un attuatore a semplice effetto non è costante ma decrescente. Questo è dovuto all'azione delle molle che si comprimono opponendosi al movimento dei pistoni, accumulando energia che sarà resa disponibile in modo decrescente durante l'inversione della rotazione. La coppia dall'attuatore è quindi caratterizzata da quattro valori fondamentali.

Rotazione in apertura

MAD = Coppia attuatore con molle distese
MAC = Coppia attuatore con molle compresse

Rotazione in chiusura

MMC = Coppia molle compresse
MMD = Coppia molle distese

L'utilizzatore potrà procedere alla scelta del modello idoneo alle proprie esigenze basandosi sulle seguenti indicazioni:

1. verificare la coppia di spunto massima della valvola da automatizzare;
2. aumentare del 25-50% (a seconda del tipo di valvola e delle condizioni di esercizio) il valore della coppia di spunto verificata, stabilendo così un coefficiente di sicurezza;
3. ottenuto in questo modo il valore di coppia consigliato, individuare nella tabella dei momenti torcenti (in corrispondenza della pressione disponibile) un valore di coppia uguale o simile (comunque non inferiore) a quello ottenuto considerando però il valore più basso tra i valori MMD e MAC;
4. una volta identificato il valore basterà spostarsi in orizzontale verso la colonna "modello" per avere la misura dell'attuatore adatto.

UK With reference to the above diagram the torque of a spring return actuator is not constant but decreasing. This is due to the action of the springs that when compressed during air actuation counteract the piston movement and accumulate energy which will be available in a decreasing way during the rotation inversion. The torque given by the actuator is defined by four fundamental values.

Opening rotation

MAD = Actuator torque with unfolded springs
MAC = Actuator torque with compressed springs.

Closing rotation

MMC = Torque with compressed springs.
MMD = Torque with unfolded springs.

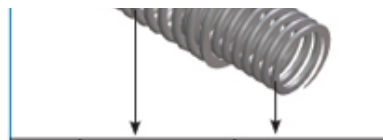
The user can decide on which model to choose according to the specific requirements, using the following guidelines:

1. define the maximum torque of the valve to automate;
2. to obtain a safety factor increase the torque value chosen by 25-50% (subject to the type of valve and working conditions);
3. once the torque value suggested is obtained consult the torque chart (in relation to the corresponding air pressure) to find a torque value exact or similar to (but not lower than) the one obtained, taking account of the lower value between the MMD and MAC values;
4. once the torque value is determined move horizontally to the column "model" to find the actuator model required.

SET DI MOLLE SPRING SETS

STANDARD SET 05





SET	MOLLA ESTERNA EXTERNAL SPRING	MOLLA INTERNA INTERNAL SPRING
01	1	1
02	2	-
03	1	2
04	2	1
05	2	2

MOD	SET	PRESSIONE ALIMENTAZIONE (bar) - AIR SUPPLY PRESSURE (bar)																		
		MOMENTO MOLLE (Nm) SPRING TORQUE (Nm)		2,5		3		4		5		5,5		6		7		8		
		0° MMD	90° MMC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	
SR85	01	16.1	27.3	22.2	7.6	31.3	16.6	49.5	34.8											
	02	19.9	33.7			27.6	10.3	45.7	28.4	63.9	46.6									
	03	24.3	40.8					41.3	21.3	59.4	39.5	68.5	48.6	77.6	57.6					
	04	28.1	47.1					37.5	15.0	55.7	33.1	64.8	42.2	73.8	51.3	92.0	69.4			
	05	36.3	60.6							47.5	19.6	56.6	28.7	65.6	37.8	83.8	55.9	101.9	74.1	

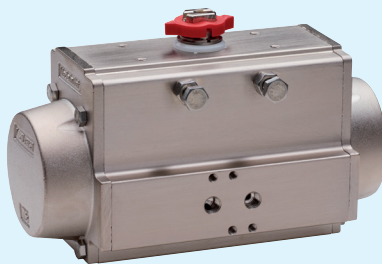
MODELLO TYPE	PRESSIONE DI ALIMENTAZIONE (bar) - AIR SUPPLY PRESSURE (bar)							
	2,5	3	4	5	5,5	6	7	8
	MOMENTO TORCENTE ATTUATORE DOPPIO EFFETTO (Nm) - TORQUE OUTPUT DOUBLE ACTING ACTUATOR (Nm)							
DA 85	41,5	50,5	68,5	87	96	105	123	141

TEMPI DI MANOVRA (SEC) - WORKING TIME (SEC)		
ROTAZIONE ANTIORARIA (DA) COUNTERCLOCKWISE ROTATION (DA)	CCW	0,36
ROTAZIONE ORARIA (DA) CLOCKWISE ROTATION (DA)	CW	0,25
ROTAZIONE ANTIORARIA (SR) COUNTERCLOCKWISE ROTATION (SR)	CCW	0,32
ROTAZIONE ORARIA (SR) CLOCKWISE ROTATION (SR)	CW	0,30

TABELLA PESI - WEIGHT CHART (KG)	
DOPPIO EFFETTO - DOUBLE ACTING	3,90
SEMPLICE EFFETTO - SPRING RETURN	4,80

TABELLA DI CONSUMO D'ARIA ATTUATORI - ACTUATOR AIR CONSUMPTION CHART		Litri: 1 Litro = 1000 cm ³ Litres: 1 Litre = 1000 cm ³
ROTAZIONE ANTIORARIA (DA/SR) COUNTERCLOCKWISE ROTATION (DA/SR)	CCW	0.51
ROTAZIONE ORARIA (DA) CLOCKWISE ROTATION (DA)	CW	0.64

ATTUATORE PNEUMATICO NICHELATO - NICKEL PLATED PNEUMATIC ACTUATOR



ATTUATORE PNEUMATICO NICHELATO - NICKEL PLATED PNEUMATIC ACTUATOR *

MODELLO - MODEL	32	52	63	75	85	100	115	125	140	160	180	200	230	270	330
CODICE - CODE DA	82DA1007	82DA1010	82DA1012	82DA1075	82DA1014	82DA1018	82DA1070	82DA1019	82DA1020	82DA1079	82DA1080	82DA1021	82DA1023	82DA1077	82DA1033
CODICE - CODE SR	-	82SR1010	82SR1012	82SR1075	82SR1014	82SR1018	82SR1070	82SR1019	82SR1020	82SR1079	82SR1080	82SR1021	82SR1023	82SR1077	82SR1033

* Il trattamento comprende tappi e cilindro. Per ulteriori varianti consultare l'ufficio commerciale - The treatment includes caps and cylinder. For any other execution please contact our sales department.

ATTUATORE PNEUMATICO VERNICIATO P.T.F.E. - P.T.F.E. COATED PNEUMATIC ACTUATOR



ATTUATORE PNEUMATICO VERNICIATO P.T.F.E. - P.T.F.E. COATED PNEUMATIC ACTUATOR *

MODELLO - MODEL	32	52	63	75	85	100	115	125	140	160	180	200	230	270	330
CODICE - CODE DA	82DAB607	82DAB610	82DAB612	82DAB675	82DAB614	82DAB618	82DAB670	82DAB619	82DAB620	82DAB679	82DAB680	82DAB621	82DAB623	82DAB677	82DAB633
CODICE - CODE SR	-	82SRB610	82SRB612	82SRB675	82SRB614	82SRB618	82SRB670	82SRB619	82SRB620	82SRB679	82SRB680	82SRB621	82SRB623	82SRB677	82SRB633

* Il trattamento comprende tappi e cilindro. Per ulteriori varianti consultare l'ufficio commerciale - The treatment includes caps and cylinder. For any other execution please contact our sales department.

 Da aggiungere al prezzo base dell'attuatore o del gruppo con valvola.

 To be added to the pneumatic actuator base price or valve + actuator base price.

	32	52	63	75	85	100	115	125	140	160	180	200	230	270	330
CODICE - CODE DA	82DA0407	82DA0410	82DA0412	82DA0475	82DA0414	82DA0418	82DA0470	82DA0419	82DA0420	82DA0479	82DA0480	82DA0421	82DA0423	82DA0477	82DA0433
CODICE - CODE SR	-	82SR0410	82SR0412	82SR0475	82SR0414	82SR0418	82SR0470	82SR0419	82SR0420	82SR0479	82SR0480	82SR0421	82SR0423	82SR0477	82SR0433
CODICE - CODE DA	-	82DA1210	82DA1212	82DA1275	82DA1214	82DA1218	82DA1270	82DA1219	82DA1220	82DA1279	82DA1280	82DA1221	82DA1223	82DA1277	82DA1233
CODICE - CODE SR	-	82SR1210	82SR1212	82SR1275	82SR1214	82SR1218	82SR1270	82SR1219	82SR1220	82SR1279	82SR1280	82SR1221	82SR1223	82SR1277	82SR1233
CODICE - CODE DA	82DA0907	82DA0910	82DA0912	82DA0975	82DA0914	82DA0918	82DA0970	82DA0919	82DA0920	82DA0979	-	-	-	-	-
CODICE - CODE SR	-	82SR0910	82SR0912	82SR0975	82SR0914	82SR0918	82SR0970	82SR0919	82SR0920	82SR0979	-	-	-	-	-
CODICE - CODE DA	-	82DA0610	82DA0612	-	-	-	-	-	-	-	-	-	-	-	-
CODICE - CODE SR	-	82SR0610	82SR0612	-	-	-	-	-	-	-	-	-	-	-	-

Electro-Pneumatic Positioner (Lever type/Rotary type)



IP8000/8100 Series

- **Enclosure:** JISF8007 IP65 (conforms to IEC 60529)
- **Monitoring function** (Opening current transmission 4 to 20 mA DC, Accessory J, JR)
- **Explosion-proof construction/Electro-pneumatic positioner:** TIIS explosion-proof construction (Exd II BT5), ATEX intrinsically safe explosion-proof construction (II 2G Ex ib II CT5/T6)

How to Order

ATEX directive compliance and connection

X14	ATEX directive category 2 Intrinsically safe explosion-proof item Air connection port: 1/4 NPT Conduit connection port: M20 x 1.5 With blue cable gland
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Option Note 10)

Symbol	Option	Applicable model	
		IP8000-X14	IP8100-X14
NII	—	●	●
L	Low temperature (-40 to 60°C)	●	●
W	With internal opening indicator plate	—	●

ATEX Directive Intrinsically Safe Explosion proof

Standard

Type

000	Electro-pneumatic lever type
100	Electro-pneumatic rotary type

Pressure gauge

Symbol	Pressure
0	None
1	0.2 MPa
2	0.3 MPa
3	1.0 MPa

Construction Note 1)

Symbol	Description
0	No terminal box
1	With terminal box (Exsd II BT5) TIIS (Japan) explosion-proof item

CE marking

NII	—
Q	CE marked product

Connection

Symbol	Air	Electric	Applicable model	
			IP8000-0□□□	IP8100-0□□□
NII	Rc1/4	G1/2	●	●
M	Rc1/4	M20 x 1.5	●	—
N	Rc1/4	1/2NPT	●	—
1	1/4NPT	G1/2	●	●
2	1/4NPT	M20 x 1.5	●	—
3	1/4NPT	1/2NPT	●	—
4	G1/4	G1/2	●	●
5	G1/4	M20 x 1.5	●	—
6	G1/4	1/2NPT	●	—

Accessories Note 2)

Symbol	Accessories	Applicable model	
		IP8000	IP8100
NII	None (Standard)	●	●
A	ø0.7 Output restriction with pilot valve Note 3)	●	●
B	ø1.0 Output restriction with pilot valve Note 3)	●	●
C	Fork lever-type fitting M Note 4)	—	●
D	Fork lever-type fitting S Note 5)	—	●
E	For stroke 35 to 100 mm with lever unit Note 6)	●	—
F	For stroke 50 to 140 mm with lever unit Note 6)	●	—
G	Compensation spring (A) Note 7)	●	●
H	With external scale plate Note 8)	—	●
J	With opening current transmission (4 to 20 mA DC)/Positive operation Note 9)	—	●
JR	With opening current transmission (4 to 20 mA DC)/Reverse operation Note 9)	—	●

Note 1) For construction No.1 (with terminal box), the ambient and fluid temperatures are as follows:

- Exd II BT5 — -20 to 60°C
- Non-explosion proof (non hazardous locations only) — -20 to 80°C

The positioner body is Exd II BT5 labeled.

Note 2) If two or more accessories are required, the part numbers should be made according to alphabetical order. (ex. IP8100-010-AG)

Note 3) "A" is applied to approx 90cm³-capacity actuator.
"B" is applied to approx 180cm³-capacity actuator.

Note 4) Fork lever-type fitting MX (Connection thread: M6 x 1) for IP8100-0□□□-X14.
Note 5) Fork lever-type fitting SX (Connection thread: M6 x 1) for IP8100-0□□□-X14.
Note 6) Standard lever is not attached.

Note 7) It is to be used together with "A" or "B" when tending to overshoot by the use of "A" or "B".
It is mounted to the body as a replacement of the standard compensation spring.

Note 8) For side mounting, select a model with internal opening indicator plate (IP8100-0□□□-X318 for standard type, X14-W for ATEX intrinsically safe explosion-proof type).

Note 9) Symbol J/JR is with terminal box, non-explosion proof specification. Select 1 for Construction. Positive operation signifies clockwise rotational direction by the main actuator shaft when positioner cover is viewed from the front.

Note 10) Combination of L and W is not available.