



Fagor Automation S. Coop.

Manual code: 14460076

Manual version: 1405

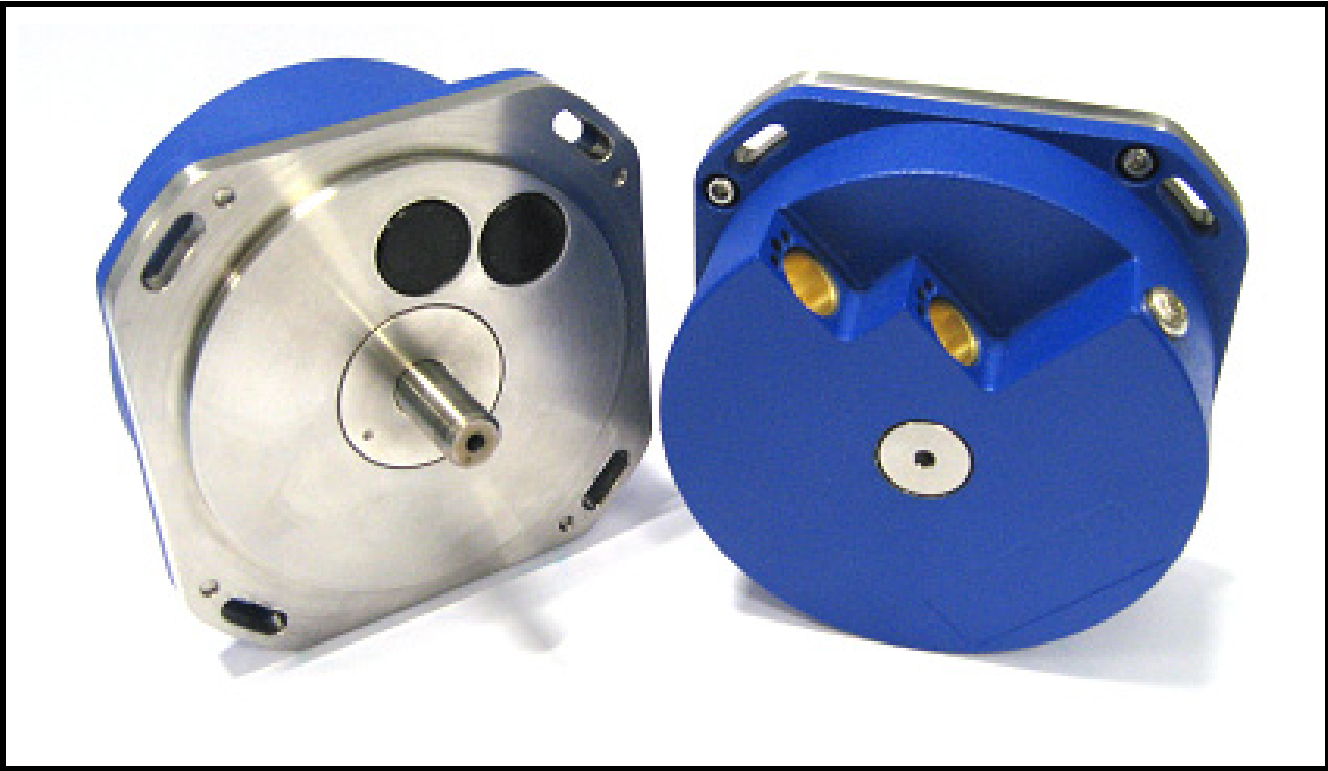
ENCODER S-D90

Dual output / Doble salida

MANUAL DE INSTALACIÓN

INSTALLATION MANUAL

Modelos Models	Impulsos/vuelta Pulses/turn	Señal Signal	Impulso de referencia Reference mark
SP-18000-1024-D90	18 000	1 Vpp sinusoidal	1
SOP-18000-1024-D90			Codificado Distance coded
S-18000-1024-D90	18 000	TTL	1
SO-18000-1024-D90			Codificado Distance coded
S-90000-1024-D90	90 000		1
SO-90000-1024-D90			Codificado Distance coded



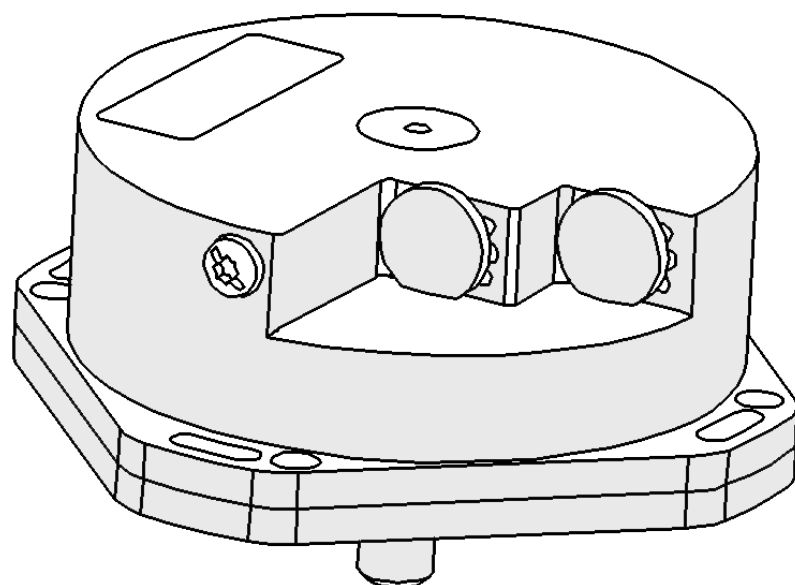
FAGOR AUTOMATION S. COOP.

B^a San Andrés Nº 19
Apdo de correos 144
20500 Arrasate/Mondragón
- Spain -

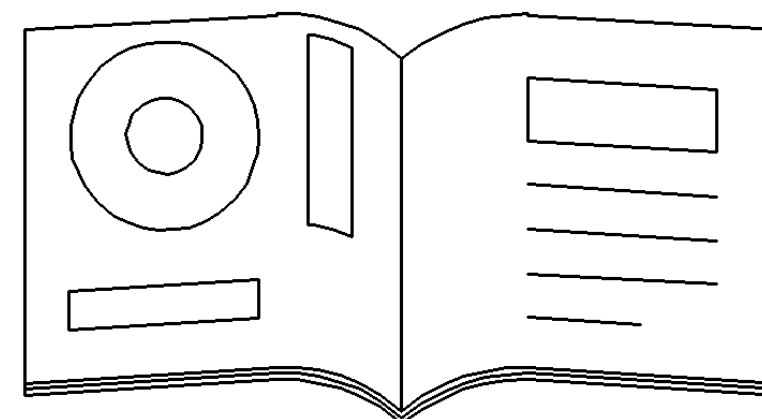
Web: www.fagorautomation.com
Email: info@fagorautomation.es
Tel.: (34) 943 719200
Fax: (34) 943 791712



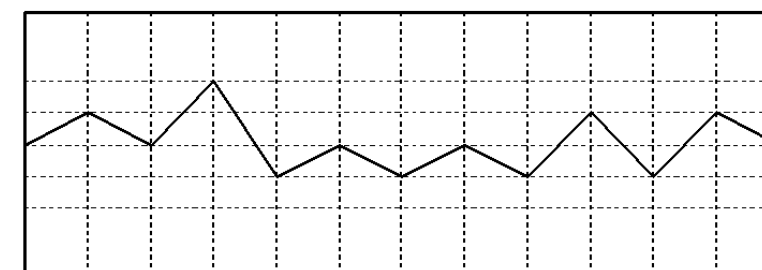
Fagor Automation S. Coop.



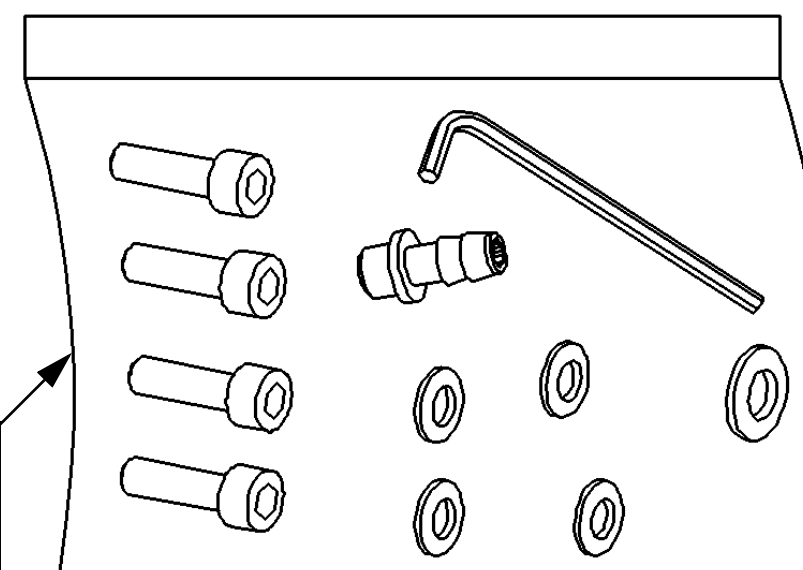
MANUAL



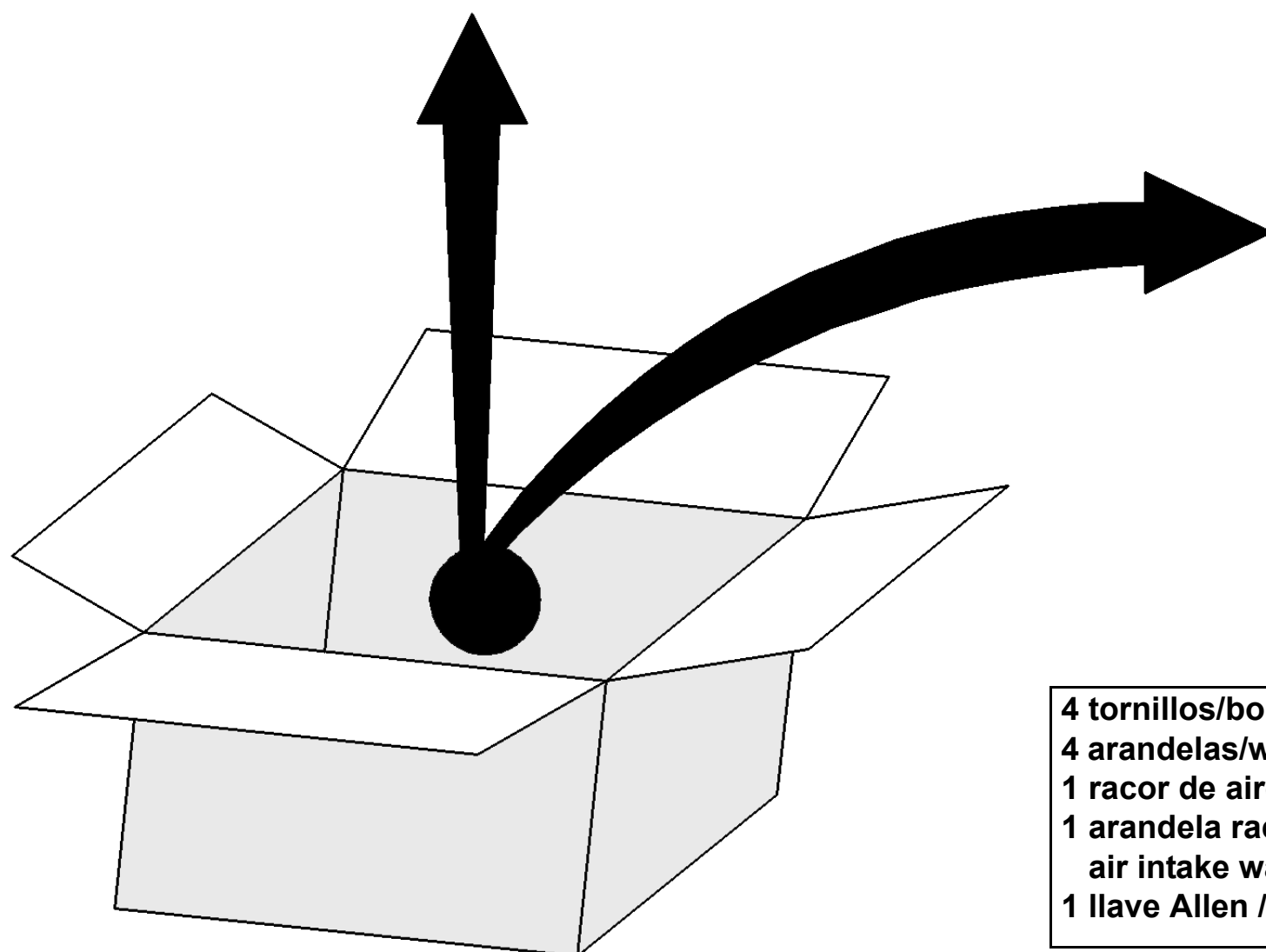
**GRÁFICO
GRAPH**



**ACCESORIOS
ACCESSORIES**

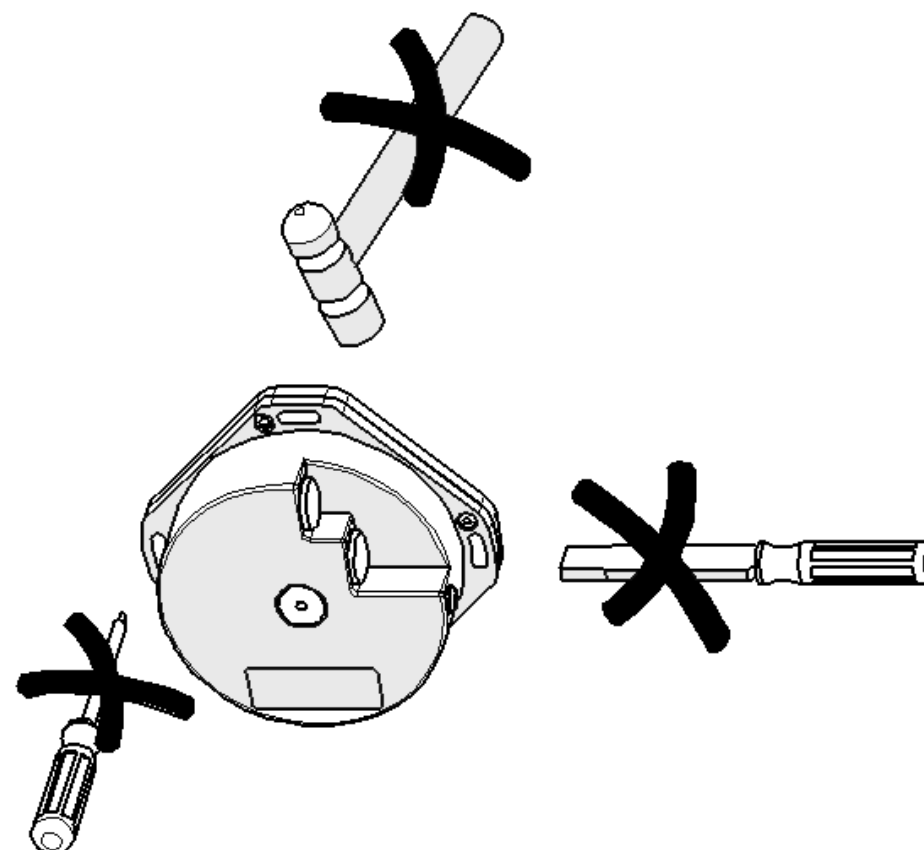
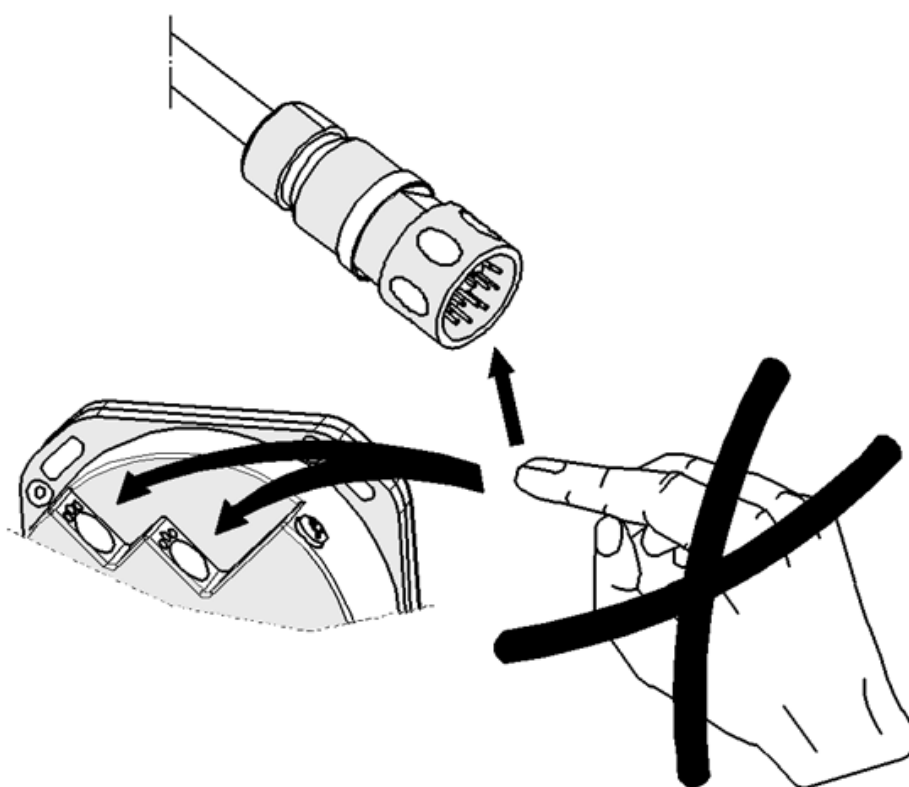
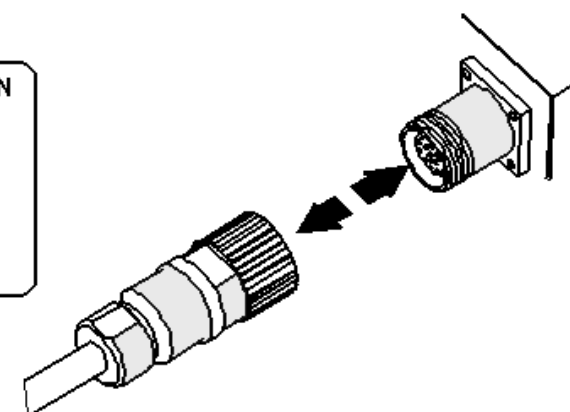
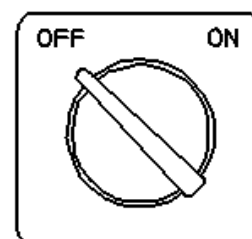
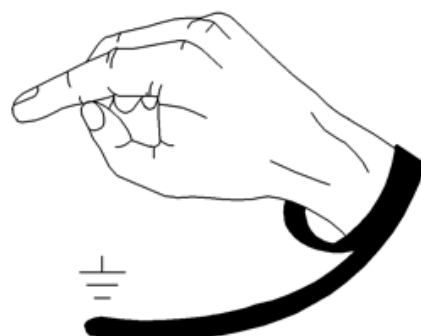


4 tornillos/bolts M4 x 16 DIN 912
4 arandelas/washers M4 DIN 125
1 racor de aire / air intake
1 arandela racor de aire /
air intake washer
1 llave Allen / Allen wrench

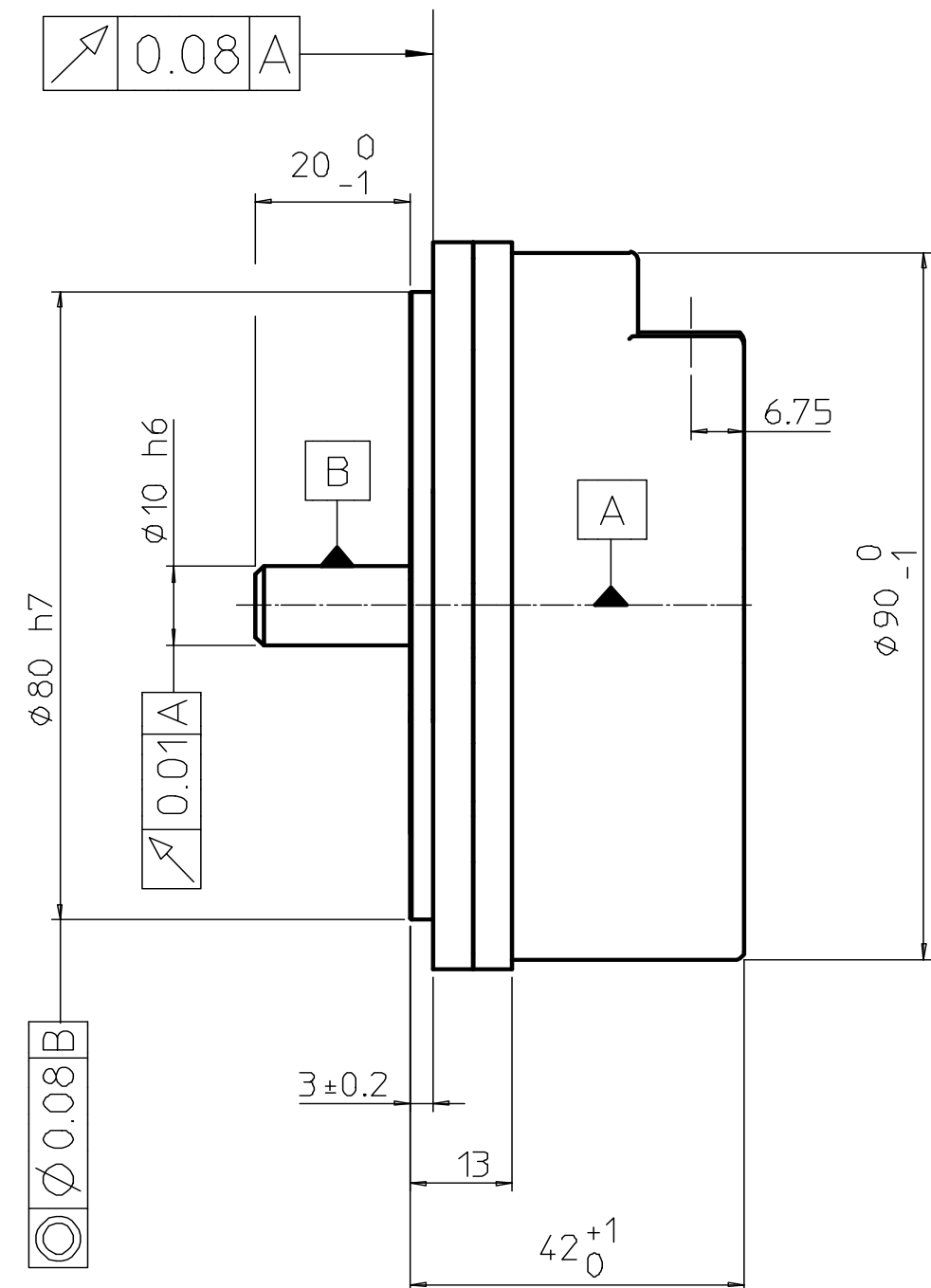
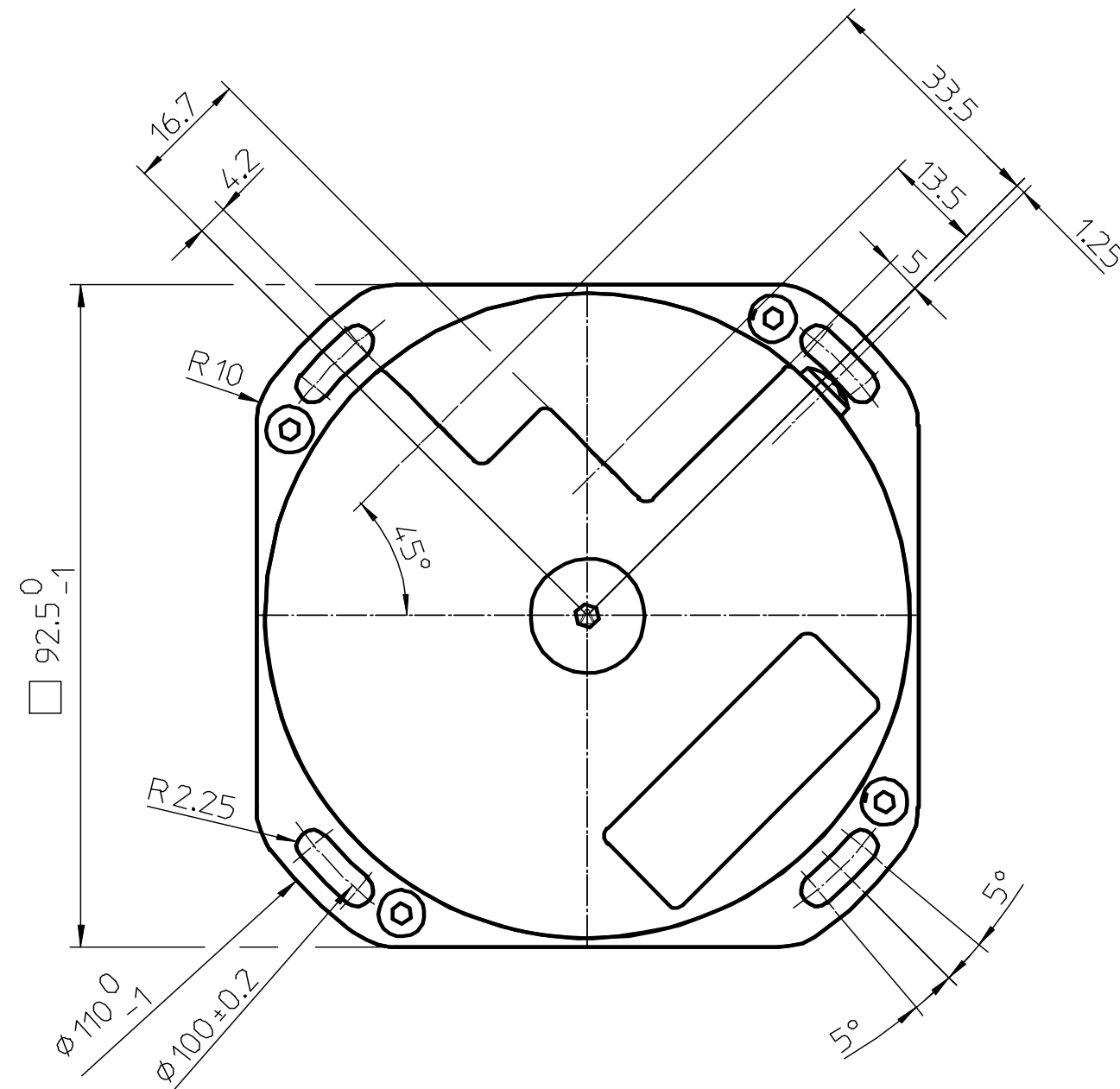




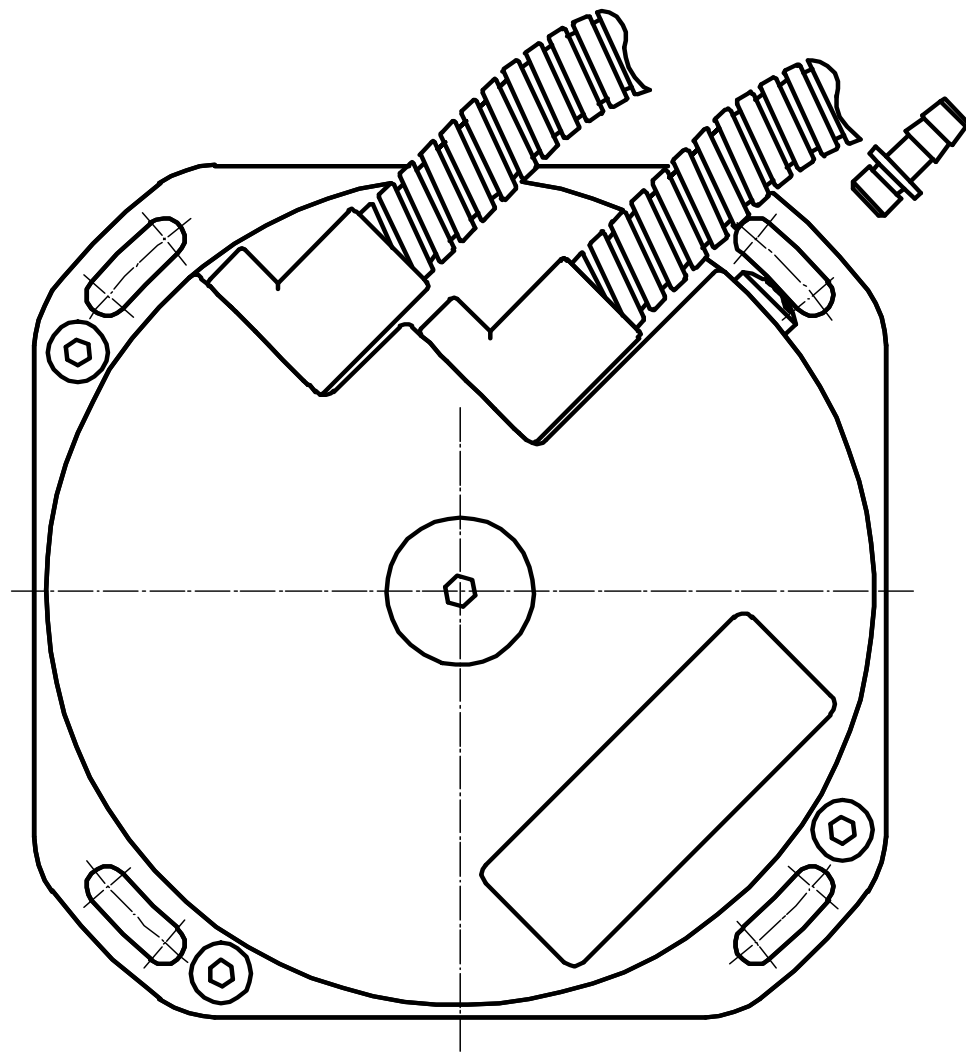
DIN EN 100



GENERAL DIMENSIONS



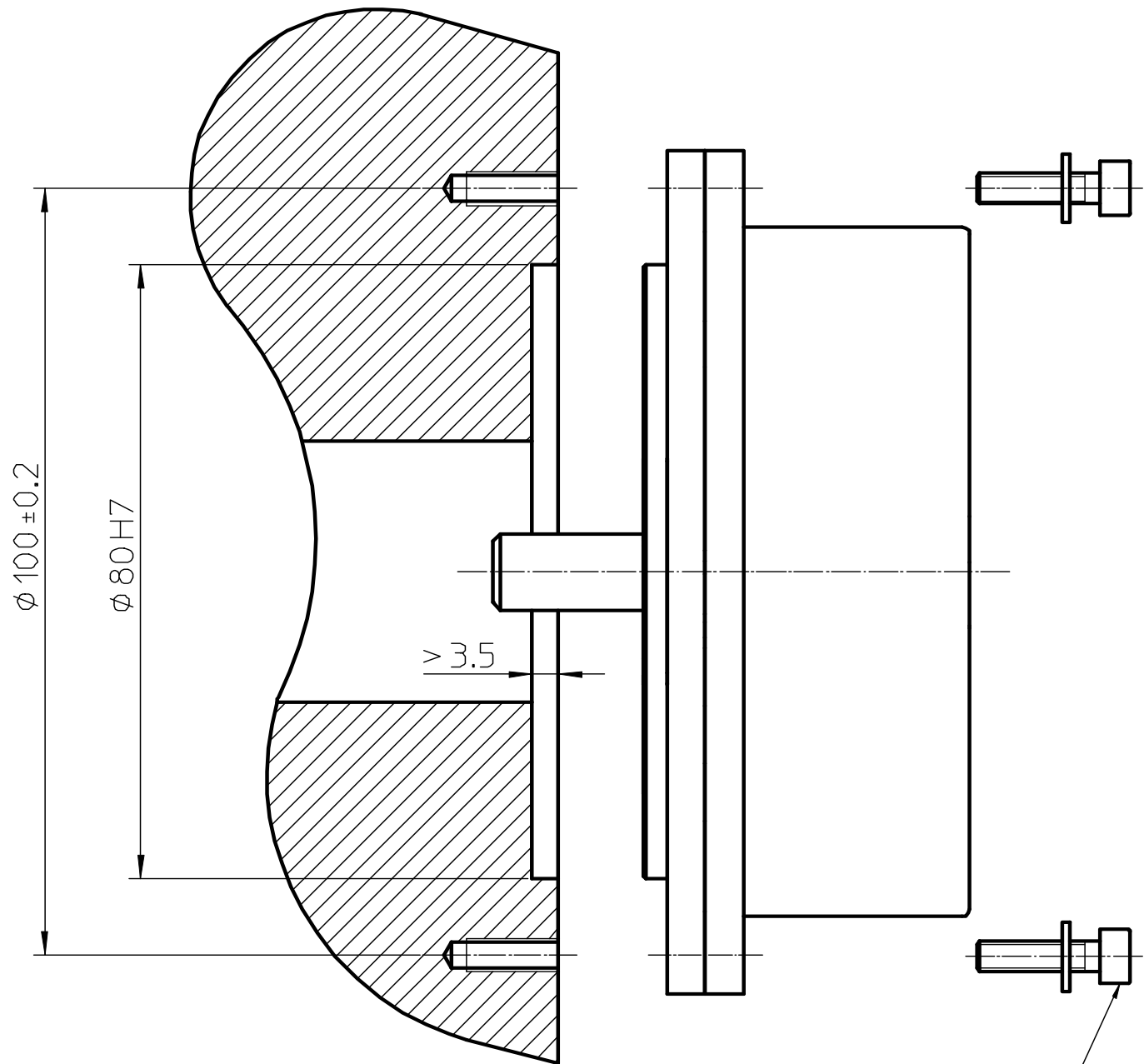
MONTAJE / MOUNTING



Dimensions in mm.

Tolerance ISO 8015
ISO 2768 - m H

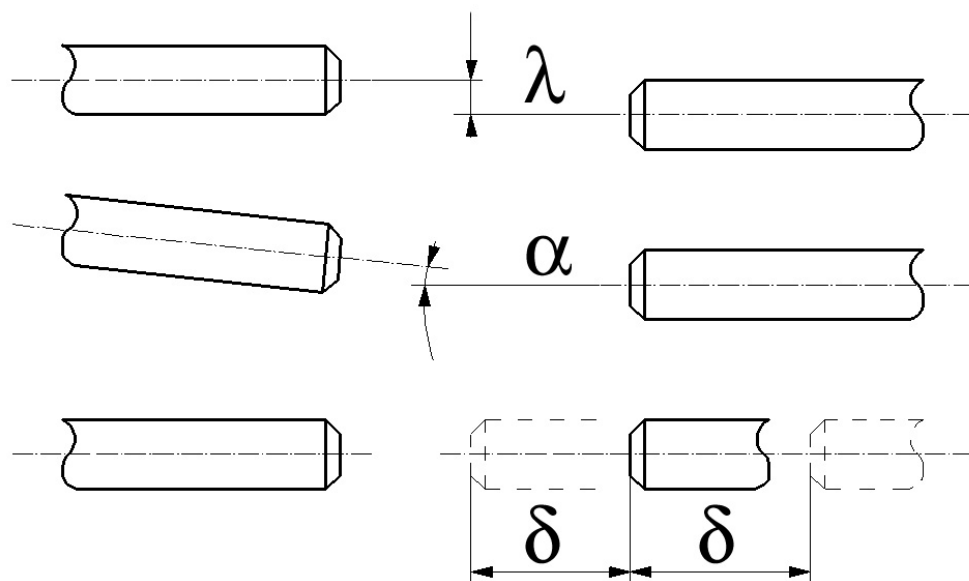
Cotas de montaje / Mounting dimensions



DIN 912 - M4x16
Par de apriete 2,5 Nm
Tightening torque 2.5 Nm

MONTAJE / MOUNTING

Acoplamiento / Coupling



Error cinemático de transferencia:

Kinematic error of transfer:

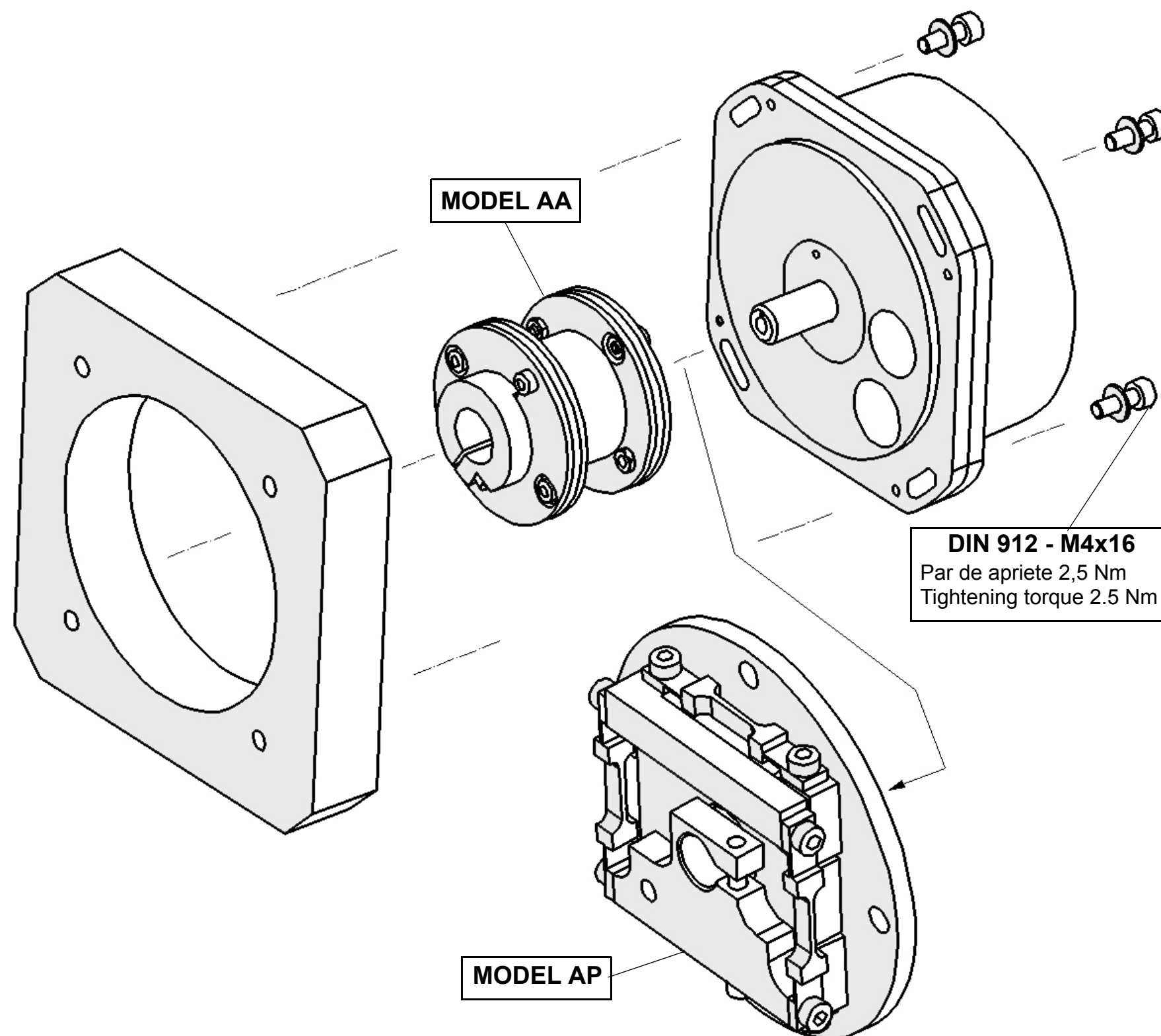
Model AA: $\pm 2''$ at $\lambda \leq 0.1 \text{ mm}$ & $\alpha \leq 0.09^\circ$

Model AP: $\pm 3''$ at $\lambda \leq 0.1 \text{ mm}$ & $\alpha \leq 0.09^\circ$

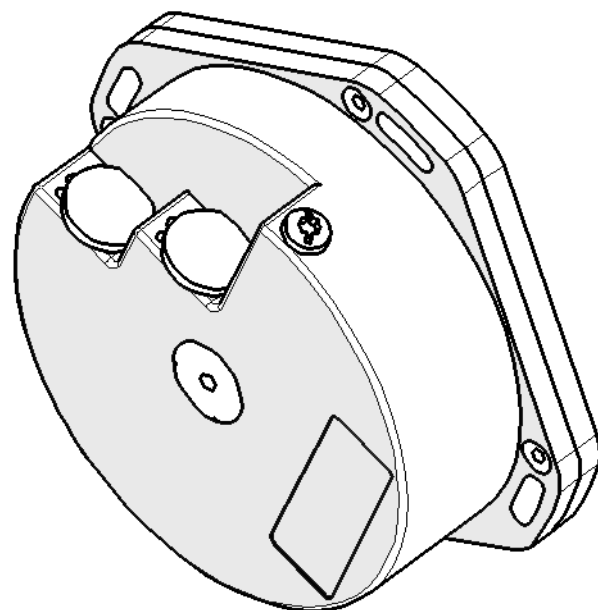
λ max.: 0.3 mm

α max.: 0.5°

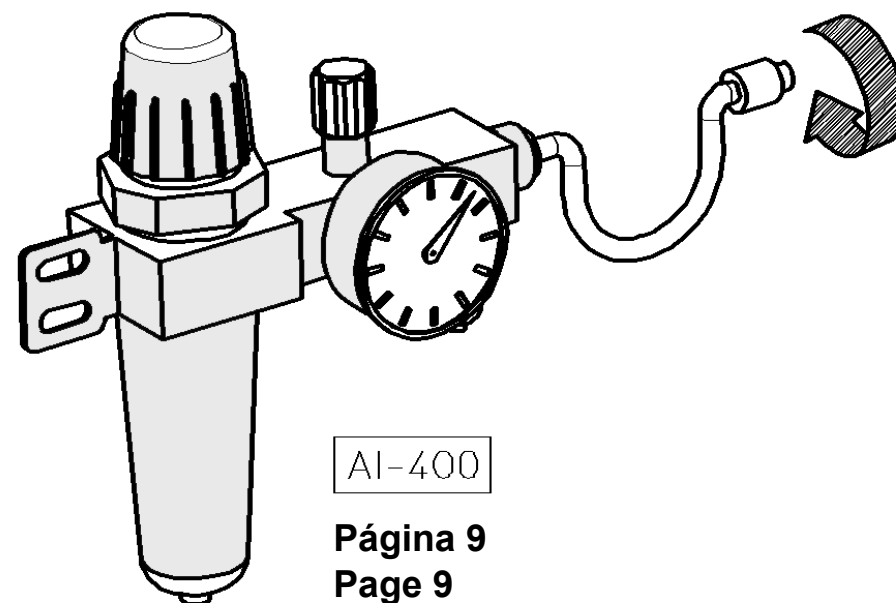
δ max.: 0.2 mm



Nivel máximo: IP 64
Maximum level IP 64



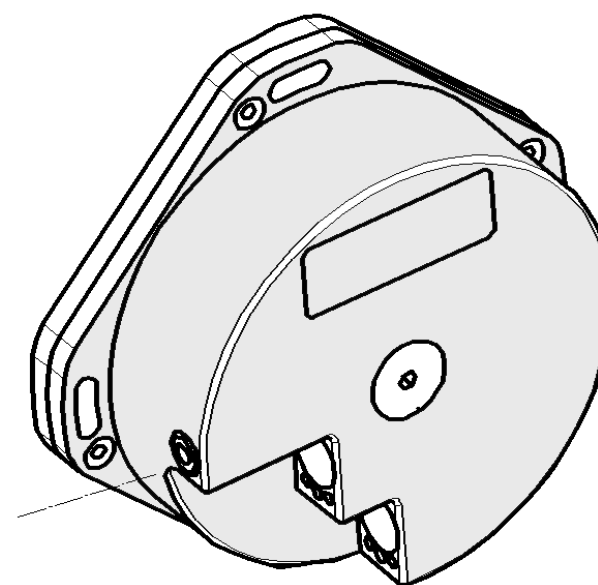
> IP 64



AI-400

Página 9
 Page 9

(A)

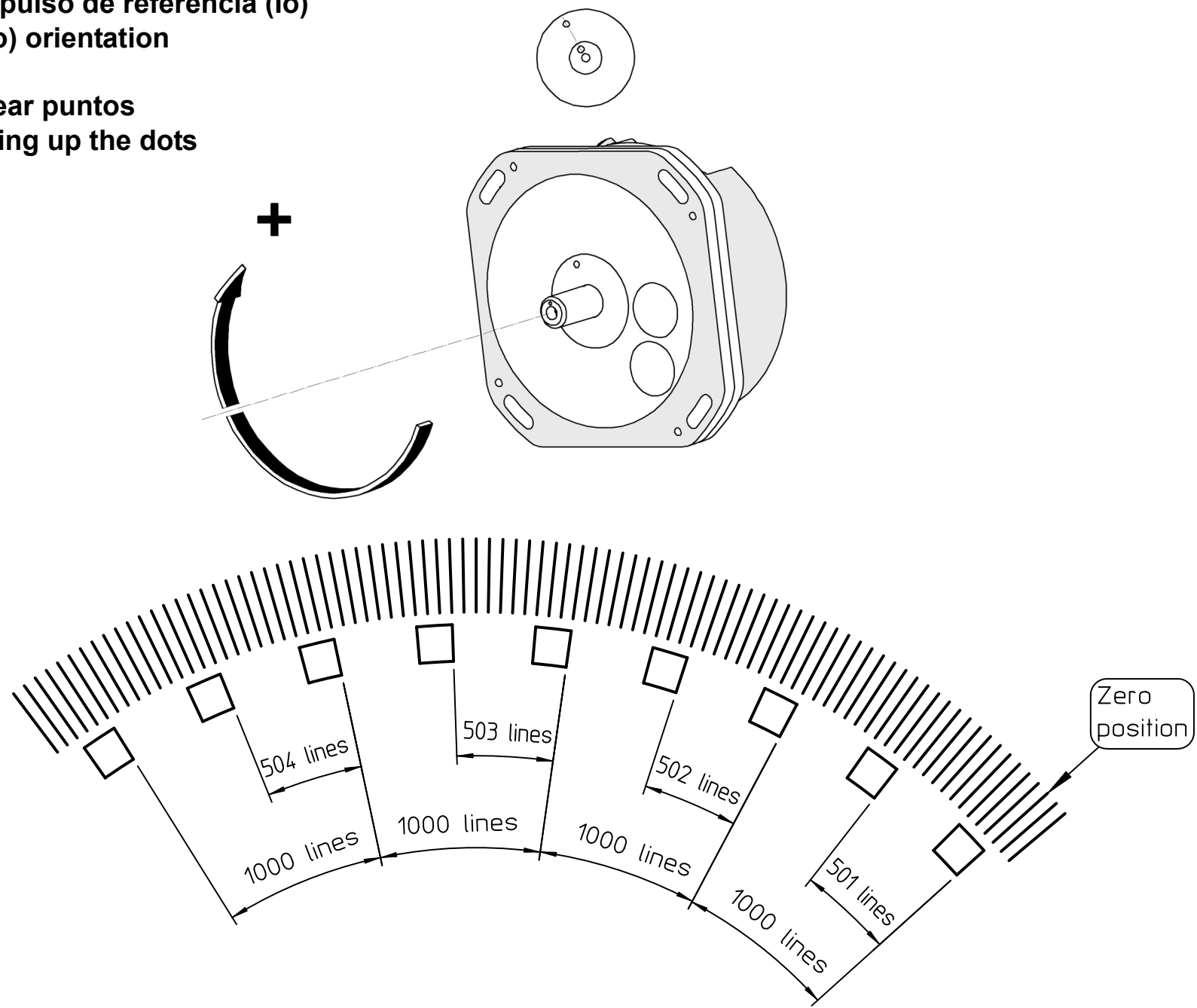


(A) AIR CONDITIONS	
DIN ISO 8573 -1	
Class 1 - Particule Max. 0.1 µ	
Class 4 (7 bar) - Punto rocío / dewpoint 3 °C	
Class 1 - Max. Concentration oil 0.01 mg/m3	
Presión / Pressure	1 Kg / cm3
Flujo / Flow	10 l. / min. / encoder

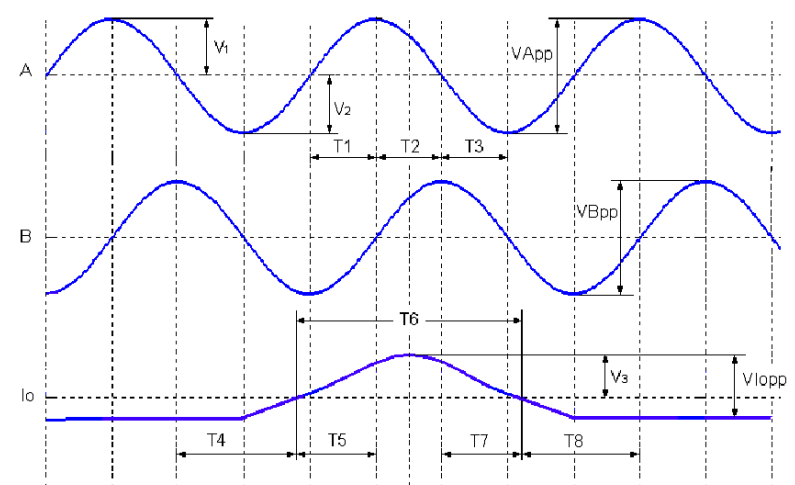
CARACTERÍSTICAS ELÉCTRICAS / ELECTRICAL CHARACTERISTICS

Orientación del impulso de referencia (I_o)
Reference mark (I_o) orientation

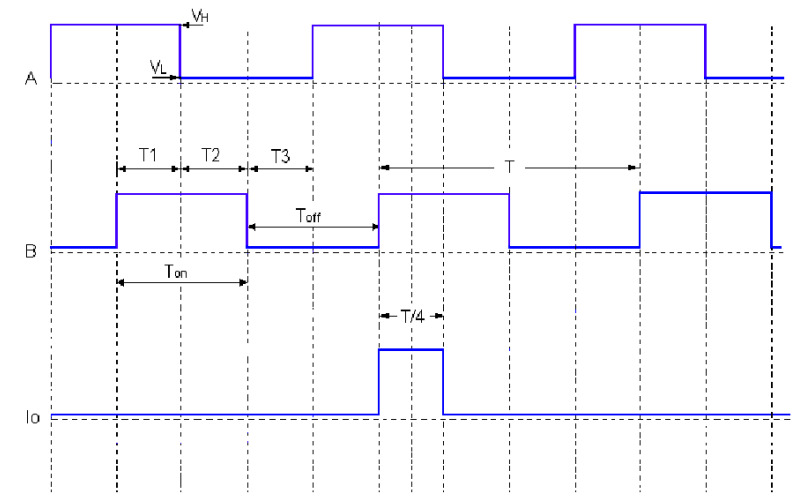
Girar eje para alinear puntos
Turn the shaft ligning up the dots



Nº de líneas Line count	Nº de marcas de referencia Number of reference marks	Ángulo Angle
18000	36	20°



$V_{App} = V_{Bpp} = 1 V_{pp}$
 $V_{Io}: 0.2 V \div 0.85 V$
 $T_{Io}: T - 180^\circ \leq I_o \leq T + 180^\circ$
 $f_{max} = 180 \text{ kHz}$



$V_{OL} \leq 0.5 V, V_{OH} \geq 2.5 V$
 $T_{Io}: 90^\circ$
 $f_{max} = 1 \text{ MHz}$
 $V_{dc} = 5 V \pm 5\%, I_{max} = 150 \text{ mA}$

1 V_{pp}

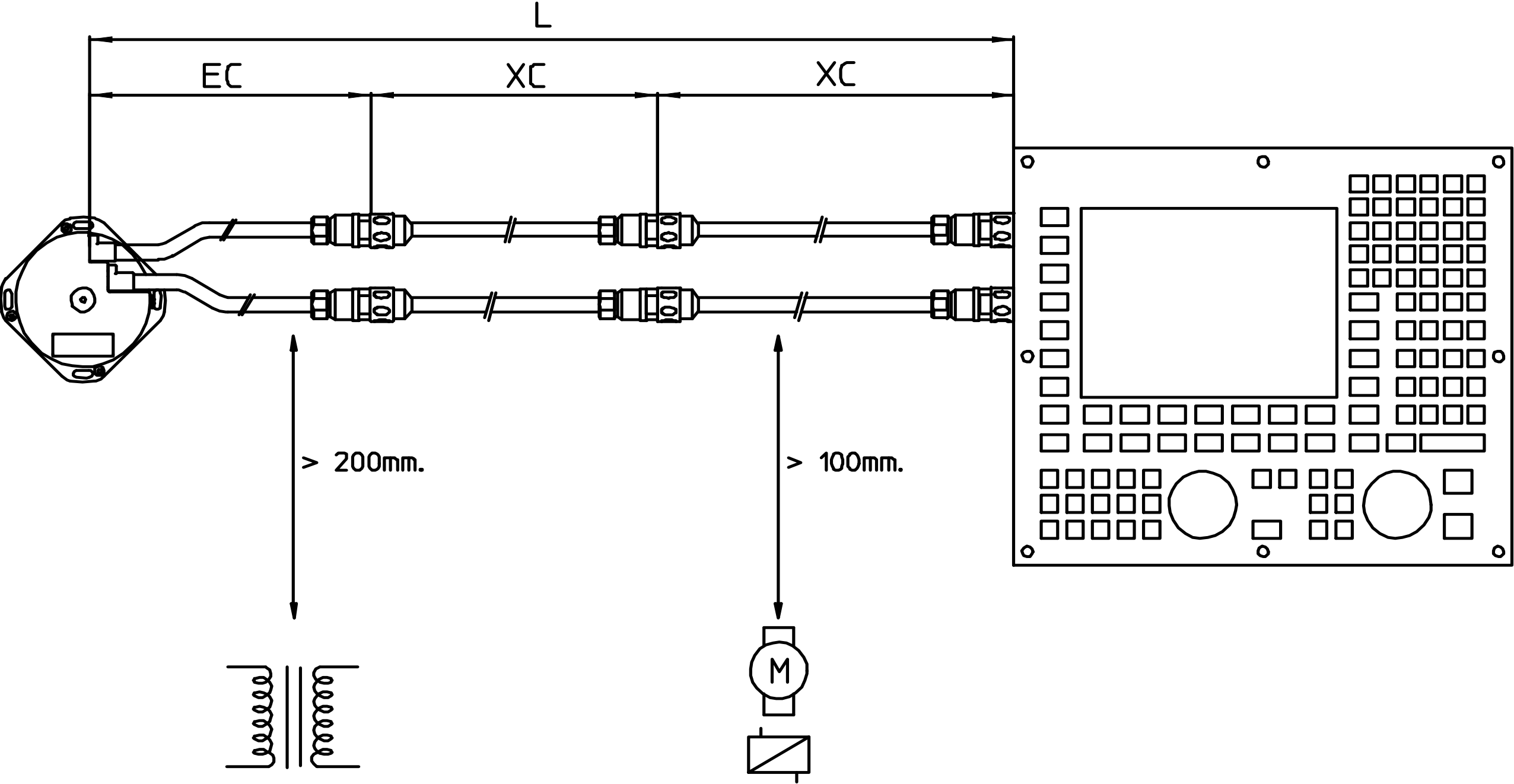
L_{max} = 150 m

TTL

L_{max} = 50 m

Detalle de cables: página 11

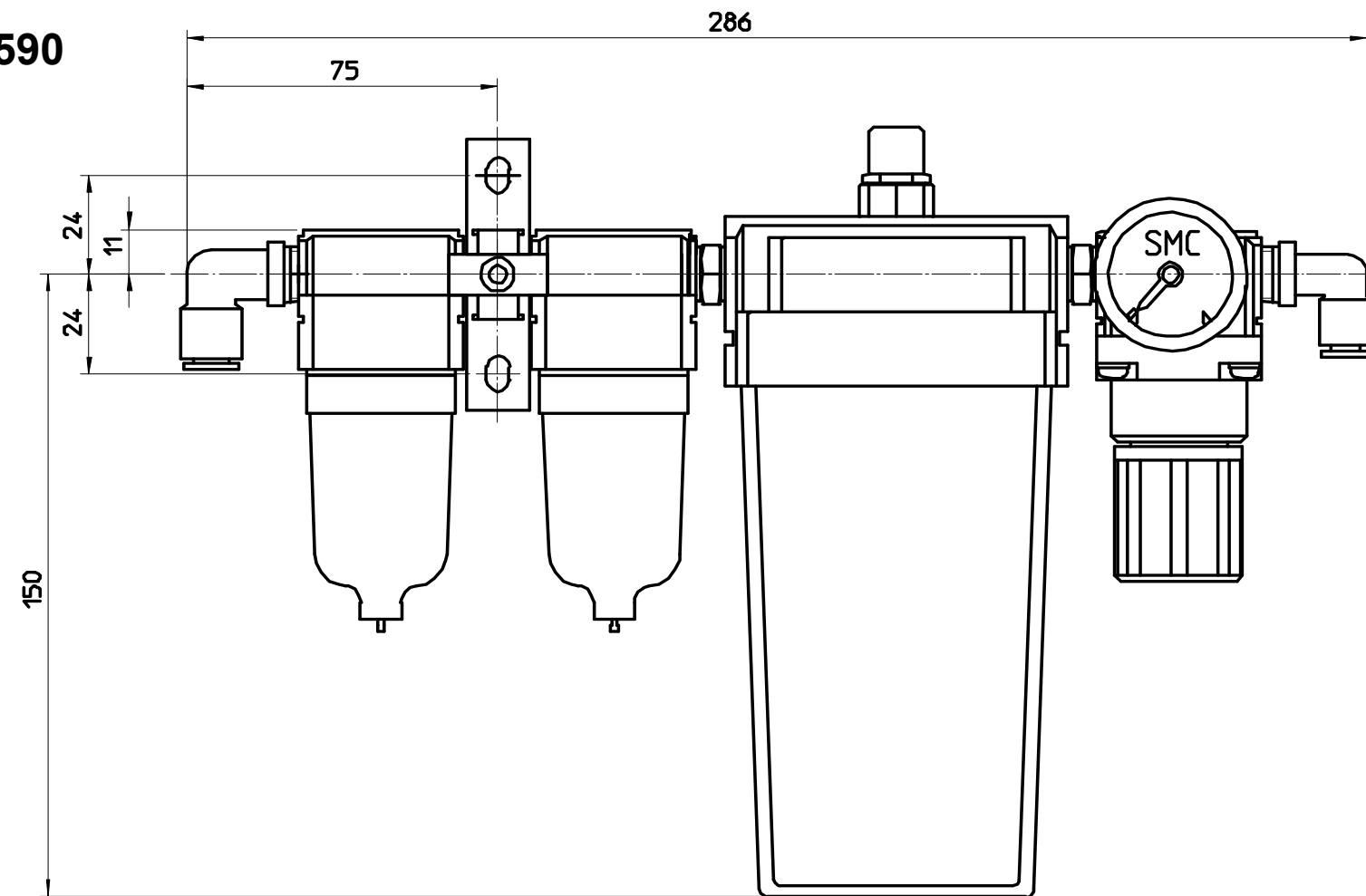
Cable details: page 11



CARACTERÍSTICAS MECÁNICAS MECHANICAL CHARACTERISTICS

Precisión	±5"	Accuracy
Maxima velocidad de giro	10000 rpm	Max. Turning speed
Momento de inercia del eje	240 gr.cm2	Inertia of the rotor
Par (20°C)	≤ 0.01 Nm	Torque
Carga axial en el eje	10N	Axial shaft load
Carga radial al final del eje	10N	Radial load at the end of the shaft
Peso	1.2 Kg	Weight
Estanqueidad	IP-64 (DIN 40050)	Sealing protection
Vibración (50-2000 Hz)	100 m/sec2 (IEC 68-2-6)	Vibration (50-2000 Hz)
Impacto (6ms)	1000 m/sec2 (IEC-68-2-27)	Impact (6 ms)
Temperatura de funcionamiento	-20°C ... 70°C (-4°F ... 158°F)	Operating temperature
Temperatura de almacenamiento	-30°C ... 80°C (-22°F ... 176°F)	Storage temperature

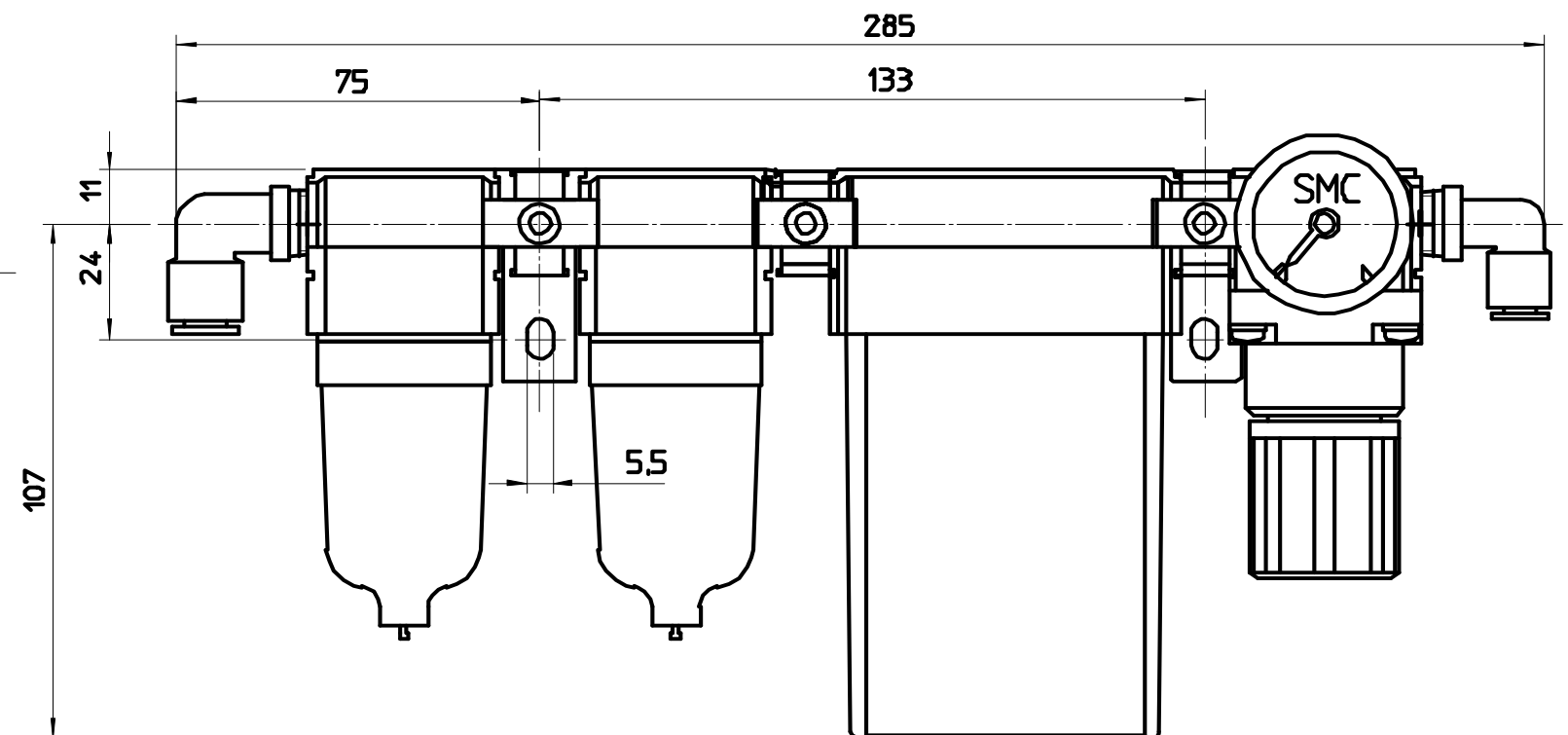
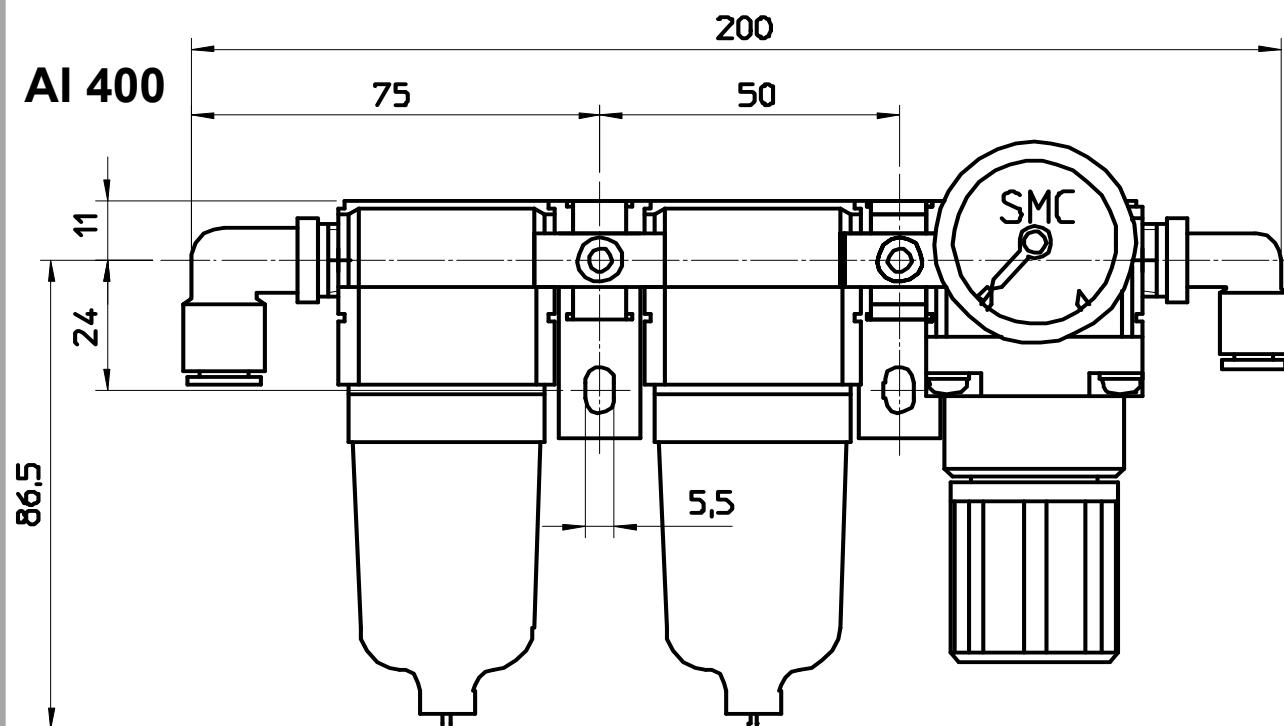
AI 590



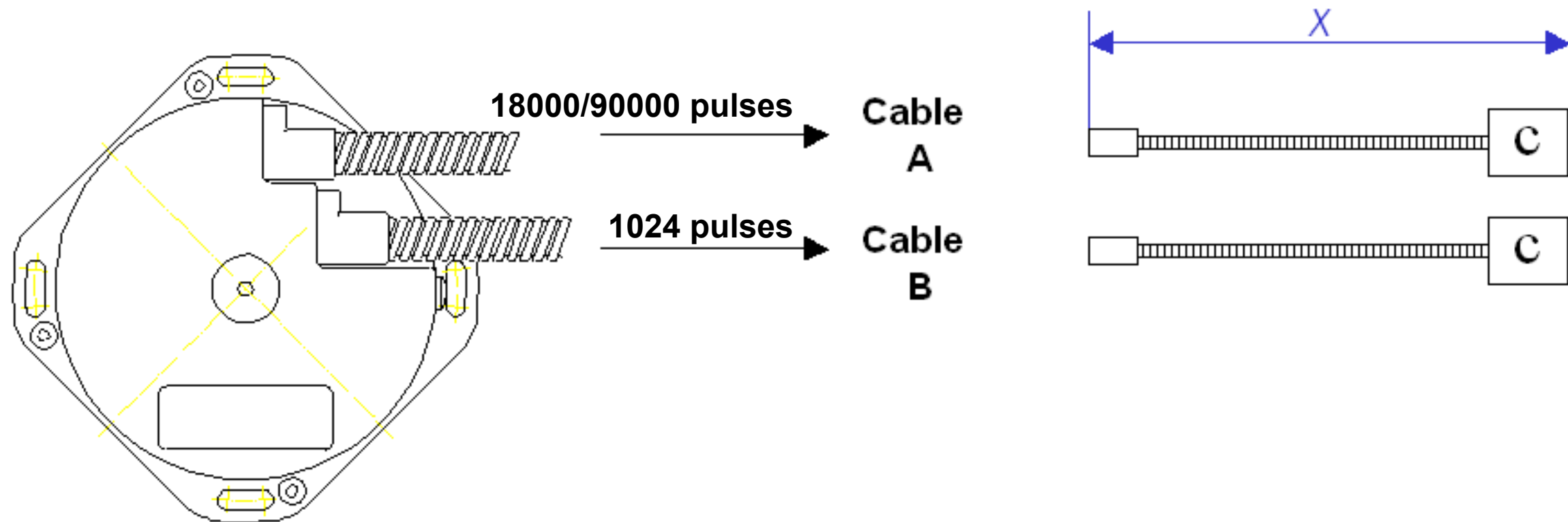
FILTROS DE AIRE / AIR FILTERS

2200000	AI 400	25 l/min
2200001	AI 525	(25l/min)
2200002	AI 550	(50 l/min)
2200003	AI 590	(90 l/min)

AI 525 / AI 550



CABLES

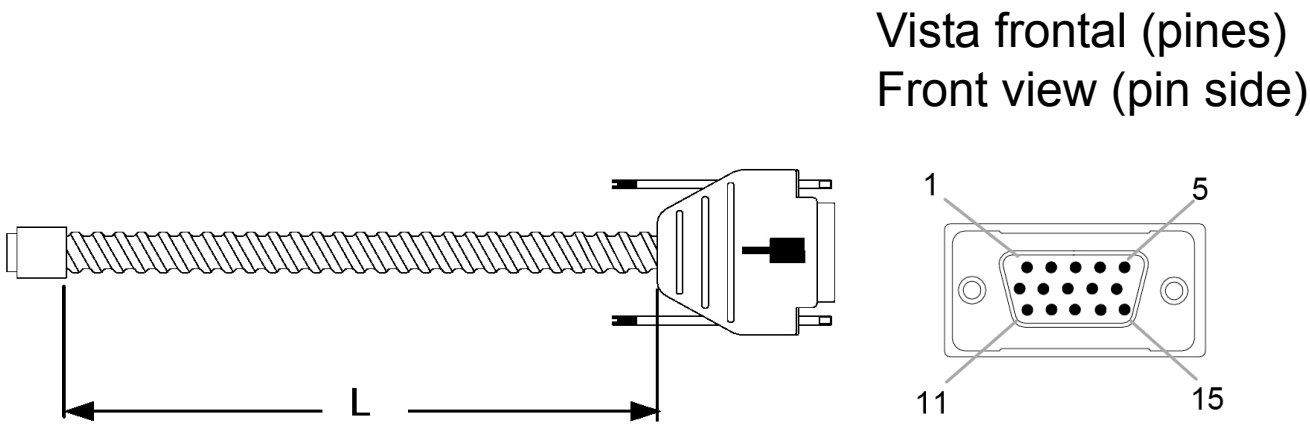


Application	Cable A		Cable B		Connector
	Cable type	Length (m)	Cable type	Length (m)	
Fagor (TTL, 1Vpp)	EC-xP-D EC-xP-D-N	x = 1, 3, 6, 9, 12	EC-xP-D EC-xP-D-N	x = 1, 3, 6, 9, 12	D (SubD HD: p.o. Fagor)
Siemens / Heidenhain (1Vpp)	EC-xP-H EC-xP-H-N	x = 1, 3, 6, 9, 12	EC-xP-H EC-xP-H-N	x = 1, 3, 6, 9, 12	H (SubD: p.o. Siemens / Heidenhain)
Fanuc	EC-xC-FN1 EC-xC-FN1-N	x = 1, 3, 6, 9, 12	EC-xC-FN2 EC-xC-FN2-N	x = 1, 3, 6, 9, 12	FN (Hi-rose: p.o. Fanuc)
Open/abierto	EC-xP-O EC-xP-O-N	x = 1, 3, 6, 9, 12	EC-xP-O EC-xP-O-N	x = 1, 3, 6, 9, 12	No connector Sin conector

CONEXIONES / CONNECTIONS

EC-P-D

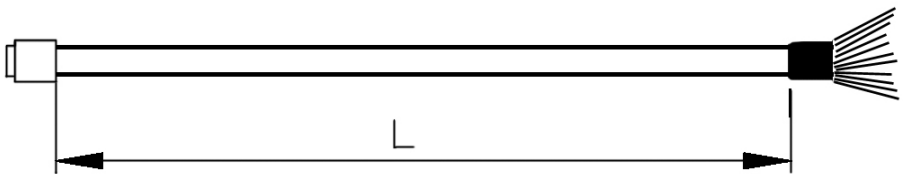
A	/A	B	/B	Io	/Io	+5 V	0 V	Malla / Shield
1	2	3	4	5	6	9	11	15 / Caperuza 15 / Housing
Verde Green	Amarillo Yellow	Azul Blue	Rojo Red	Gris Grey	Rosa Pink	Marrón Brown	Blanco White	Rosa / Malla Pink / Shield



L = 1, 3, 6, 9 & 12 m con o sin tubo metálico / with or without armor

EC-P-O

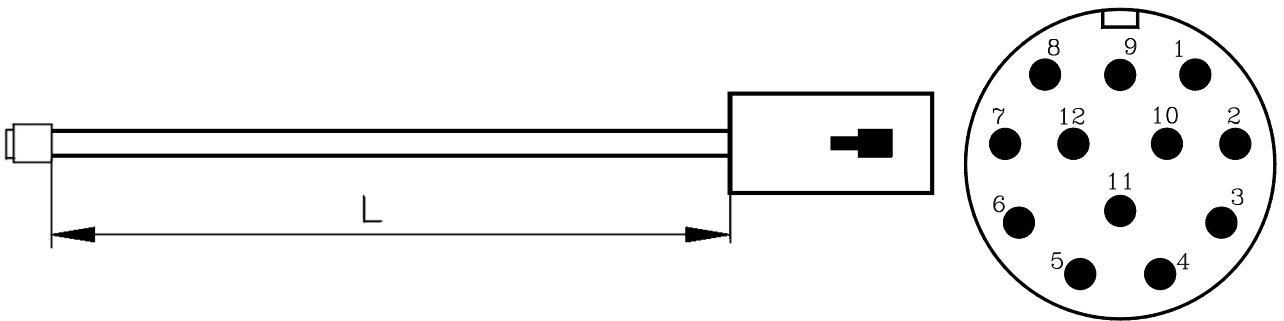
A	/A	B	/B	Io	/Io	+ 5 V	0 V
4	5	6	7	8	9	1	2
Verde Green	Amarillo Yellow	Azul Blue	Rojo Red	Gris Grey	Rosa Pink	Marrón Brown	Blanco White



L = 1, 3, 6, 9 & 12 m con o sin tubo metálico / with or without armor

EC-...A-C1

A	/A	B	/B	Io	/Io	/Alarm	+ 5 V	0 V	
5	6	8	1	3	4	7	2, 12	10, 11	Caperuza Housing
Verde Green	Amarillo Yellow	Azul Blue	Rojo Red	Gris Grey	Rosa Pink	Violeta Purple	Marrón Brown	Blanco White	Malla Shield



L = 1, 3 & 6 m con o sin tubo metálico / with or without armor

GARANTIA

*Plazo: 12 meses a partir de la fecha de expedición de fábrica.

*Cubre gastos de Materiales y Mano de Obra de reparación en FAGOR AUTOMATION.

*Los gastos de desplazamiento son a cargo del cliente.

*No cubre averías por causas ajenas a FAGOR AUTOMATION, como: golpes, manipulación por personal no autorizado, etc.

WARRANTY

*Term: 12 months from factory invoice date.

*It covers parts and labor at FAGOR AUTOMATION.

*Travel expenses are payable by the customer.

*Damages due to causes external to FAGOR AUTOMATION, such as unauthorized handling, blows, etc. are not covered.

DECLARACION DE CONFORMIDAD

Fabricante: Fagor Automation, S. Coop.

Barrio de San Andrés 19, C.P. 20500, Mondragón -Guipúzcoa- (ESPAÑA)

Declaramos bajo nuestra exclusiva responsabilidad la conformidad del producto al que hace referencia este manual

Nota. Algunos caracteres adicionales pueden seguir a las referencias de los modelos indicados en este manual. Todos ellos cumplen con las siguientes normas:

COMPATIBILIDAD ELECTROMAGNÉTICA:

EN 61000-6-2:2005 Norma de Inmunidad en entornos industriales

EN 61000-6-4:2007 Norma de Emisión en entornos industriales

De acuerdo con las disposiciones de la Directiva Comunitaria: 2004/108/CE de Compatibilidad Electromagnética.

Mondragón a 1 de Septiembre de 2009

Fagor Automation, S. Coop.


Director Gerente
Pedro Ruiz de Aguirre

DECLARATION OF CONFORMITY

Manufacturer: Fagor Automation, S. Coop.

Barrio de San Andrés 19, C.P. 20500, Mondragón -Guipúzcoa- (SPAIN)

We declare under our exclusive responsibility the conformity of the product referred to in this manual.

Note. Some additional characters may follow the model references indicated in this manual. They all comply with the following regulations:

ELECTROMAGNETIC COMPATIBILITY:

EN 61000-6-2:2005 Standard on immunity in industrial environments

EN 61000-6-4:2007 Standard on emission in industrial environments

According to the European Directive: 2004/108/CE on electromagnetic compatibility.

Mondragón September 1st 2009

NOTAS DE USUARIO / USER NOTES

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[illegible]

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