



Fagor Automation S. Coop.

Manual code: 14460094
Manual version: 1005



ENCODER S-D170

MANUAL DE INSTALACIÓN INSTALLATION MANUAL

Modelos Models	Impulsos/vuelta Pulses / rev.	Señal Signal	Impulso de referencia Reference mark
SP-18000-D170	18 000	1 Vpp seno	1
SOP-18000-D170		1 Vpp sine	Codificado/Distance coded
S-18000-D170	18 000	5 V TTL	1
SO-18000-D170			Codificado/Distance coded
S-90000-D170	90 000		1
SO-90000-D170			Codificado/Distance coded
S-180000-D170	180 000		1
SO-180000-D170			Codificado/Distance coded



FAGOR AUTOMATION S. COOP.

B^a San Andrés N^o 19

Apdo de correos 144

20500 Arrasate/Mondragón

- Spain -

Web: www.fagorautomation.com

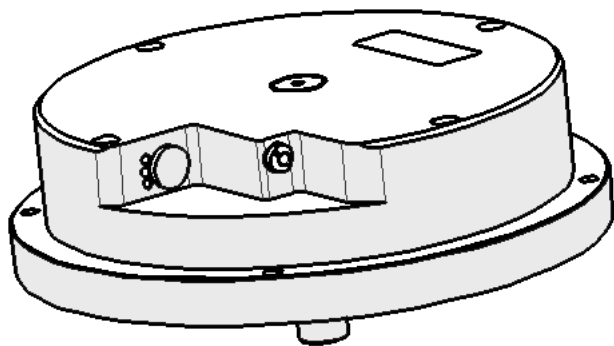
Email: info@fagorautomation.es

Tel.: (34) 943 719200

Fax: (34) 943 791712



Fagor Automation S. Coop.



MANUAL

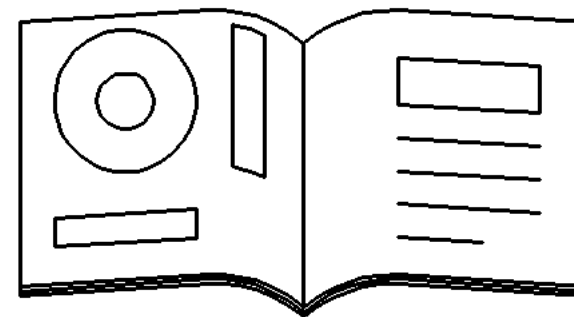
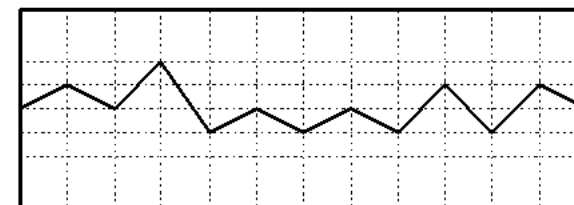
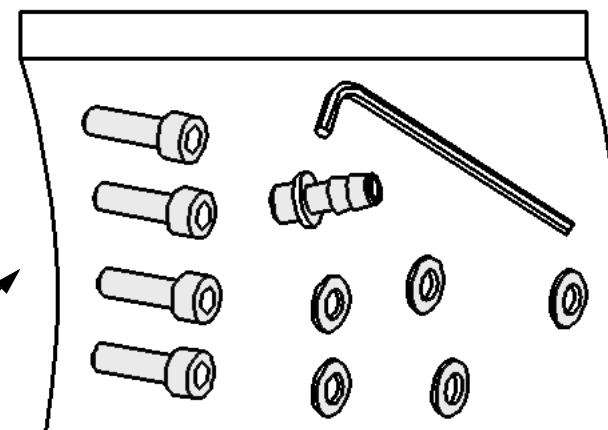


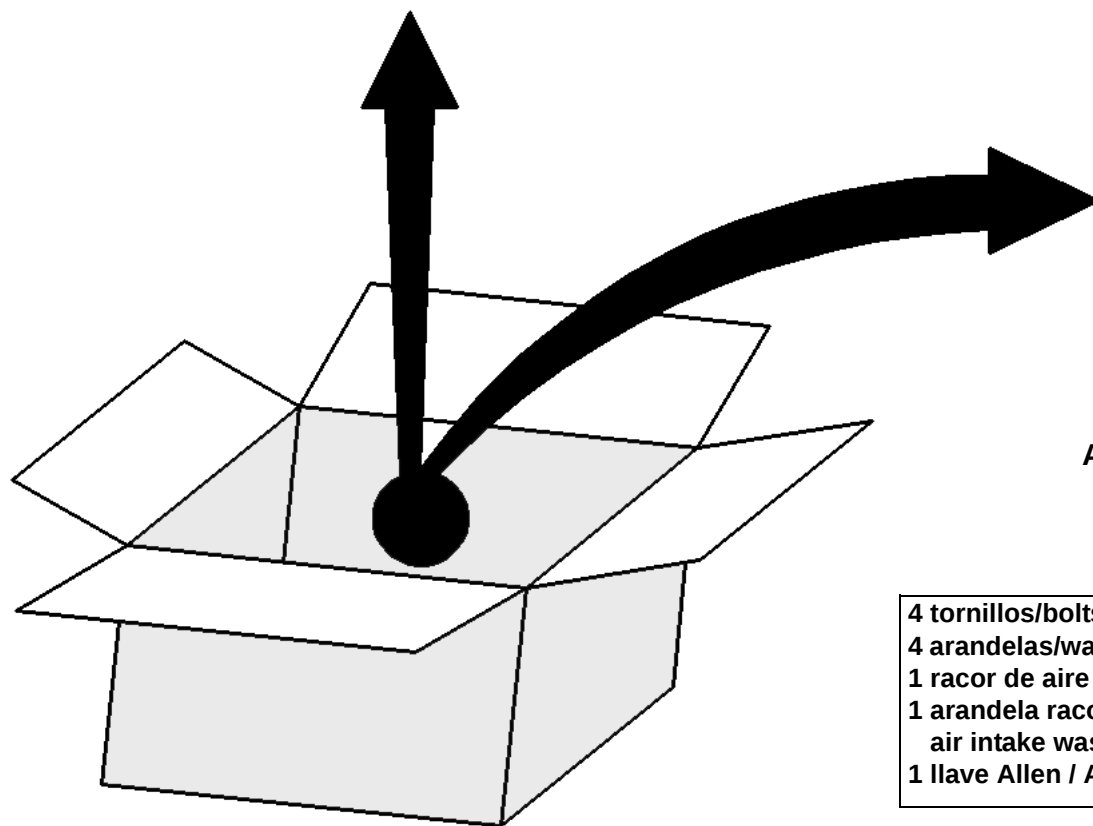
GRÁFICO
GRAPH



ACCESORIOS
ACCESSORIES

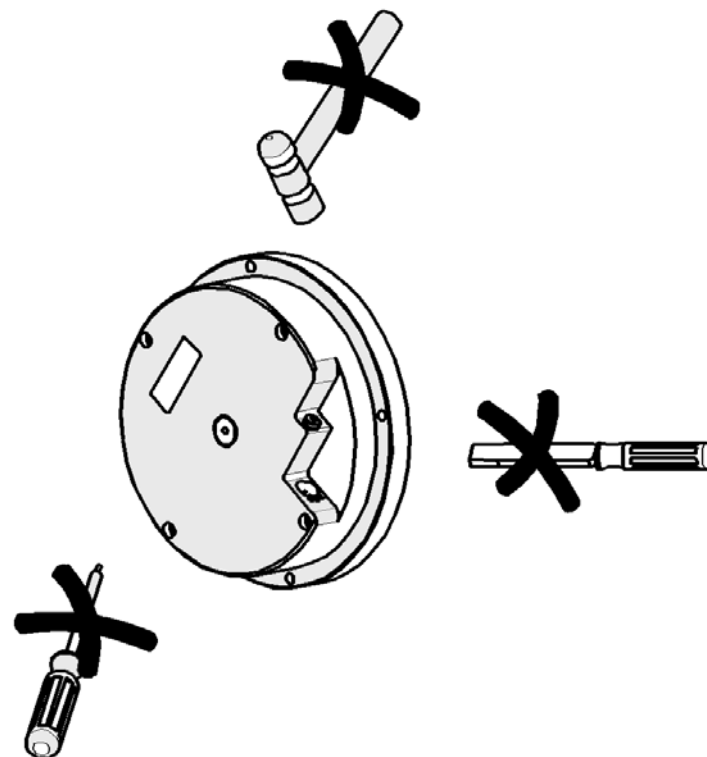
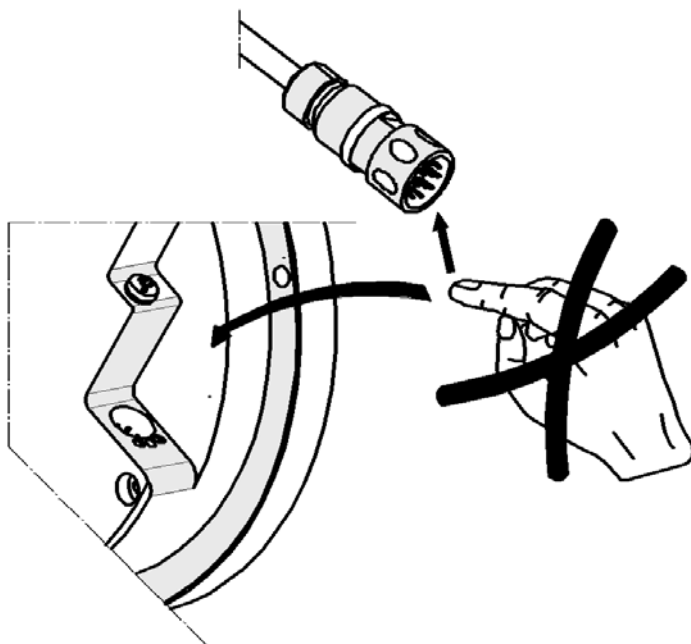
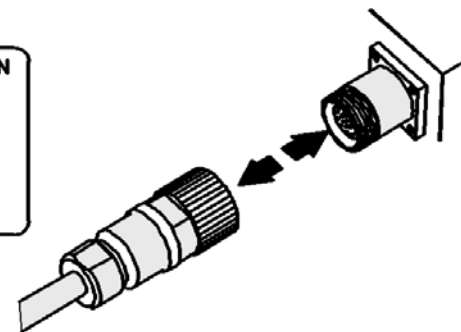
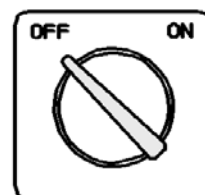
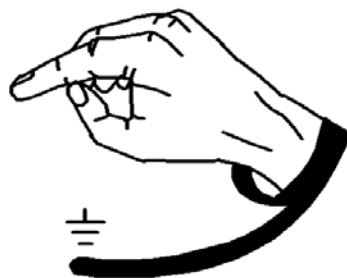


4 tornillos/bolts M5 x 25 DIN 912
4 arandelas/washers M5 DIN 125
1 racor de aire / air intake
1 arandela racor de aire /
air intake washer
1 llave Allen / Allen wrench



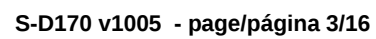


DIN EN 100



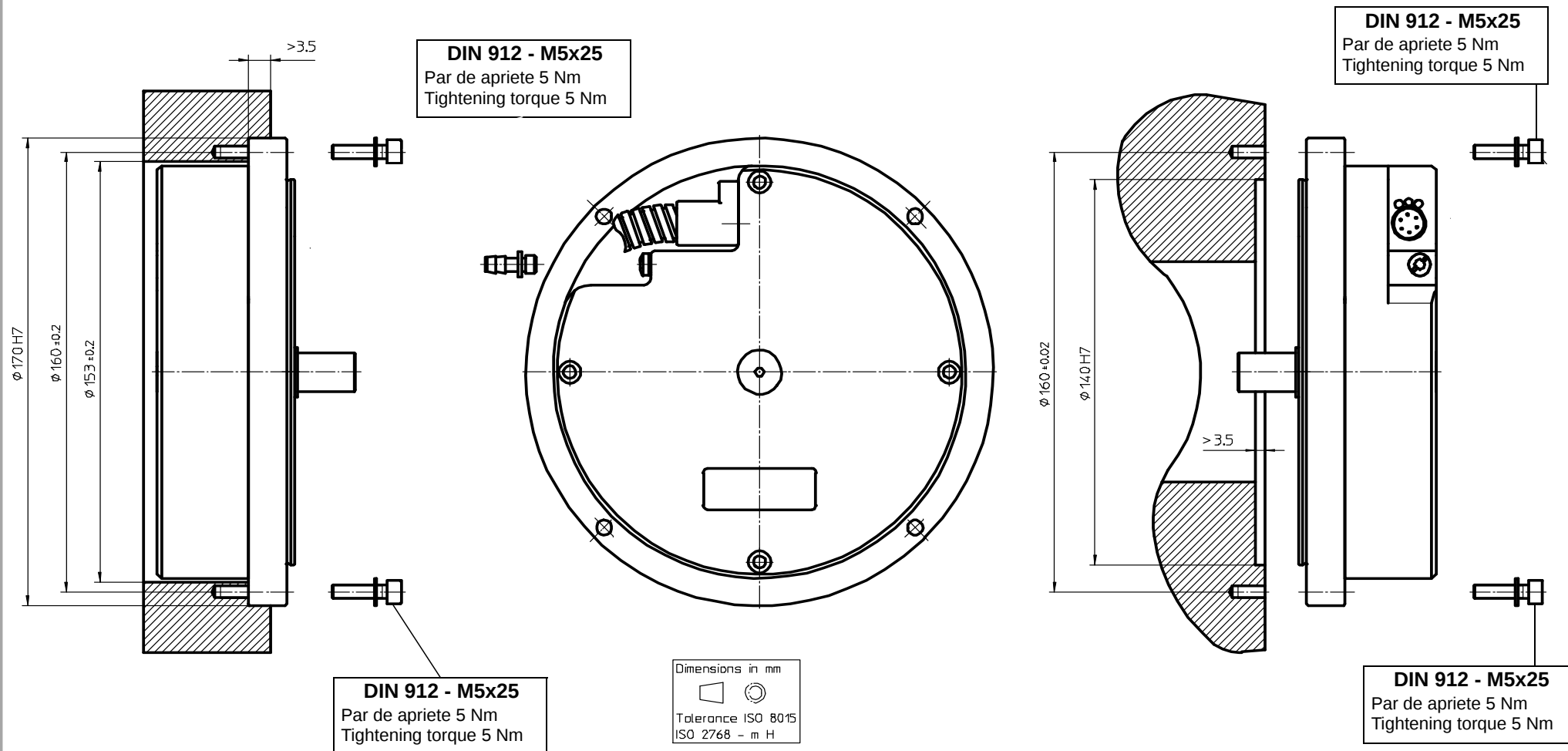
Technical drawing of a circular mechanical part, likely a flange or cover plate, showing dimensions and features:

- Overall Diameter:** $\phi 160$
- Inner Diameter:** $\phi 5.5$
- Central Hole:** A small central hole is present.
- Mounting Holes:** Six mounting holes are distributed around the inner circle.
- Dimensions:**
 - 39.1:** Distance from the center to the center of the mounting holes.
 - 39.5:** Distance from the center to the center of the mounting holes.
 - 7.5:** Distance from the center to the center of the mounting holes.
 - 54:** Distance from the center to the center of the mounting holes.
- Angles:**
 - 45°:** Angle between the center line and the center of the mounting holes.
 - 90°:** Angle between the center line and the center of the mounting holes.
- Features:** A rectangular slot is located at the bottom center. A small protrusion is located on the left side.

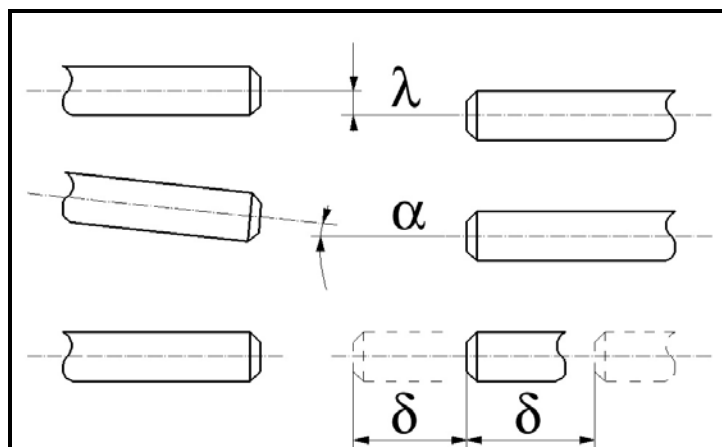


MONTAJE / MOUNTING

Cotas de montaje / Mounting dimensions



MONTAJE / MOUNTING



Error cinemático de transferencia:

Kinematic error of transfer:

Model AA: $\pm 2''$ 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

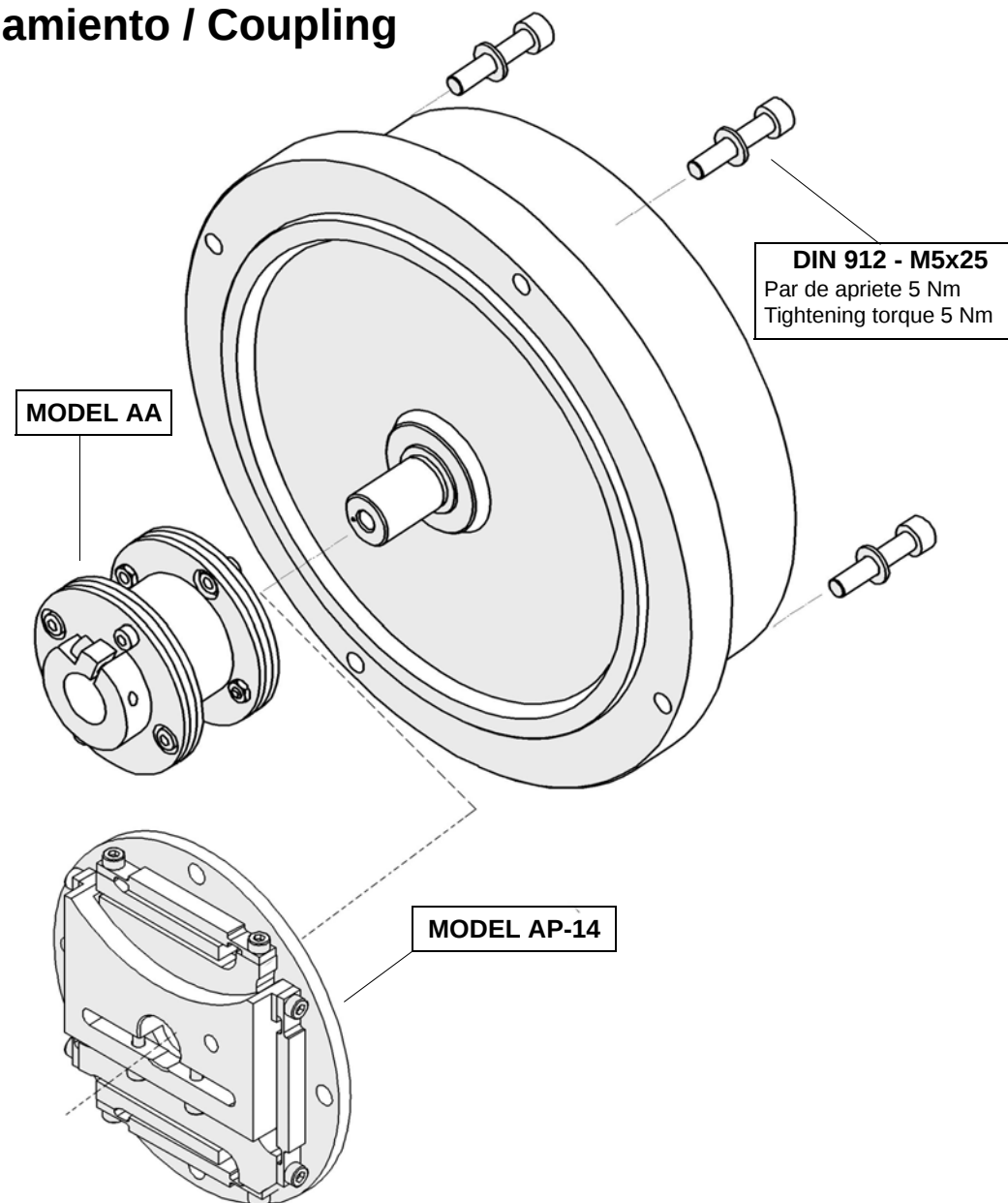
Model AP-14: $\pm 2''$ at $\lambda \leq 0.1 \text{ mm}$ & $\alpha \leq 0.09^\circ$

λ max.: 0.3 mm

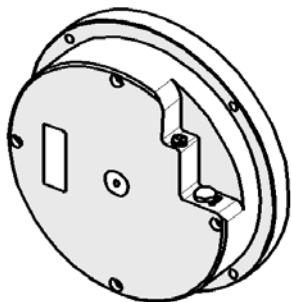
α max.: 0.2°

δ max.: 0.1 mm

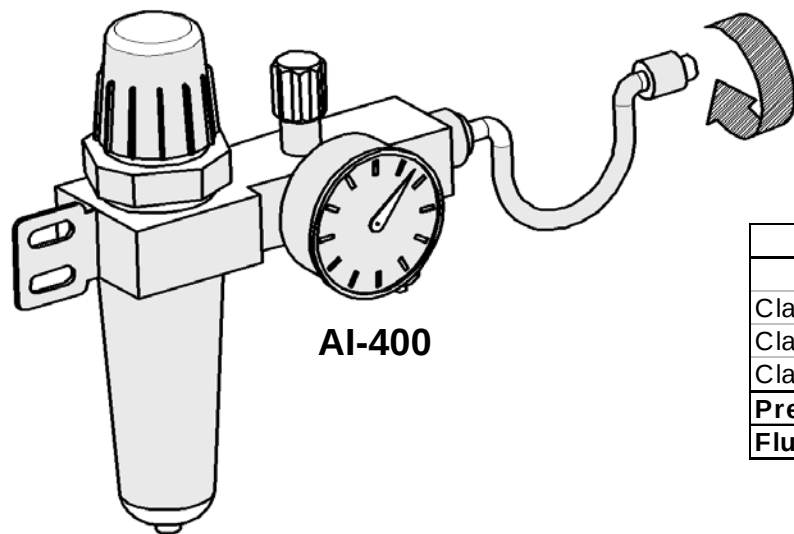
Acoplamiento / Coupling



Nivel máximo: IP 64
Maximum level IP 64

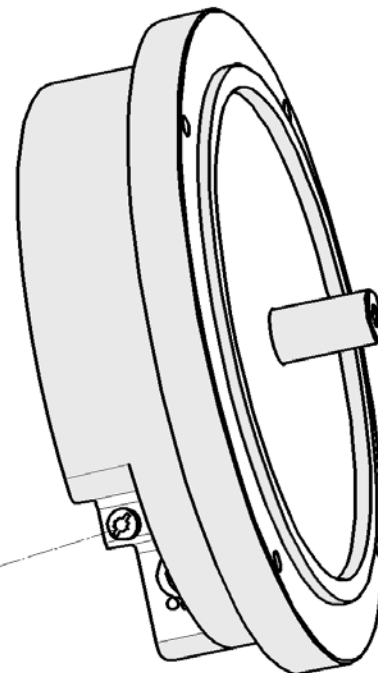


> IP 64



AI-400

(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

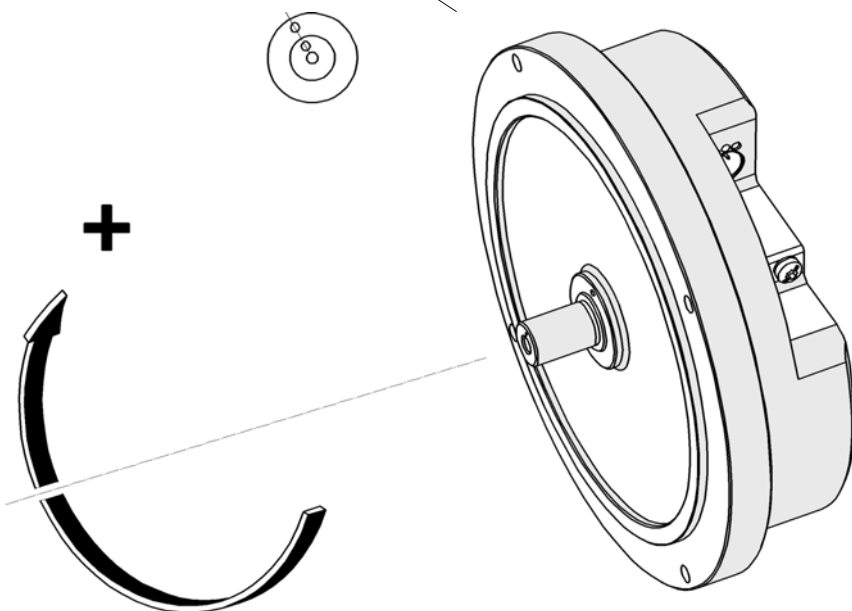
Presión / Pressure 1 Kg / cm³

Flujo / Flow 10 l. / min. / encoder

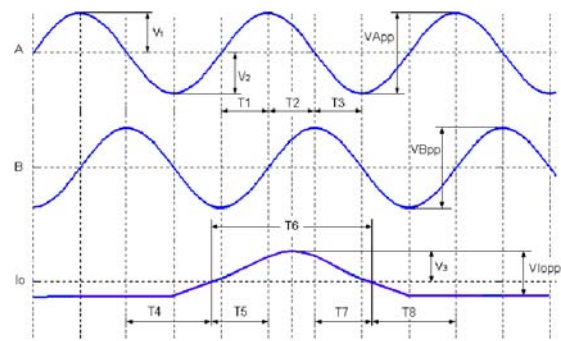
CARACTERÍSTICAS ELÉCTRICAS / ELECTRICAL CHARACTERISTICS

Orientación del impulso de referencia (I₀)
Reference mark (I₀) orientation

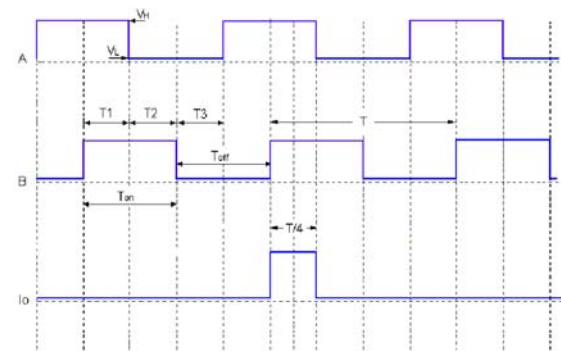
Girar eje para alinear puntos
Turn the shaft ligning up the dots



A
A
B
B
I ₀
I ₀



$V_{App} = V_{Bpp} = 1 V_{pp}$
 $V_{I0}: 0.2 V \div 0.85 V$
 $T_{I0}: T - 180^\circ \leq I_0 \leq T + 180^\circ$
 $f_{max} = 180 L_{HZ}$



$V_{0L} \leq 0.5 V, V_{0H} \geq 2.5 V$
 $T_{I0}: 90^\circ$
 $f_{max} = 1 MHz$

$V_{dc} = 5 V \pm 10\%, I_{max} = 150 mA$

1 Vpp



Lmax = 150 m

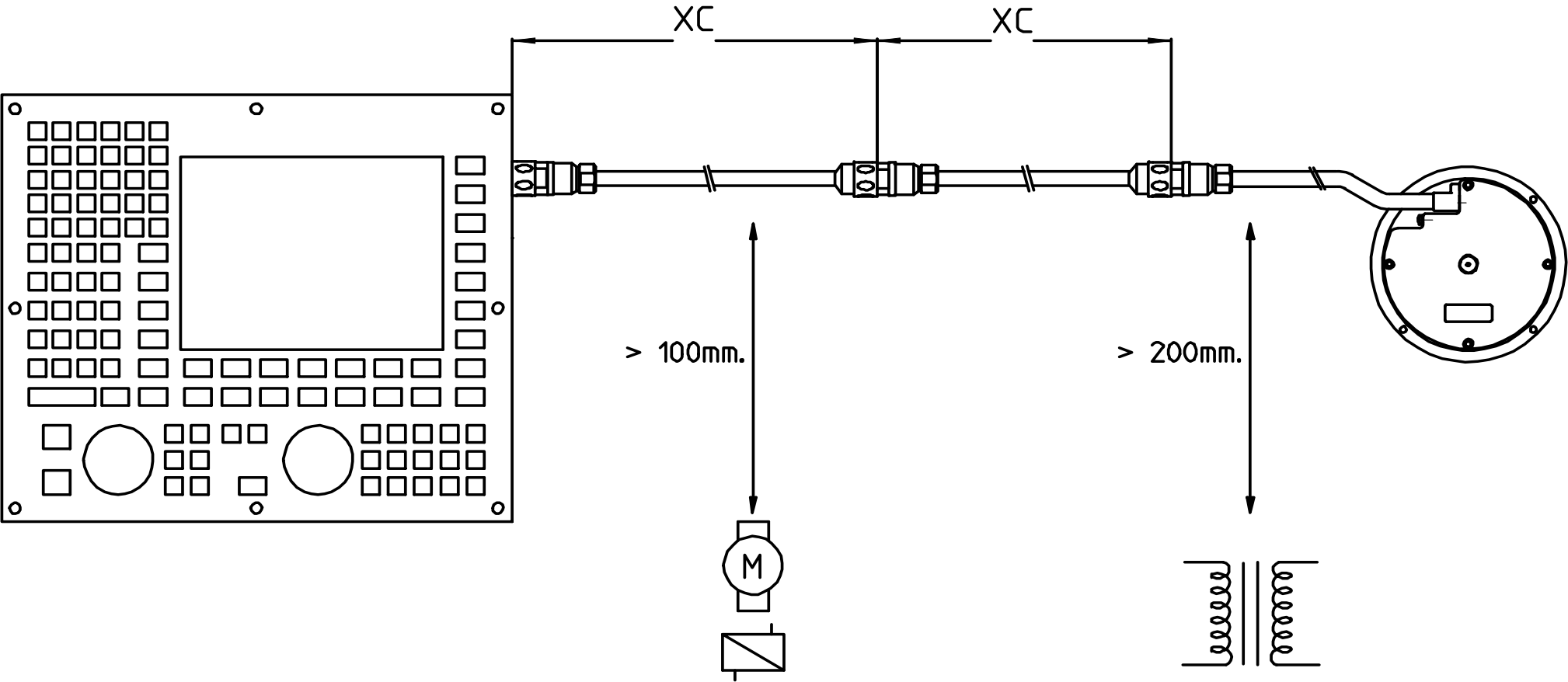
TTL



Lmax = 50 m

Detalle de cables: página 11

Cable details: page 11

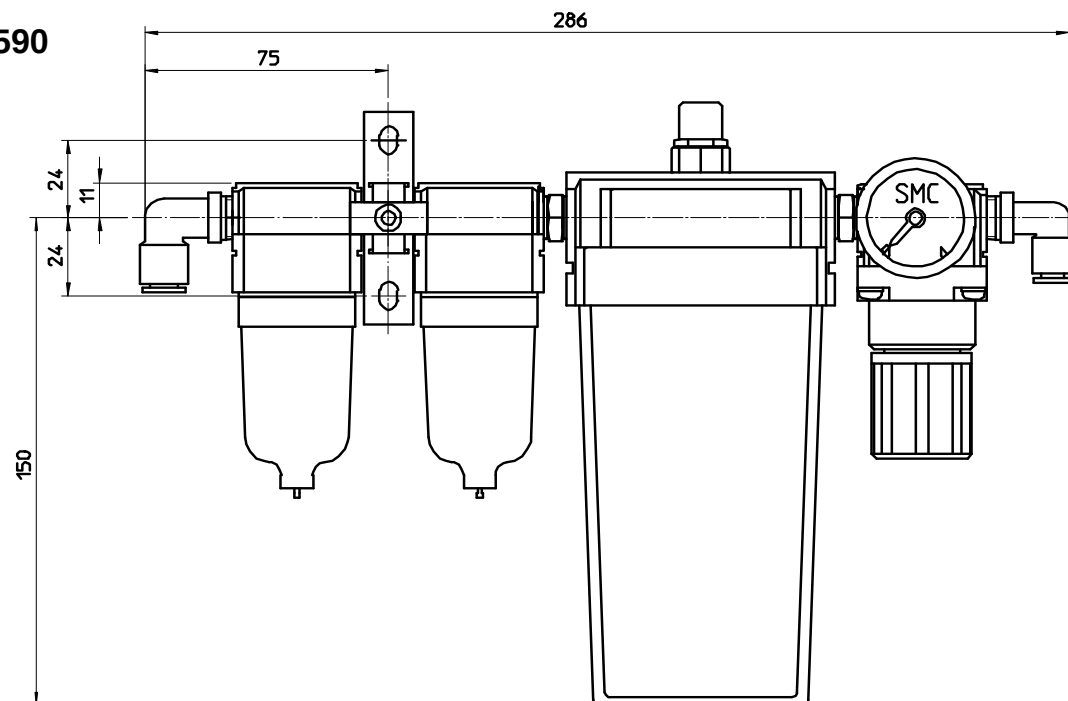


CARACTERÍSTICAS MECÁNICAS

MECHANICAL CHARACTERISTICS

Precisión	±2"	Accuracy
Maxima velocidad de giro	3000 rpm	Max. Turning speed
Momento de inercia del eje	350 gr.cm ²	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	2.65 Kg	Weight
Estanqueidad	IP-64 (DIN 40050)	Sealing protection
Vibración (50-2000 Hz)	100 m/sec ² (IEC 68-2-6)	Vibration (50-2000 Hz)
Impacto (6ms)	1000 m/sec ² (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

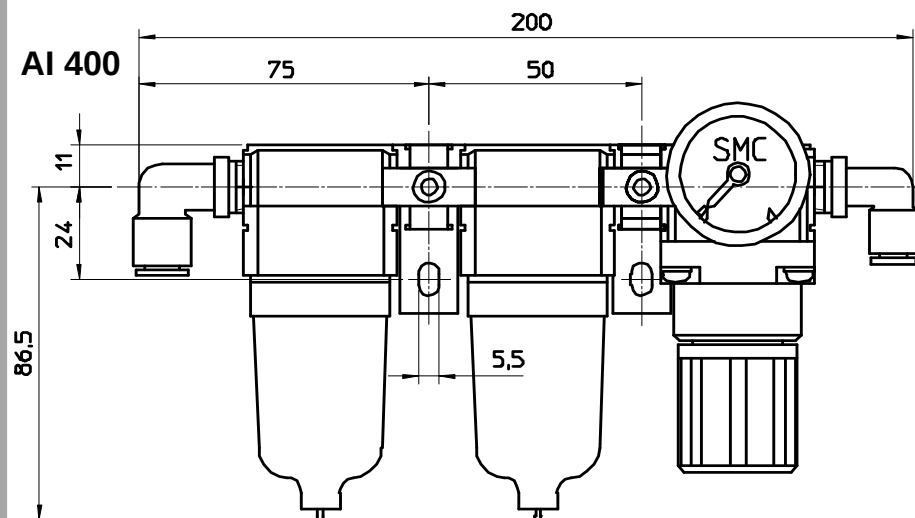
AI 590



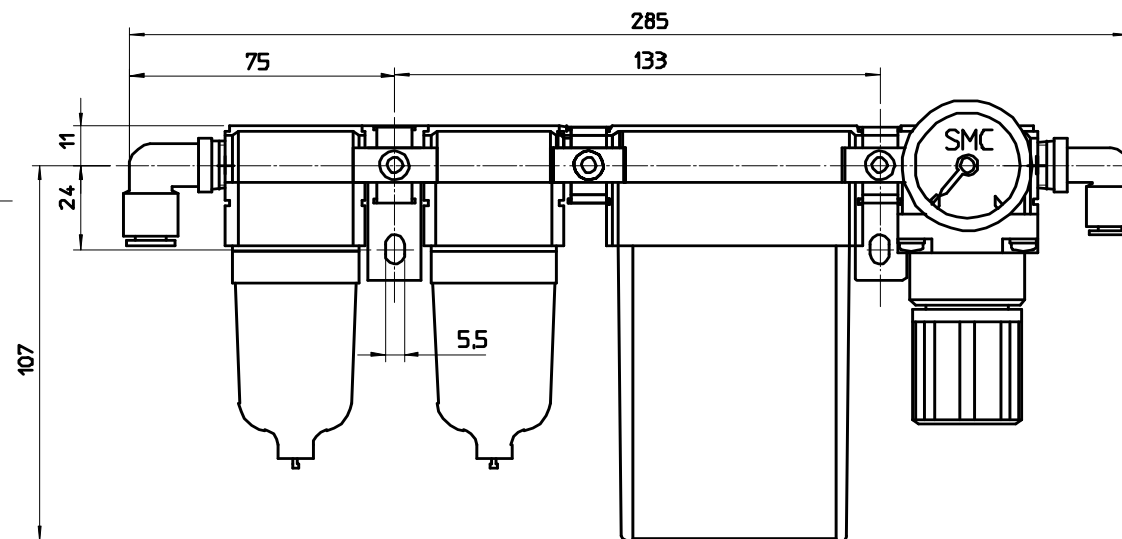
FILTROS DE AIRE / AIR FILTERS

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

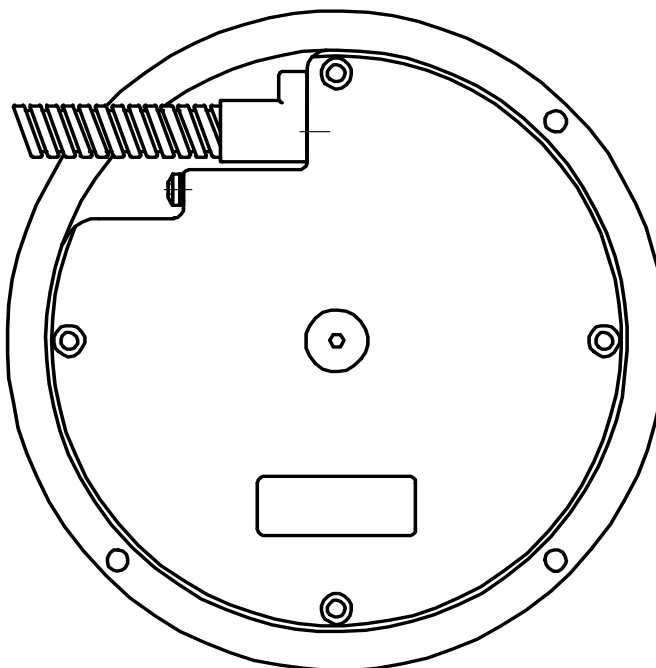
AI 400



AI 525 / AI 550



CABLES



	< 12 m	< 26 m	26 - 150 m	SA
Application	Cable EC*	Cable EC + XC**	Cable EC + XC + XC	
8070, 8040, 8055i, AXD, SPD, MCP	EC-...-P-D	EC-1A-C1+ XC-C2-...-D	EC-1A-C1+ XC-C1 + XC-C2-...-D	
8055, 8050, 8030, 8025	EC-...-P-D	EC-1A-C1+ XC-C2-...-D	EC-1A-C1+ XC-C1 + XC-C2-...-D	+ SA-P-FS
11 μ A applications using CONNEI 9	EC-...-P-D	EC-1A-C1+ XC-C2-...-D	EC-1A-C1+ XC-C1 + XC-C2-...-D	+ SA-P-C
1 Vpp applications using CONNEI 12	EC-...-A-C1	EC-1A-C1+ XC-C2-...-C1	EC-1A-C1+ XC-C1 + XC-C2-...-C1	
TNC 1 Vpp	EC-...-AS-H	EC-1A-C1+ XC-C2-...-H	EC-1A-C1+ XC-C1 + XC-C2-...-H	
Aplicaciones de terceros (conector indefinido) 3rd party applications (undefined connector)	EC-...-P-O	EC-1A-C1+ XC-C2-...-D***	EC-1A-C1+ XC--C2-C1 + XC-C2-...-D***	

* Cables EC: 1, 3, 6, 9, 12 m

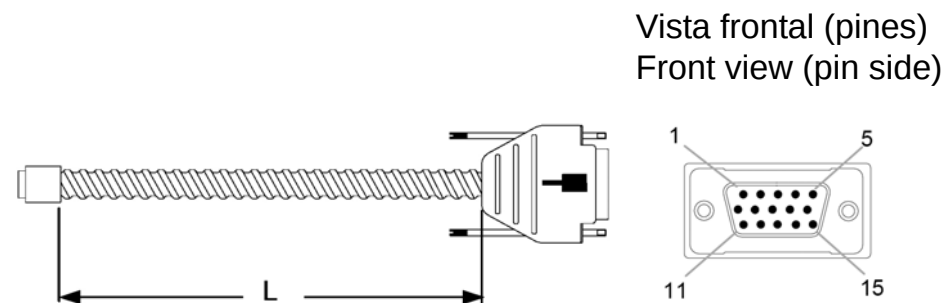
** Cables XC: 5, 10, 15, 20, 25 m

*** Quitar conector / Remove connector

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

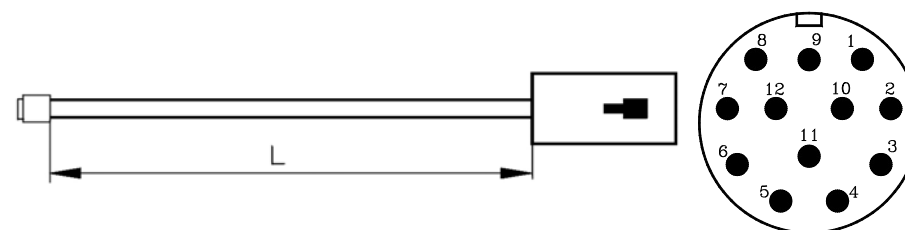
A	/A	B	/B	Io	/Io	+ 5 V	0 V
4	5	6	7	8	9	1	2
Verde Green	Amarillo Yellow	Azul Blue	Rojo Red	Gris Grey	Rosa Pink	Marrón Brown	Blanco White



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:

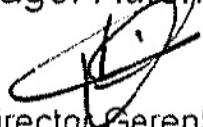
EN 61000-6-2:2005 Norma de Inmunidad en entornos industriales

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

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

NOTAS DE USUARIO / USER NOTES