Modello ALI2-P CE

• Motore a magneti permanenti CE

• Doppio riduttore vite senza fine-ruota elicoidale

• Stelo filettato trapezoidale o a ricircolo di sfere VRS **(**)**
• Asta traslante in acciaio cromato
• Lubrificazione permanente a grasso
• IP 65, testato secondo norma CEI EN 60529
• Temperatura di funzionamento -10°C +60°C
• Impiego intermittente S3 30% (5 min) a 30°C*
• Fine corsa, potenziamento ed encoder a richiesta

(*) Per impieghi diversi contattare il Ns. Ufficio Tecnico

(**) Contattare il Ns. Ufficio Tecnico

Model ALI2-P CE

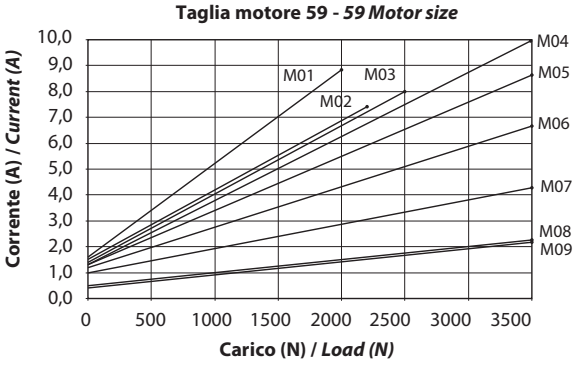
• Permanent magnet motor CE
• Double worm gearbox
• Acme lead screw or ballscrew (VRS)(**)
• Chrome plated steel push rod
• Permanent grease lubrication
• IP 65, tested according to rule CEI EN 60529
• Working temperature range -10°C +60°C
*• Intermittent duty S3 30% (5 min) a 30°C**
• Limit switches, potentiometer and encoder on request

(*) For any special duty please contact our technical dept.

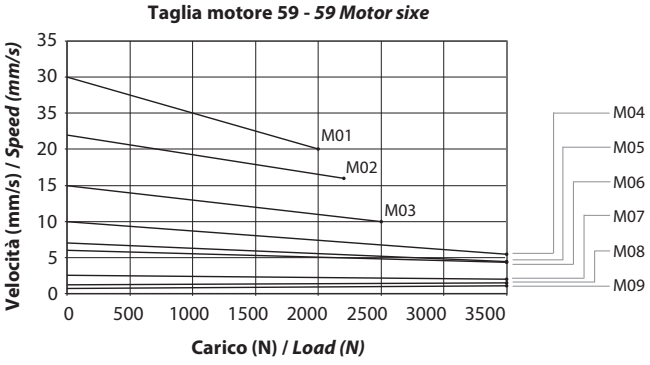
***(**)** Contact our technical dept.*

ALI2-P (Vdc)											
Fmax *Fmax*	**Velocità** *Speed*	**Versione** *Version*	**Taglia motore** *Motor size*	**Giri motore** *Motor speed*	**1° Rid.** *1° Red.*	**2° Rid.** *2° Red.*	**D vite** *Screw D*	**Passo** *Pitch*	**Rendimento** *Efficiency*	**Corsa max (mm)** *Max stroke [mm]*	
(N)	**(mm/s)**			**(rpm)**			**(mm)**	**(mm)**		**ALI2-P-F**	**ALI2-P**
2000	30	M01	59	4000	1:5	1:5	16	12	0.38	690	690
2200	20	M02	59	4000	1:5	1:5	16	8	0.28	580	655
2500	15	M03	59	4000	1:5	1:7	16	8	0.25	580	615
3500	10	M04	59	4000	1:5	1:5	16	4	0.24	290	545
3500	7	M05	59	4000	1:5	1:7	16	4	0.21	290	545
3500	5	M06	59	4000	1:5	1:10	16	4	0.18	290	545
3500	2.5	M07	59	4000	1:5	1:21	16	4	0.18	290	545
3500	1.2	M08	59	4000	1:10	1:21	16	4	0.14	290	545
3500	0.6	M09	59	4000	1:21	1:21	16	4	0.13	290	545

DIAGRAMMI DI CORRENTE - *CURRENT DIAGRAM*



DIAGRAMMI DI VELOCITÀ - *SPEED DIAGRAM*

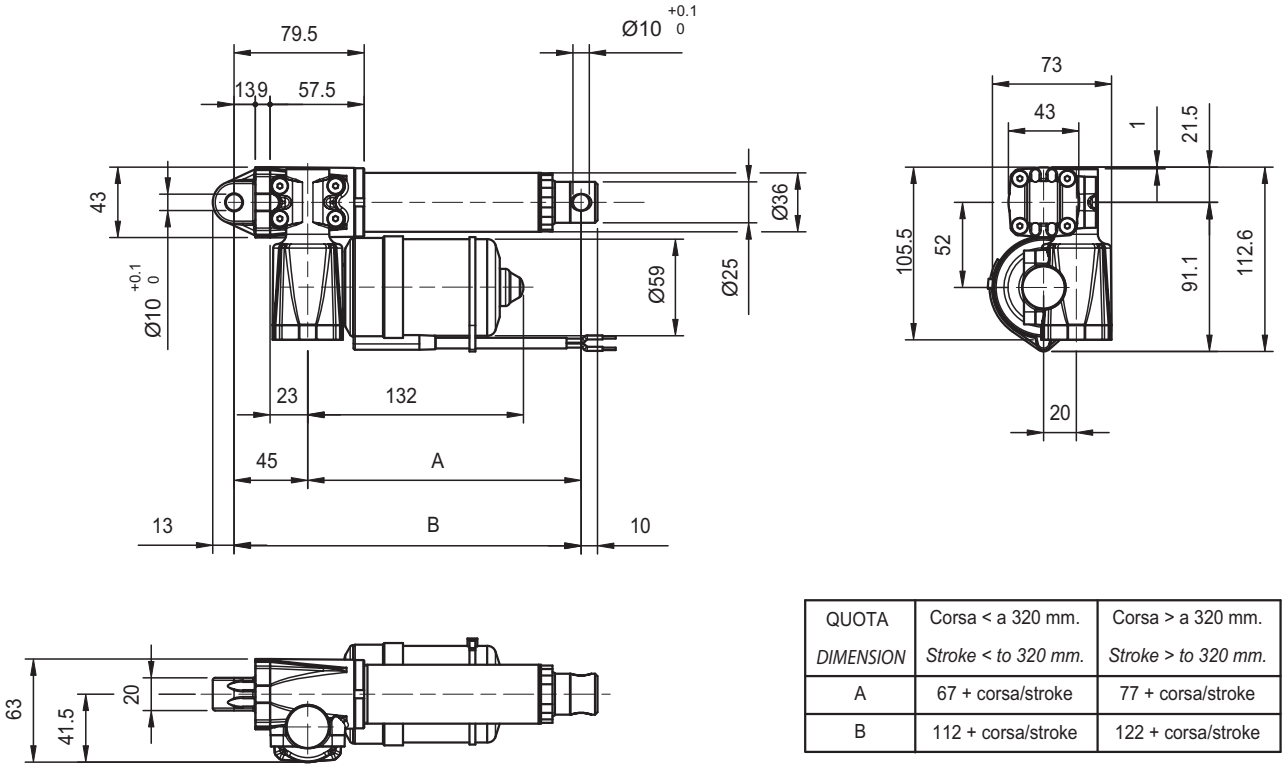


Diagrammi riferiti alla tensione di alimentazione 24Vdc.
Per tensione 12Vdc raddoppiare il valore di corrente e ridurre il valore di carico del 20%. Per tensione 36Vdc ridurre il valore di corrente del 30% e lasciare inalterato il carico.

Diagrams valid for 24Vdc power supply.
For 12Vdc power supply currents are doubled and loads are 20% lower. For 36Vdc power supply currents are 30% lower and loads remain the same.

ATTUATORE SENZA FINE CORSA / *ACTUATOR WITHOUT LIMIT SWITCHES*

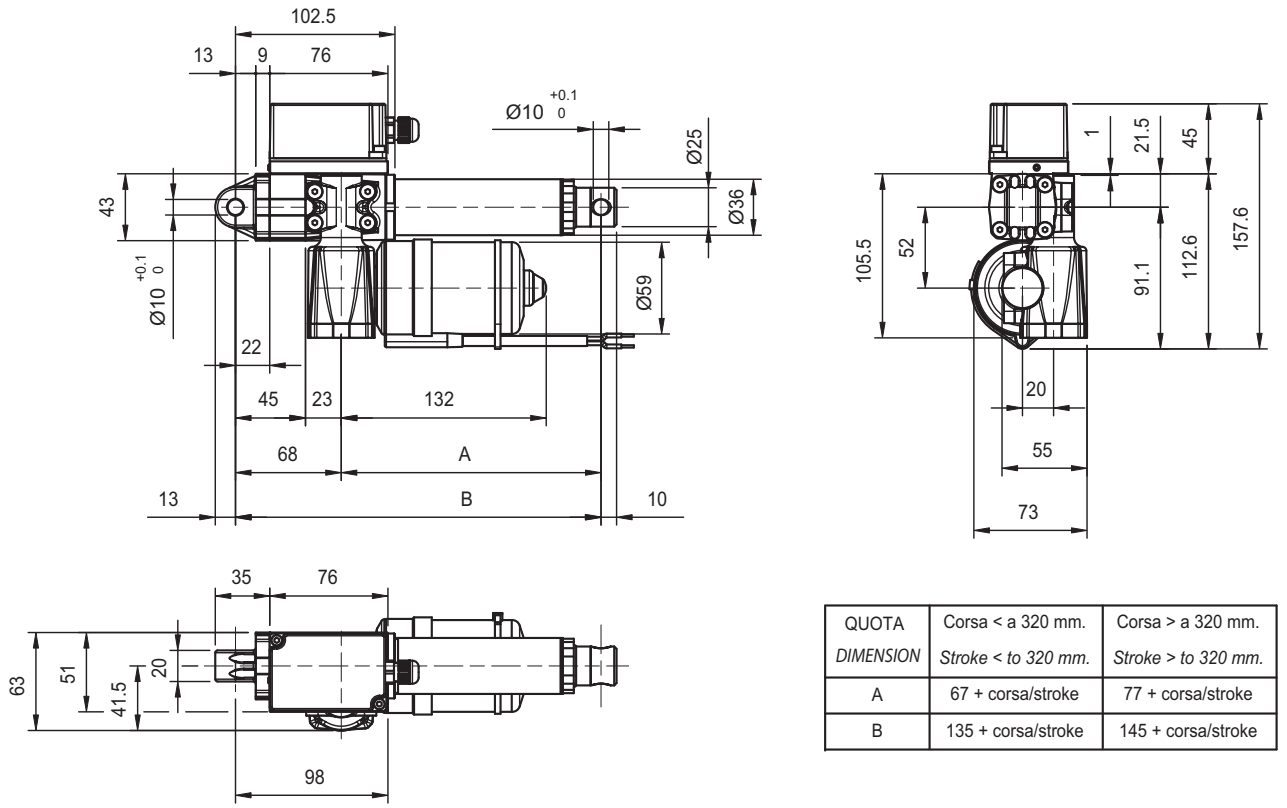
ALI2-P



QUOTA *DIMENSION*	Corsa < a 320 mm. *Stroke < to 320 mm.*	Corsa > a 320 mm. *Stroke > to 320 mm.*
A	67 + corsa/stroke	77 + corsa/stroke
B	112 + corsa/stroke	122 + corsa/stroke

ATTUATORE CON FINE CORSA INTEGRATO / *ACTUATOR WITH INTEGRATED LIMIT SWITCHES*

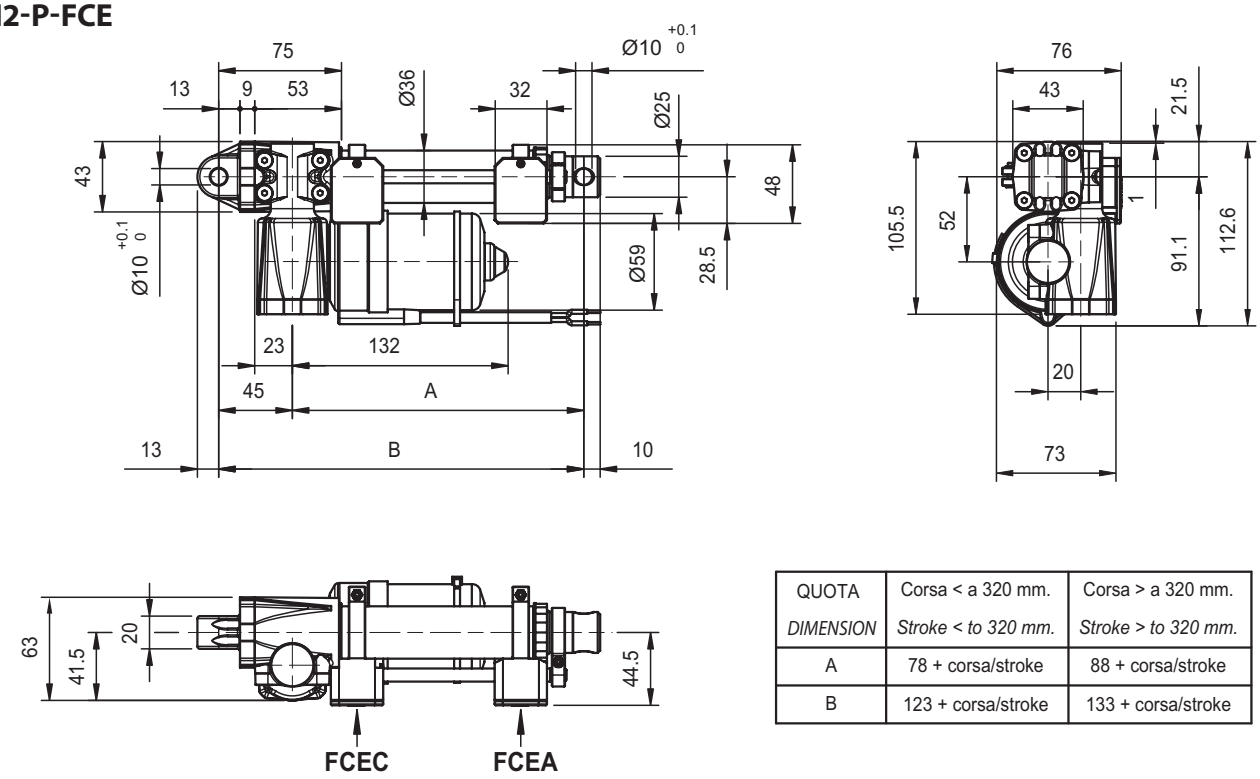
ALI2-PF



QUOTA *DIMENSION*	Corsa < a 320 mm. *Stroke < to 320 mm.*	Corsa > a 320 mm. *Stroke > to 320 mm.*
A	67 + corsa/stroke	77 + corsa/stroke
B	135 + corsa/stroke	145 + corsa/stroke

ATTUATORE CON FINE CORSA ESTERNO / *ACTUATOR WITH EXTERNAL LIMIT SWITCHES*

ALI2-P-FCE



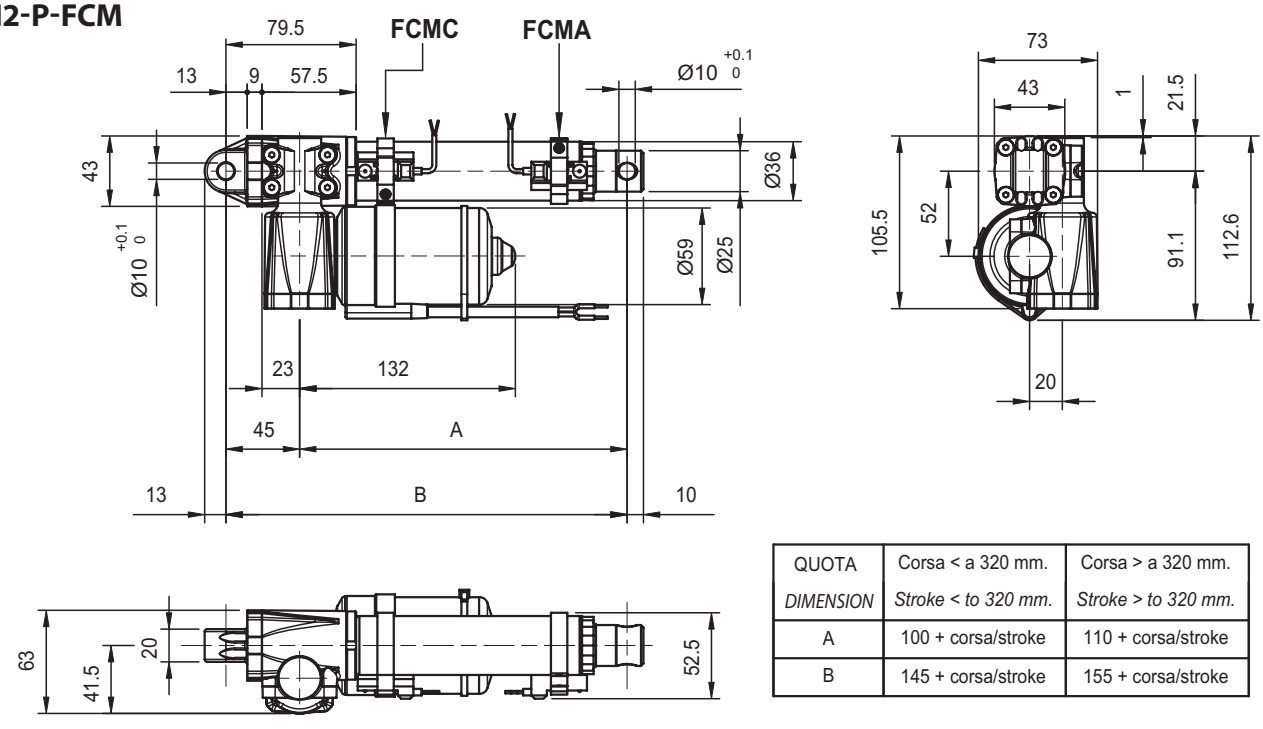
QUOTA *DIMENSION*	Corsa < a 320 mm. *Stroke < to 320 mm.*	Corsa > a 320 mm. *Stroke > to 320 mm.*
A	78 + corsa/stroke	88 + corsa/stroke
B	123 + corsa/stroke	133 + corsa/stroke

FCEC = Finecorsa meccanico chiusura
FCEA = Finecorsa meccanico apertura

FCEC *= Closing mechanical switch*
FCEA *= Opening mechanical switch*

ATTUATORE CON FINE CORSA MAGNETICO / *ACTUATOR WITH MAGNETIC LIMIT SWITCHES*

ALI2-P-FCM



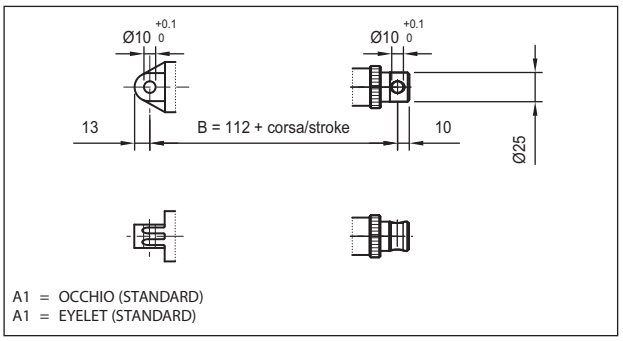
QUOTA *DIMENSION*	Corsa < a 320 mm. *Stroke < to 320 mm.*	Corsa > a 320 mm. *Stroke > to 320 mm.*
A	100 + corsa/stroke	110 + corsa/stroke
B	145 + corsa/stroke	155 + corsa/stroke

FCMC = Finecorsa magnetico chiusura
FCMA = Finecorsa magnetico apertura

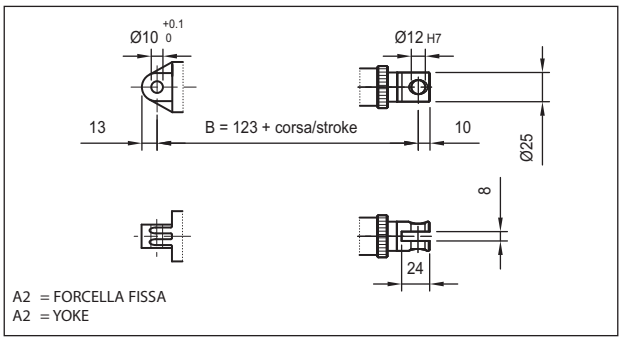
FCMC *= Closing magnetic switch*
FCMA *= Opening magnetic switch*

Attacchi anteriori

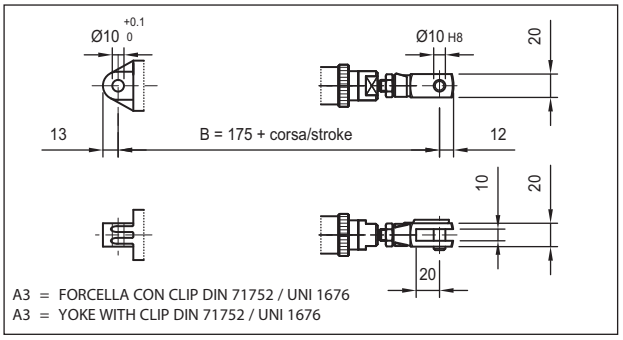
Front ends



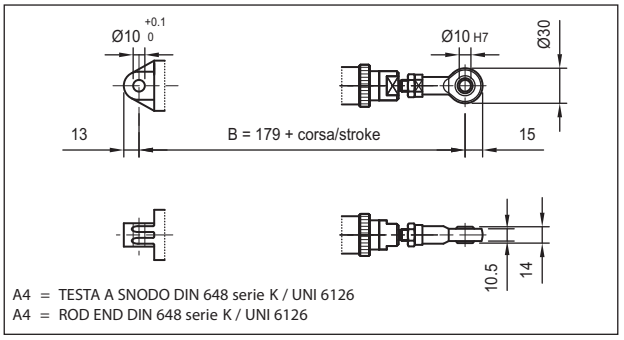
A1 = OCCHIO (STANDARD)
A1 = EYELET (STANDARD)



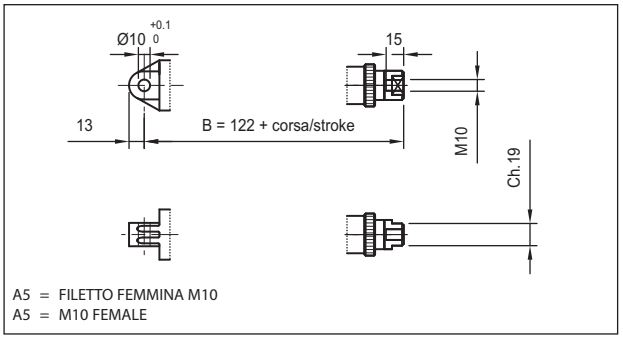
A2 = FORCELLA FISSA
A2 = YOKE



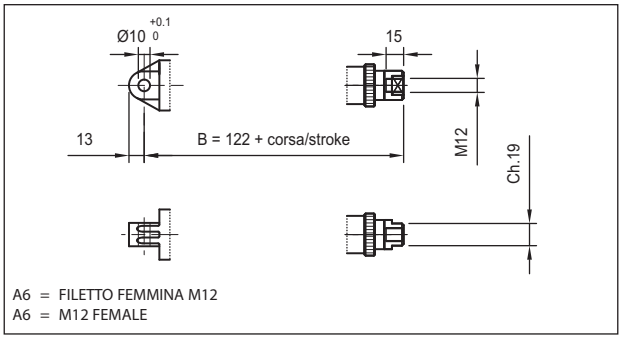
A3 = FORCELLA CON CLIP DIN 71752 / UNI 1676
A3 = YOKE WITH CLIP DIN 71752 / UNI 1676



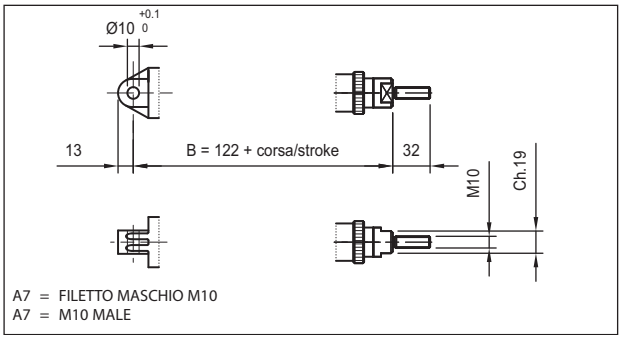
A4 = TESTA A SNODO DIN 648 serie K / UNI 6126
A4 = ROD END DIN 648 serie K / UNI 6126



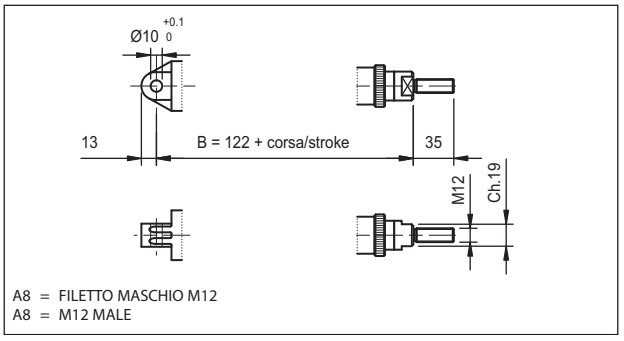
A5 = FILETTO FEMMINA M10
A5 = M10 FEMALE



A6 = FILETTO FEMMINA M12
A6 = M12 FEMALE



A7 = FILETTO MASCHIO M10
A7 = M10 MALE



A8 = FILETTO MASCHIO M12
A8 = M12 MALE

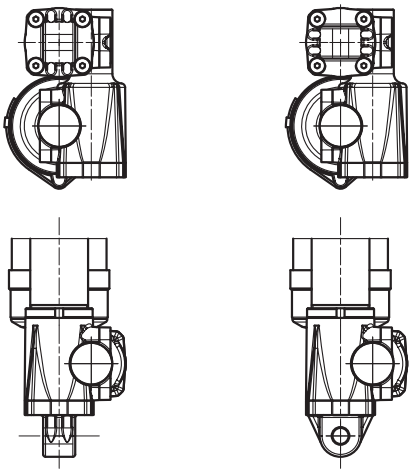
Nota: Variazioni quota "B" in base al modello
Note: *"B" dimension changes according to model*

ALI2-P = vedi figure / *see pictures*
ALI2-P corsa / *stroke* > 320 mm = + 10 mm
ALI2-PF = + 23 mm
ALI2-PF corsa / *stroke* > 320 mm = + 33 mm
ALI2-P-FCE = + 11 mm
ALI2-P-FCE corsa / *stroke* > 320 mm = + 21 mm
ALI2-P-FCM = + 34 mm
ALI2-P-FCM corsa / *stroke* > 320 mm = + 44 mm

Con Chiocciola di sicurezza "G" = + 30 mm / *With safety nut "G" = + 30 mm*

Protezione Soffietto/ *Bellows* + 20mm (escluso versioni FCM e FCE/ *no for versions FCM and FCE*)

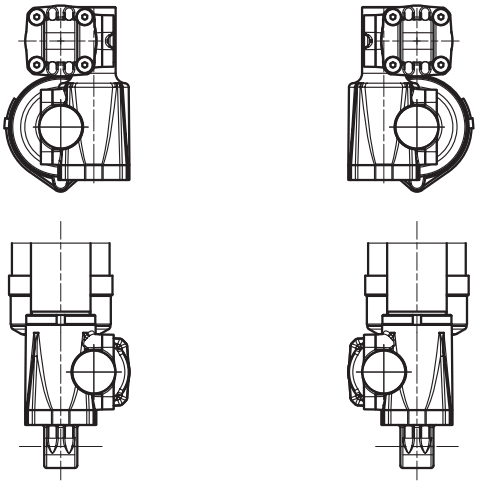
Attacco posteriore / *Rear end*



P1
(Standard)

P2
Ruotato di 90° / *Rotated through 90°*

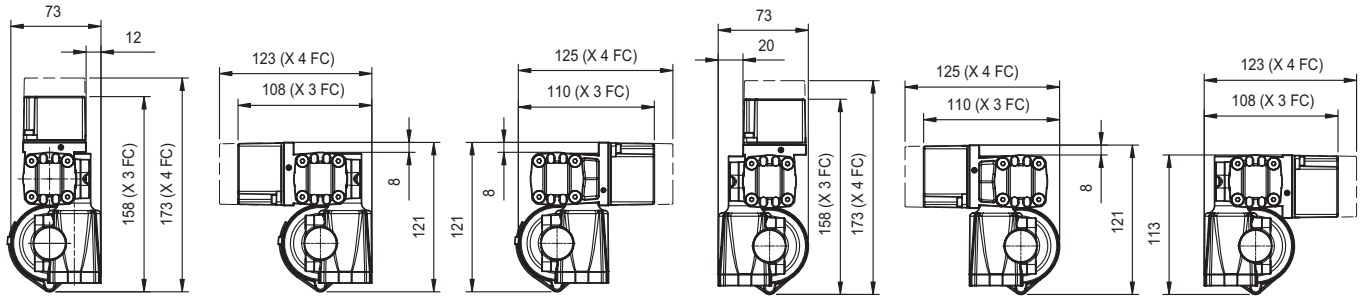
Orientamento motore / *Motor size*



M0

M1

ORIENTAMENTO MOTORE E FINE CORSA / ***MOTOR AND LIMIT SWITCHES POSITION***



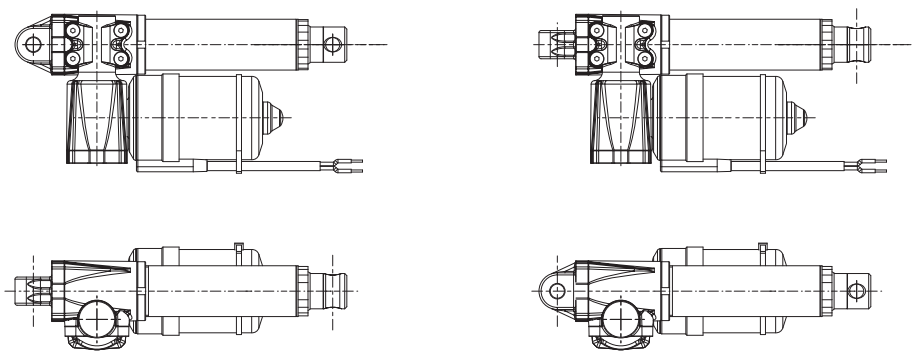
M0 FC1 **M0 FC2** **M0FC3** **M1 FC1** **M1FC2** **M1 FC3**

Dispositivo antirotazione

Nella famiglia ALI2-P è possibile installare un dispositivo antirotazione che vincola le rotazioni dell'asta traslante attorno al proprio asse. Con l'attacco anteriore A1 ed A2 sono disponibili due versioni: AR0 con attacco anteriore e posteriore standard (P1) , AR1 con attacco anteriore e posteriore ruotato di 90° (P2). Nei casi di attacco A3, A4, A5, A6, A7 ed A8 è obbligatorio avere il dispositivo antirotazione. Perde di significato la distinzione tra AR0 e AR1: in questo caso si riporta sempre AR0.

Antirotation device

Model ALI2-P can host an antirotation device, allowing push rod not to spin when travelling. Front ends A1 and A2 allow for two antirotation settings: AR0 with standard front end and back end (P1), AR1 with front end and back end turned through 90° (P2). When using A3, A4, A5, A6, A7 and A8 front ends antirotation facility must always be mounted. The distinction between AR0 and AR1 does not make sense: in this case AR0 is than selected.



AR0 (Standard)

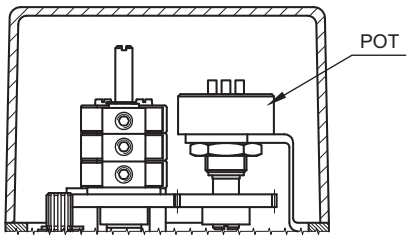
AR1

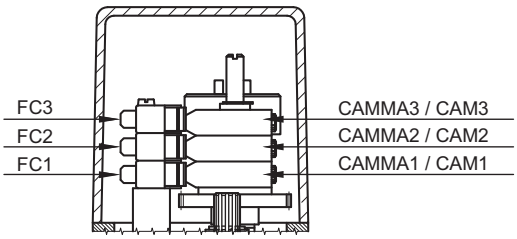
Dispositivi Controllo Corsa Elettrici / Elettronici

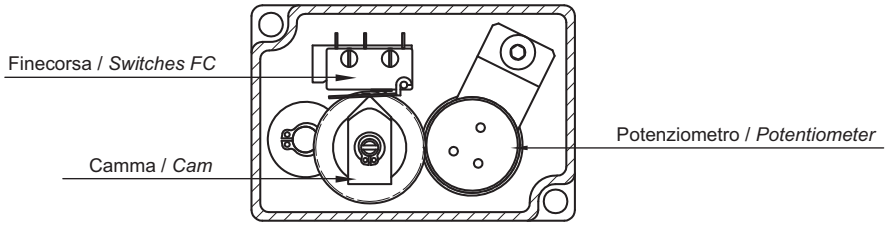
Electric / Electronic Stroke Control Devices

FINE CORSA E POTENZIOMETRI INTEGRATO (ALI2-PF)
Gruppo controllo corsa (fine corsa e potenziometro)

INTEGRATED LIMIT SWITCHES AND POTENTIOMETER (ALI2-PF)
Stroke Control devices Assembly







FC1 - micro inferiore
FC2 - micro centrale
FC3 - micro superiore
CAMMA 1 - camma inferiore
CAMMA 2 - camma centrale
CAMMA 3 - camma superiore
POT - potenziometro

FC 1 - lower microswitch
FC 2 - middle microswitch
FC 3 - upper microswitch
CAM 1 - lower cam
CAM 2 - middle cam
CAM 3 - upper cam
POT - potentiometer

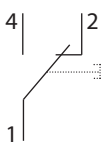
Nota: la combinazione fine corsa + potenziometro dev'essere valutata con il nostro Ufficio Tecnico per corse eccedenti rispetto a quelle riportate sulle tabelle delle prestazioni

Note: *for microswitches + potentiometer versions contact our Technical Dept. in case strokes exceed values mentioned on performance tables.*

Fine corsa - *Limit switches*		
Prestazioni / *Performance*	**Tipo / *Type***	
	XCF	**XGG** (speciale a richiesta - *on request*)
Tensione / *Voltage*	250 Vac	230 Vac / 30 Vdc
Carico resistivo / *Resistive load*	10 A	16 A
Carico motore / *Motor load*	2 A	6 A

Caratteristiche tecniche micro

Le caratteristiche dei microinterruttori di finecorsa montati sono le seguenti:
- Alloggiamento: resina fenolica / melaminica termosaldata
- Meccanismo: azione a scatto con molla in bronzo / berillio. Un contatto in scambio NC/NO

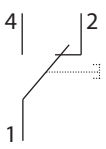


- Contatti: argento
- Terminali: dorati
- Vita meccanica: $3x10^5$ (XGG) azionamenti non impulsivi.

Switches technical features

Limit Switches Features

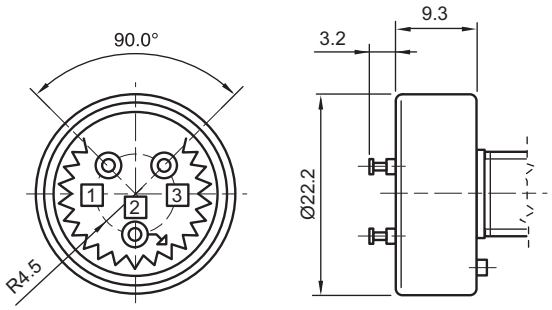
- *Housing:* *Phoenolic-melamine thermosetting*
- *Mechanism:* *Snap-action coil spring mechanism with beryllium / bronze spring. Changeover contact, normally-closed / normally-open.*



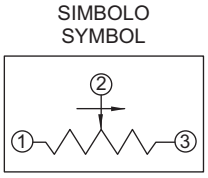
- *Contacts:* *fine silver*
- *Terminals:* *gold flashed*
- *Mechanical life:* *$3x10^5$ (XGG) cycles minimum (impact free actuation).*

Potenziometro rotativo - *Spinning potentiometer*	
Prestazioni / *Performances*	**Tipo / *Type* (A)**
Angolo max. di lavoro / *Max. angle*	340° ± 3°
Resistenza Ohm / *Resistance*	1K / 5K / 10K (standard)
Alimentazione consigliata / *Voltage*	MAX 10 V
Linearità indipendente / *Indipendent linearity*	± 2%
Tolleranza / *Tolerance*	± 20%
Coefficente deriva termica / *Temperature coefficient of resistance*	600 ppm / °C

POTENZIOMETRO "A"



POTENTIOMETER "A"



Fine corsa magnetici FCM - *FCM magnetic Limit switches*			
Prestazioni / *Performance*	**Tipo / *Type***		
	Reed NC	**Reed NO**	**PNP**
Tensione in DC / *DC voltage*	3 / 110 V	3 / 30 V	6 / 30 V
Tensione in AC / *AC voltage*	3 / 110 V	3 / 30 V	/
Corrente a 25°C / *25°C Current*	0,5 A	0,1 A	0,20 A
Potenza / *Power*	20 VA	6 VA	4 W
Cavo alimentazione / *Supply cable*	PVC 2 x 0,14 mm	PVC 2 x 0,14 mm	PVC 3 x 0,14 mm
Lunghezza cavo / *Cablelenght*		2500 mm	
Protezione / *Protection*		IP67	

Circuito Reed NC
Circuito con ampolla Reed normalmente chiusa protetta da varistore contro le sovratensioni generate all'apertura del circuito, e sistema di visualizzazione a LED.

Circuito PNP
Circuito con effetto di Hall con uscita PNP.
Protetto contro l'inversione di polarità e contro picchi di sovratensione.
Sistema di visualizzazione a LED.

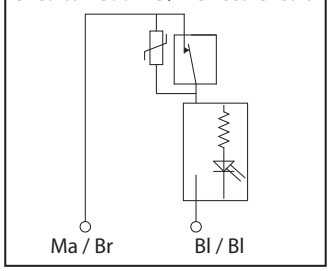
Circuito Reed NO
Circuito con ampolla Reed normalmente aperta, protetta da varistore contro le sovratensioni generate all'apertura del circuito, e sistema di visualizzazione a LED.

Circuit Redd NC
Circuit with normally closed Reed switch protected by a varistor against overvoltages caused when switching off, with LED indicator.

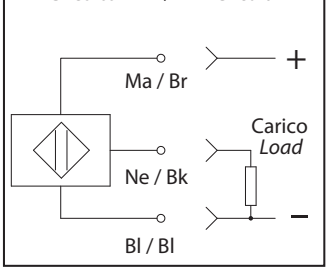
Circuit PNP
Circuit with Hall-effect switch and PNP outlet.
Protected against overvoltage spikes and reverse of polarity.
With LED indicator.

Circuit Redd NO
Circuit with normally open Reed switch protected by a varistor against overvoltages caused when switching off, with LED indicator.

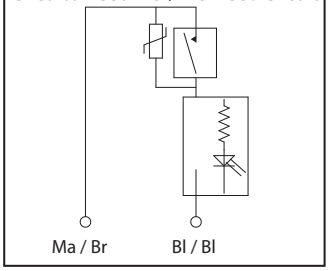
Circuito Redd NC / *NC Reed Circuit*



Circuito PNP / *PNP Circuit*



Circuito Reed NO / NO Reed *Circuit*



ENCODER

Encoder su motori CC

- Alimentazione Encoder 3,8 V....24Vdc (cavi marrone / bianco)
- NPN open collector
- 2 canali - 1 impulsi/giro onda quadra
- Corrente massima d'uscita: 100 mA

ENCODER

Encoder mounted on DC motors

- *Encoder Power Supply 3,8 V....24Vdc (brown / white cables)*
- *NPN open collector*
- *2 CH - 1 ppr square wave*
- *Maximum output current: 100 mA*

Encoder su motori CA

Encoder incrementale bidirezionale con (standard) e senza impulso di zero IP54.

Impulsi giro disponibili: 50 / 100 / 200 / 400 / 500 / 512 /1000 / **1024 (standard)**

Circuiti d'uscita disponibili: Line Drive 5 Vdc (standard) Push Pull 24 Vdc / Open Collector NPN 10 -30 Vdc / Open Collector PNP 10 - 30 Vdc.

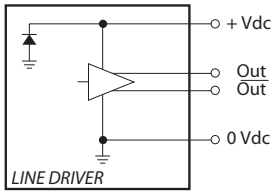
Encoder mounted on AC motors

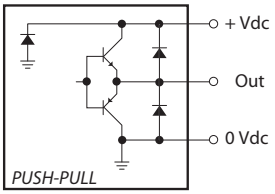
Bidirectional incremental encoder, *with (standard) or without zero-pulse, protection IP54.*

Available ppr: *50 / 100 / 200 / 400 / 500 / 512 / 1000 /* ***1024 (standard)***

Available output circuits: Line Drive 5 Vdc (standard) *Push Pull 24 Vdc / Open Collector NPN 10 -30 Vdc / OpenCollector PNP 10 -30 Vdc.*

Rosso / *Red*	÷Vdc
Nero / *Black*	0 Vdc
Ver de / *Green*	A
Giallo / *Yellow*	B
Blu / *Blue*	Z
Marrone / *Brown*	-A
Arancione / *Orange*	-B
Bianco / *White*	-Z





RIFERIMENTO SIGLA D'ORDINAZIONE

Fine Corsa Meccanici:

2FC1 = 2 Micro XCF
3FC1 = 3 Micro XCF
4FC1 = 4 Micro XCF
2FC2 = 2 Micro XGG (versione standard)
3FC2 = 3 Micro XGG (versione standard)

2FCD2 = 2 Micro XGG cablati con diodi
3FCD2 = 3 Micro XGG di cui 2 cablati con diodi
(solo per motori DC e per carichi fino a 6A di assorbimento)

Fine Corsa Magnetici:

2FCM0 = 2 Sensori circuito Reed NC
(versione standard in assenza di indicazioni)
2FCM1 = 2 Sensori circuito Reed NO
2FCM2 = 2 Sensori *PNP*
3FCM0 = 3 Sensori circuito Reed NC
(versione standard in assenza di indicazioni)
3FCM1 = 3 Sensori circuito Reed NO
3FCM2 = 3 Sensori *PNP*

Potenziometri:

POT01A = 1 k Ohm
POT05A = 5 k Ohm
POT10A = 10 k Ohm

Encoder:

E01 = Encoder 2 canali 1 ppr NPN
E13 = Encoder non contemplato (indicare caratteristiche nel disegno d'assieme)

ORDERING KEY REFERENCES

Mechanical limit switches:

2FC1 = 2 Microswitches XCF
3FC1 = 3 Microswitches XCF
4FC1 = 4 Micro XCF
2FC2 = 2 Micro XGG (standard version)
3FC2 = 3 Micro XGG (standard version)

2FCD2 = 2 XGG Microswitches diode-wired
3FCD2 = 3 XGG Microswitches, 2 of them diode-wired
(for DC motor only and for loads up to 6A)

Magnetic limit switches:

2FCM0 = 2 Sensors circuit Reed NC
(standard version without prior information)
2FCM1 = 2 Sensors circuit Reed NO
2FCM2 = 2 Sensors circuit PNP
3FCM0 = 3 Sensors circuit Reed NC
(standard version without prior information)
3FCM1 = 3 Sensors circuit Reed NO
3FCM2 = 3 Sensors PNP

Potentiometers:

POT01A = 1 k Ohm
POT05A = 5 k Ohm
POT10A = 10 k Ohm

Encoder:

E01 = Encoder 2 channel 1 ppr NPN
E13 = Special encoder (advise features in drawing)

SIGLA DI ORDINAZIONE - *ORDERING KEY*

ALI2P / 0250 / M01 / 59-24 / 2FC0 / P0T01A / E01 / M0FC1 / IP65 / AR0 / P1 / A1 / A+B / N.DIS

MODELLO / *MODEL*:
ALI2-P ALI2-PF
ALI2-P-FCE ALI2-P-FCM

CORSA / *STROKE*: mm
es. 250 mm = 0250

VELOCITÀ / *SPEED*: tabella / *table* (Pag. 55)
M01 / M02 / M03 / M04 / M05 / M06 / M07 / M08 / M09
M00 = Velocità non contemplate / *Not standard speed*

MOTORE / *MOTOR*: (disponibile / *available*)
Grandezza / Size: D59
Tensione / Voltage: V12 / 24 / 36

FINE CORSA / *LIMIT SWITCHES*: (Pag. 62)
Senza / *None*: Omettere / *Leave blank*

POTENZIOMETRO / *POTENTIOMETER*: (Pag. 62)
Senza / *None*: Omettere / *Leave blank*

ENCODER / *ENCODER*: (Pag. 62)
Senza / *None*: Omettere / *Leave blank*

ORIENTAMENTO MOTORE E FINE CORSA / *LIMIT SWITCHES POSITION*: (Pag. 59)
Senza / *None*: Omettere / *Leave blank* **M0FC1 / FC2 / FC3** **M1FC1 / FC2 / FC3**

GRADO PROTEZIONE / *PROTECTION CLASS*:
IP65 standard **Altro / *Other***: Specificare / *Advise*

DISPOSITIVO ANTIROTAZIONE / *ANTIROTATION DEVICE*: (Pag. 59)
Senza / *None*: Omettere / *Leave blank* **AR0**: Std **AR1**: 90°

ATTACCO POSTERIORE / *REAR END*: (Pag. 59)
P0 = Senza / *None* **P2** = Occhio / *Eyelet* (90°)
P1 = Occhio / *Eyelet* (standard) **P3** = Attacco a Disegno / *Special (provide drawing)*

ATTACCO ANTERIORE / *FRONT END*: (Pag. 58)
A0 = Senza / *None* **A4** = Testa a Snodo / *Rod end* **A8** = Maschio M12 / *M12 male*
A1 = Occhio / *Eyelet* (Std) **A5** = Femmina M10 / *M10 female* **A9** = Attacco a Disegno / *Special (provide drawing)*
A2 = Forcella Fissa / *Yoke* **A6** = Femmina M12 / *M12 female*
A3 = Forcella + Clip / *Yoke + Clip* **A7** = Maschio M10 / *M10 male*

OPZIONI / *OPTIONS*:
Senza / *None*: Omettere / *Leave blank* **A** = Versione Inox (asta, attacco anteriore) / *Stainless steel version (rod, front end)*
C = Vite Scoperta / *Naked Screw* **D** = Ruota in Bronzo / Bronze wheel **B** = Protezione soffietto / *Bellows*
FF = Verniciatura Ferromicacea (blu standard)/ Standard Painting
FA = Verniciatura Antirombo / Painting (milder but more elestic than the standard painting)
FM = Verniciatura Marina (5 strati) / Marine type Painting (5 layers)
G = Chiocciola di sicurezza (brevettata) / *Safety nut (patented)* **T** = Albero opposto motore / *Additional shaft (opposite to motorside)*
L = Antirotazione / *Anti-rotation device*

VARIANTI / *VERSIONS*:
N° Disegno / *Drawing number*: Per Condizioni non Contemplate / *Presence of not standard options*
Senza / *None*: Omettere / *Leave blank*

NOTE ***NOTES***