



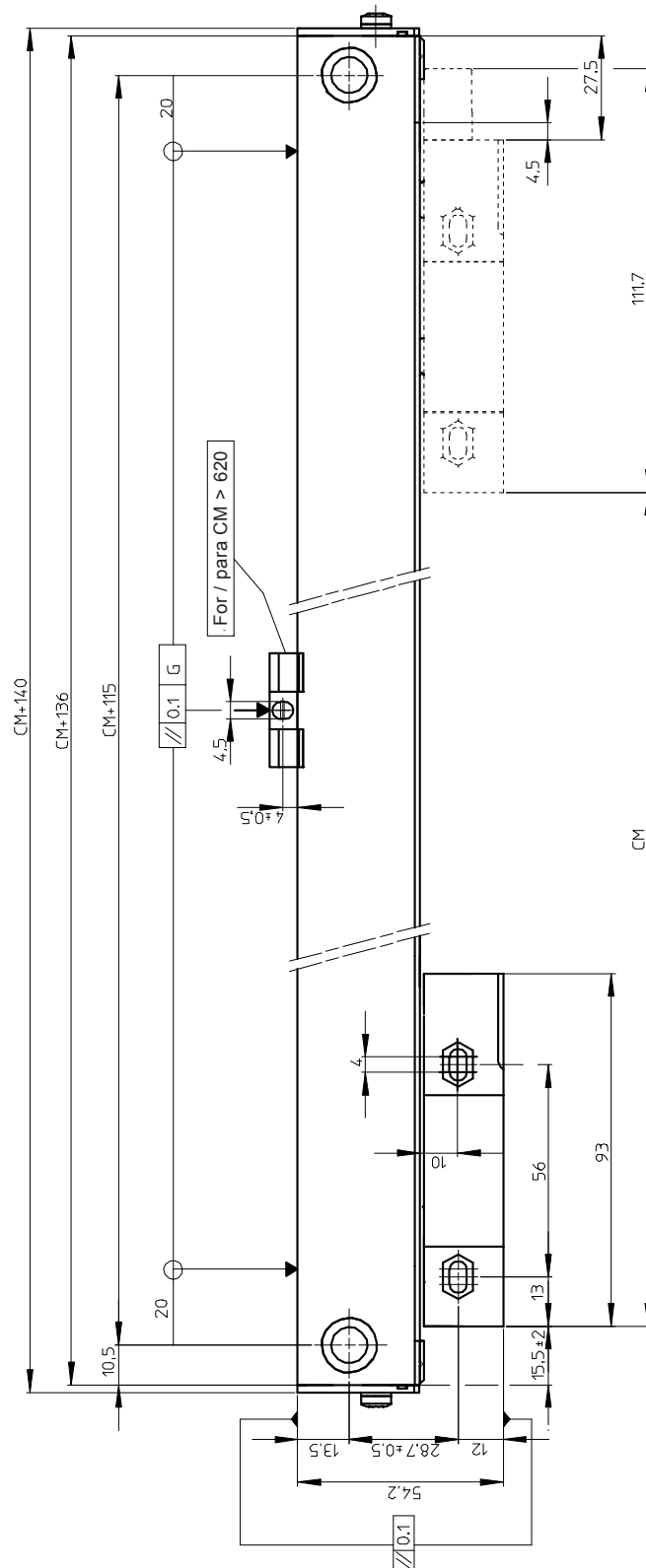
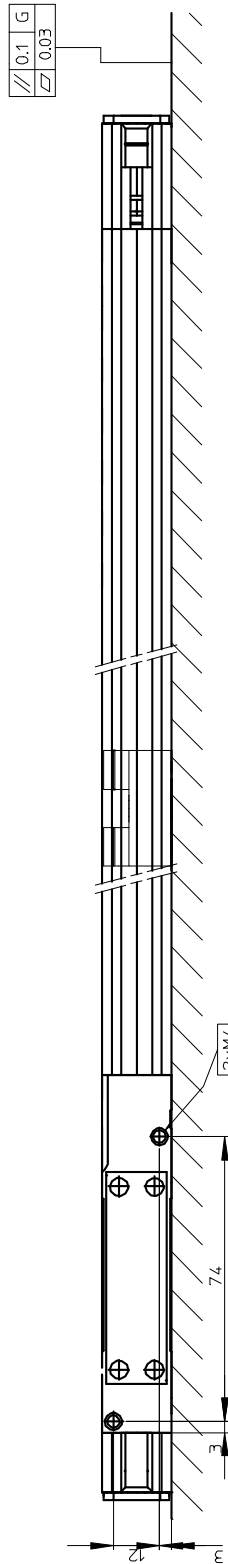
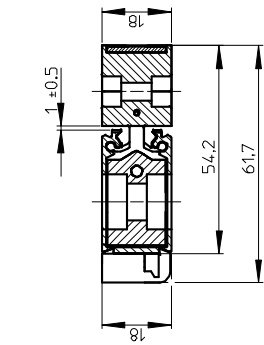
Fagor Automation

LINEAR ENCODER MODEL: SAF ENCODER LINEAL MODELO: SAF

MANUAL CODE:
MANUAL VERSION:

14460082
V1308

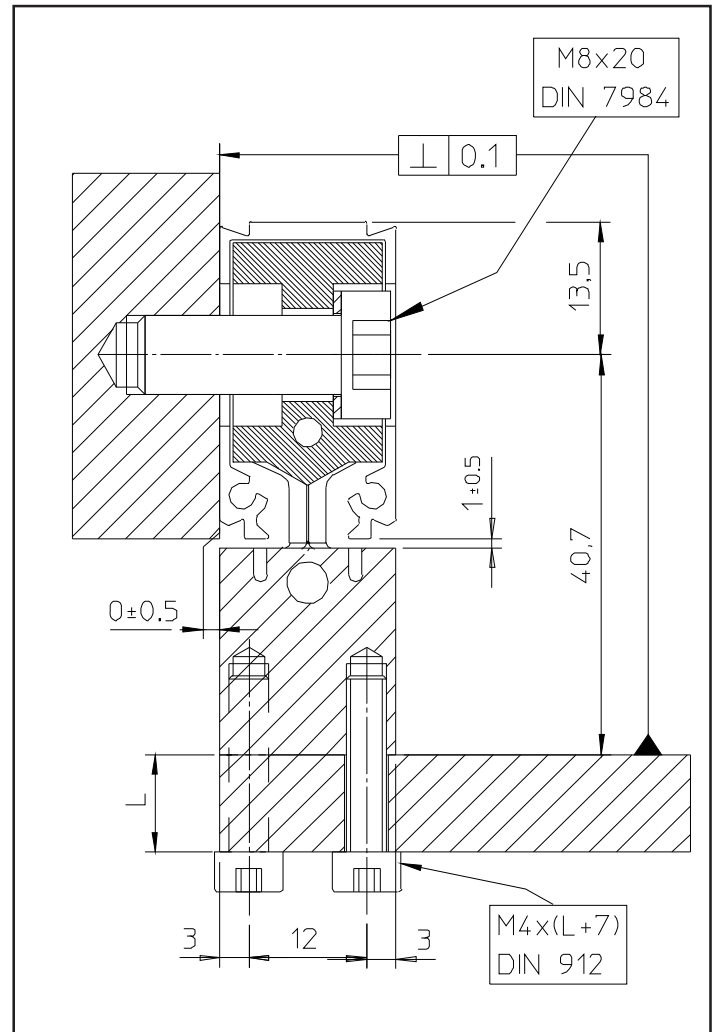
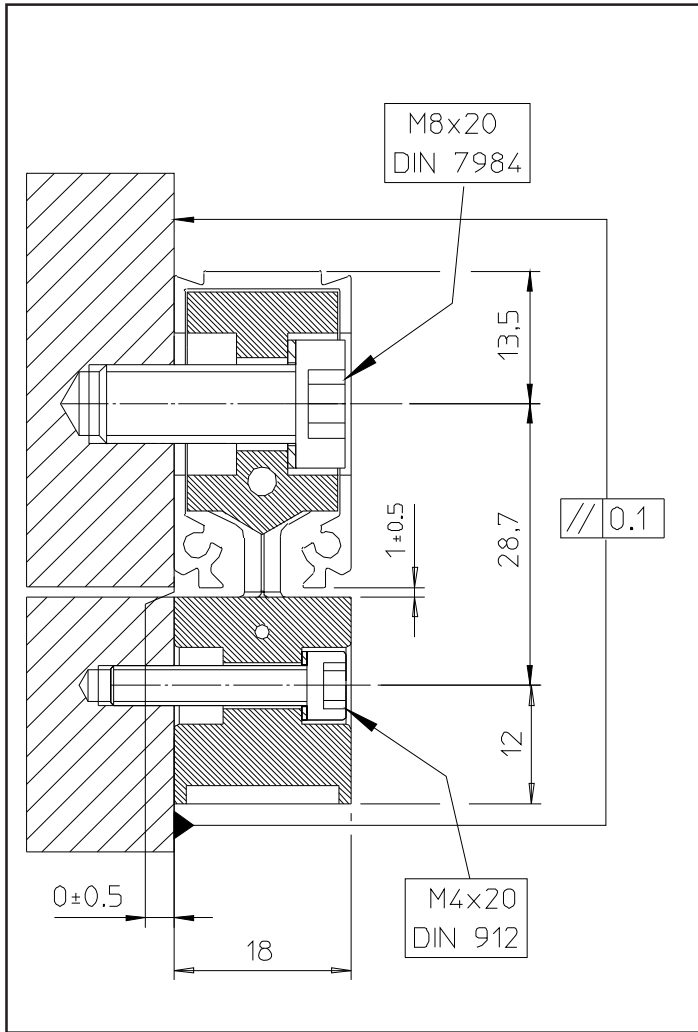




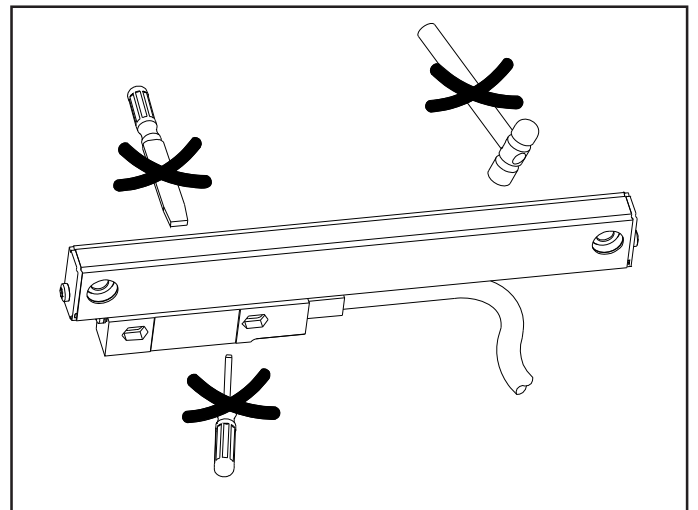
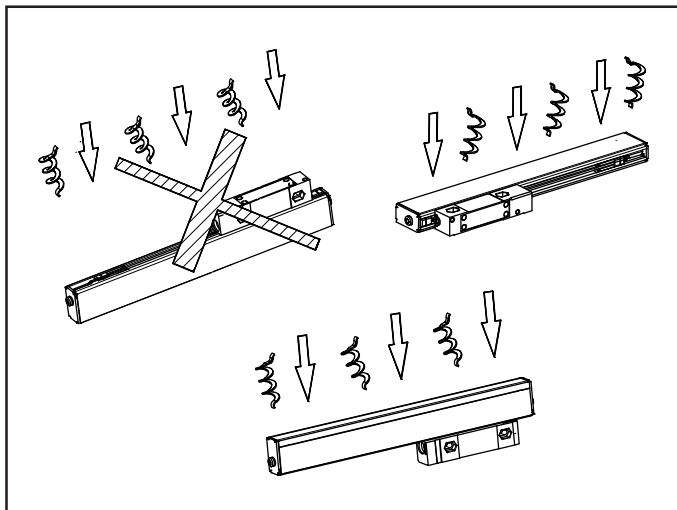
CM = Curso de medición
Measuring length
Guía de la máquina
Machine guide

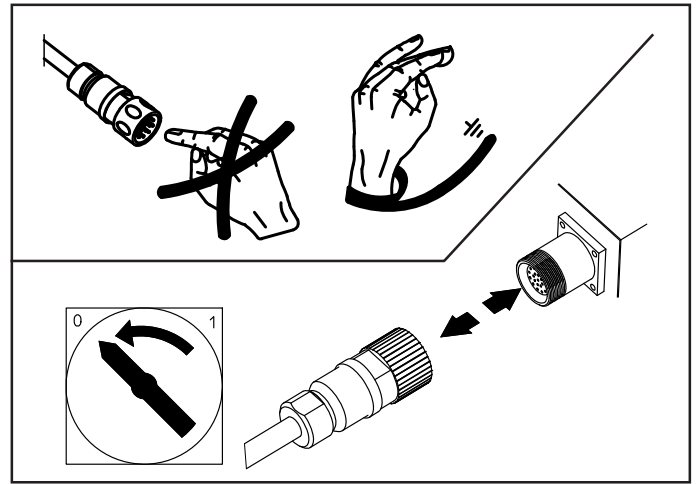
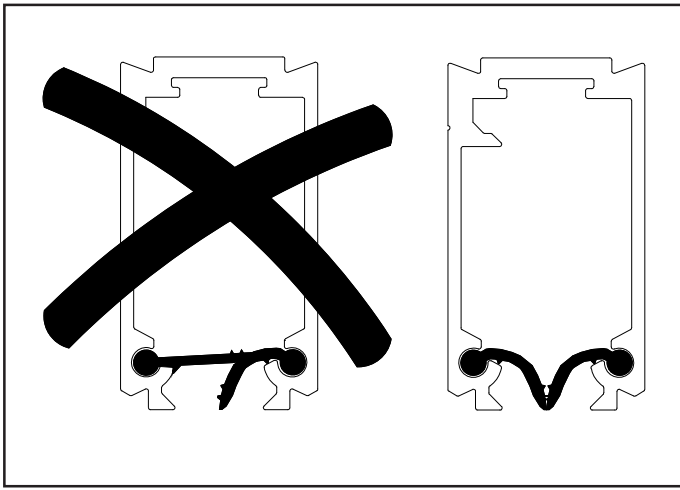
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MOUNTING POSSIBILITIES
POSIBILIDADES DE MONTAJE

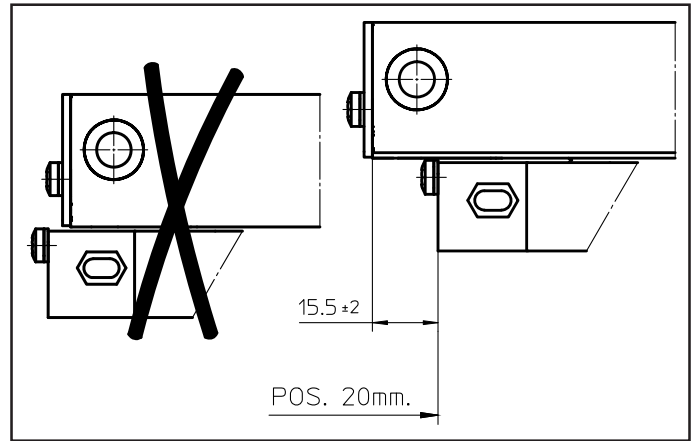
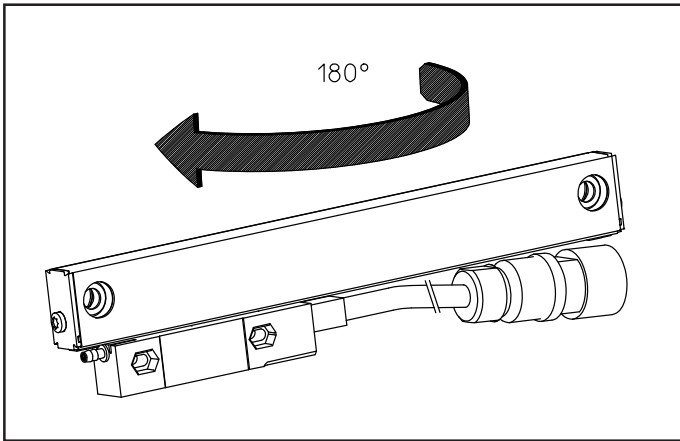


MOUNTING PRECAUTIONS
PRECAUCIONES PARA EL MONTAJE



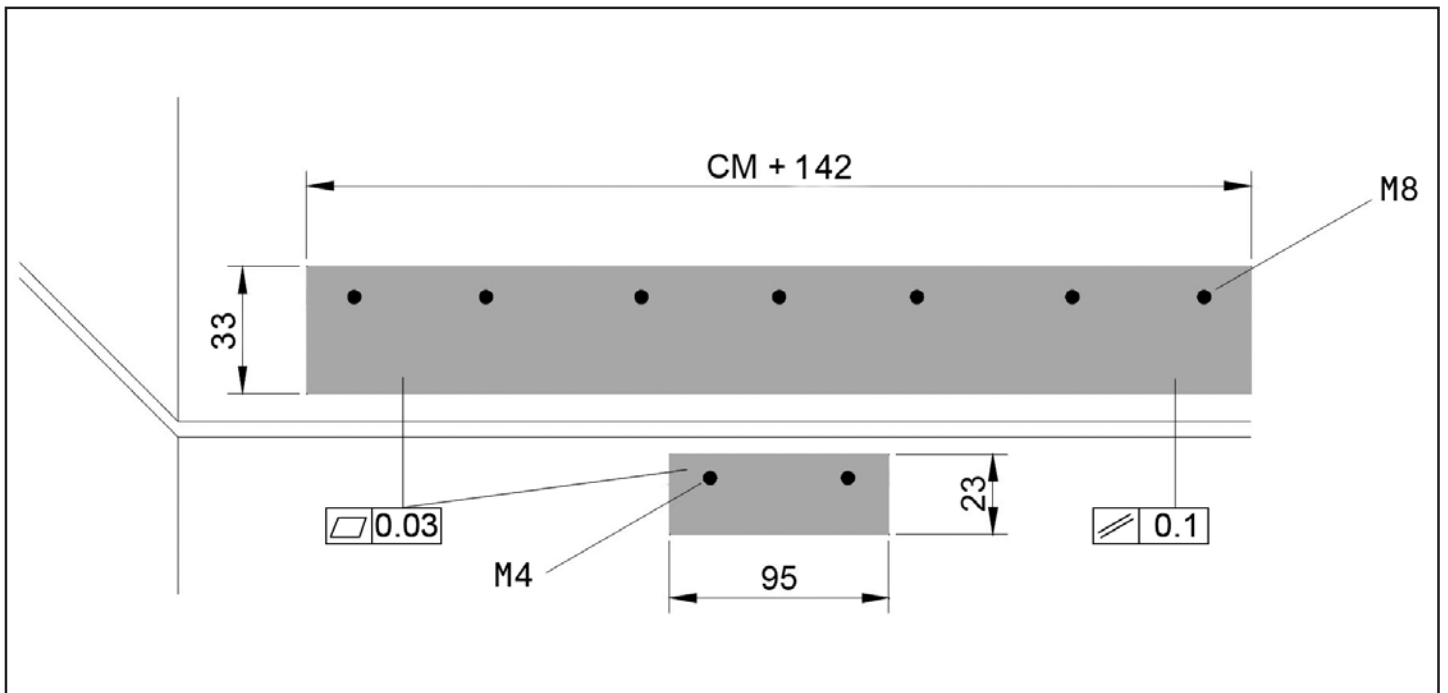


PROCESO DE MONTAJE
MOUNTING PROCESS

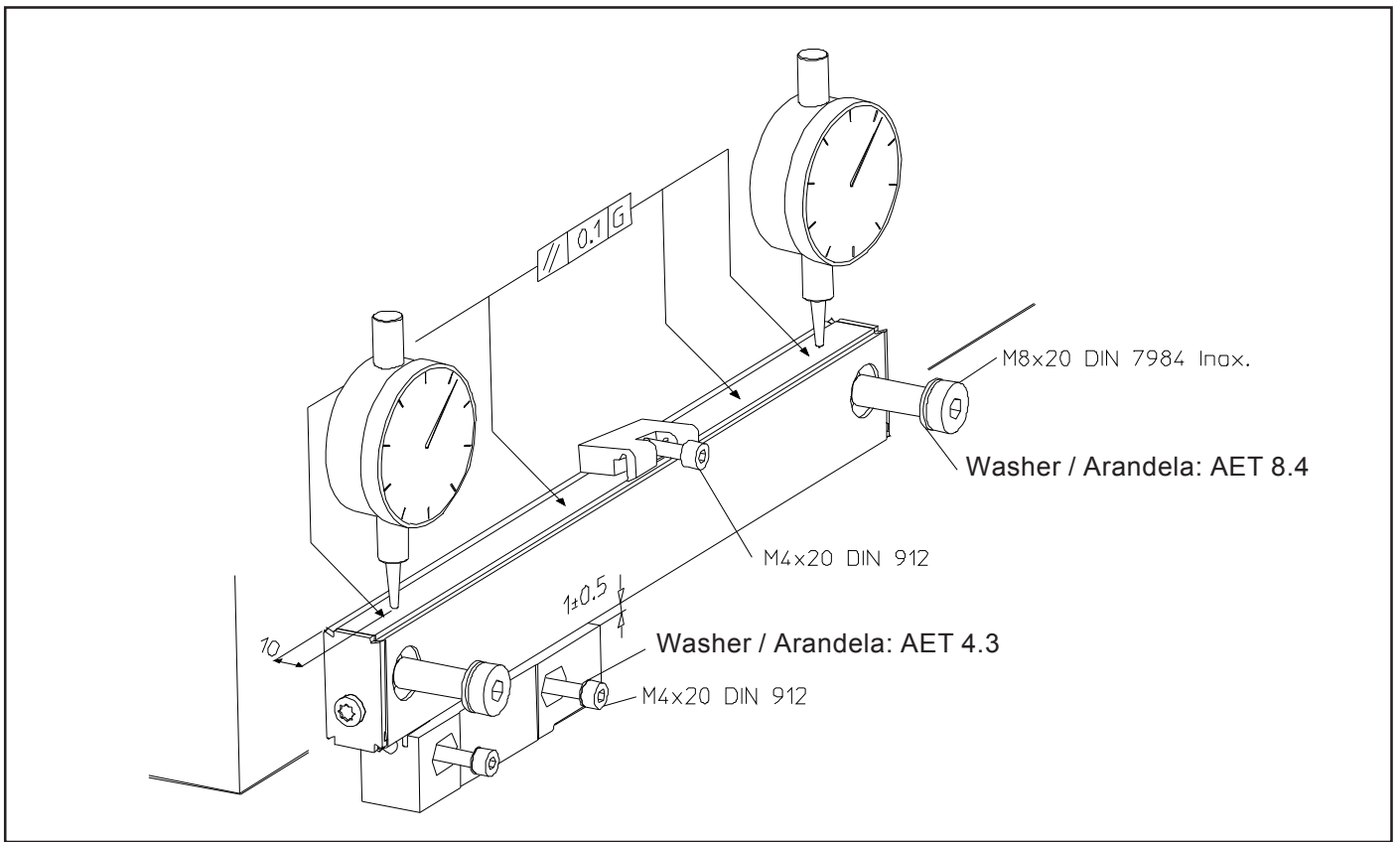


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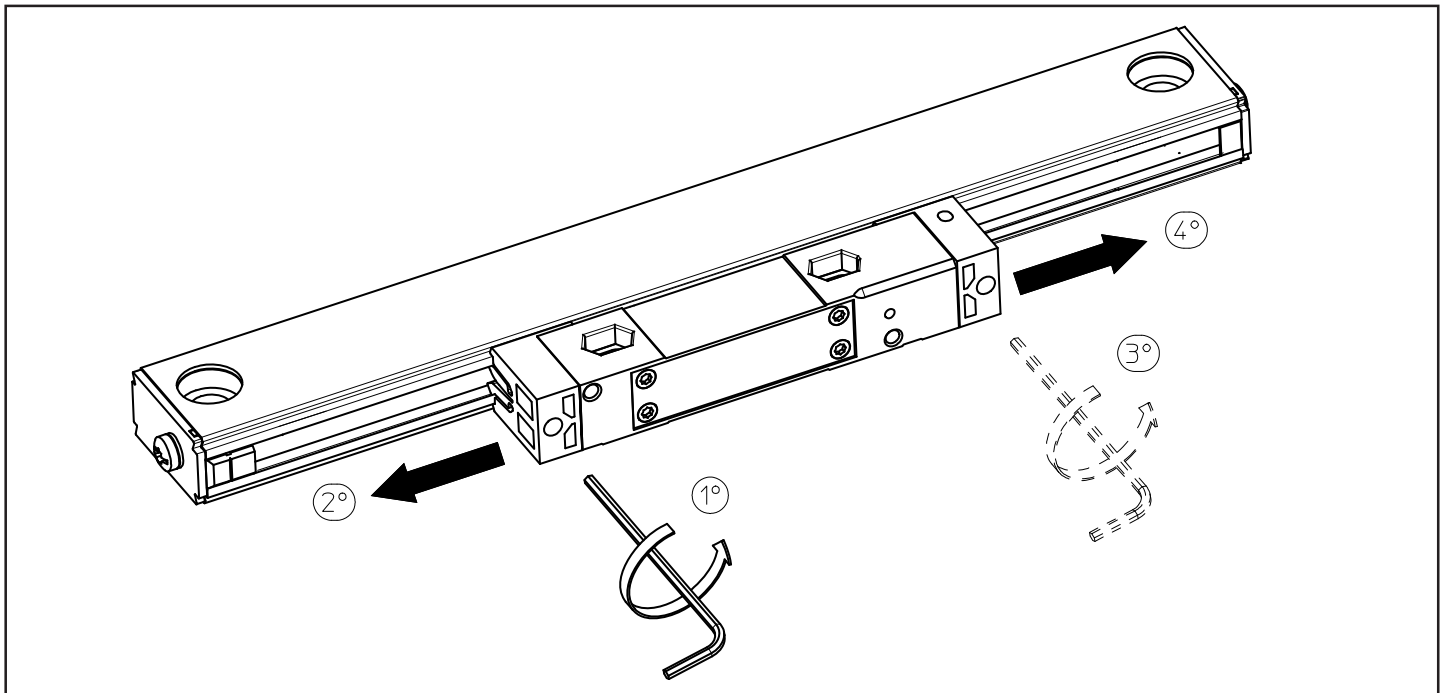
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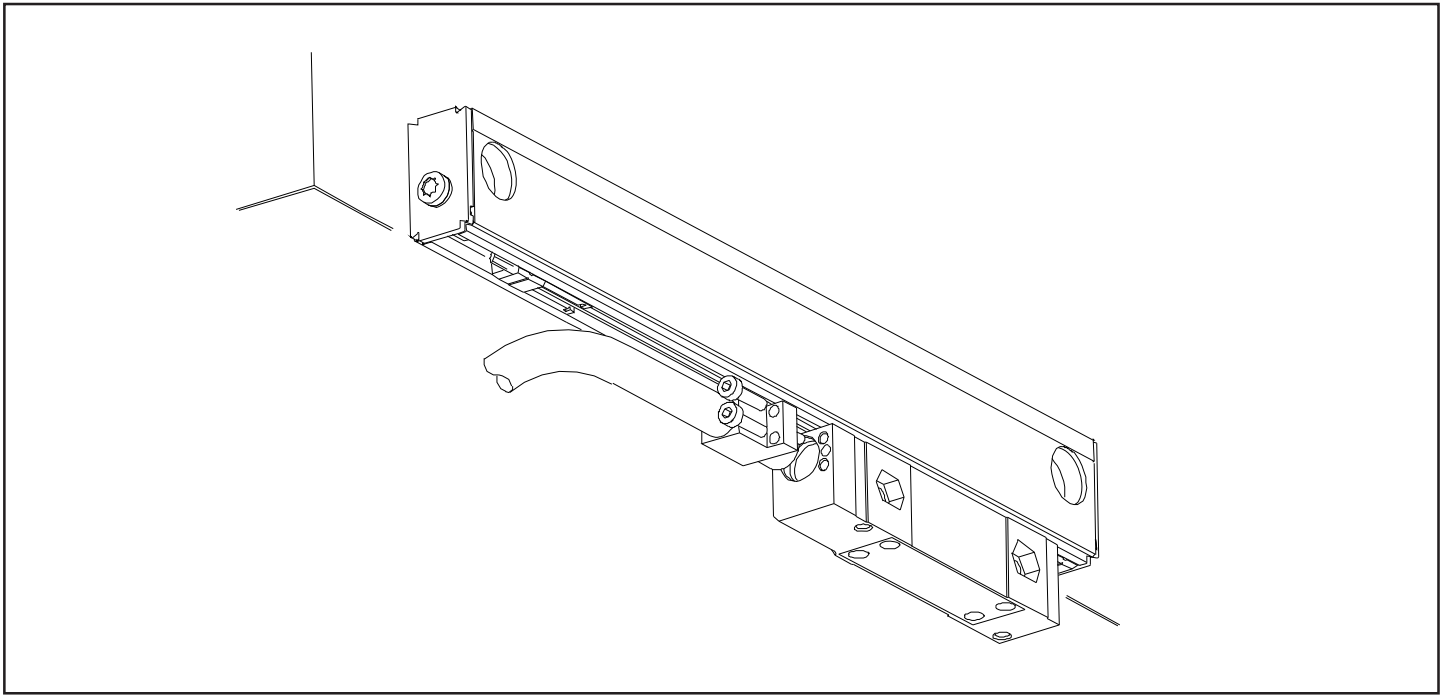
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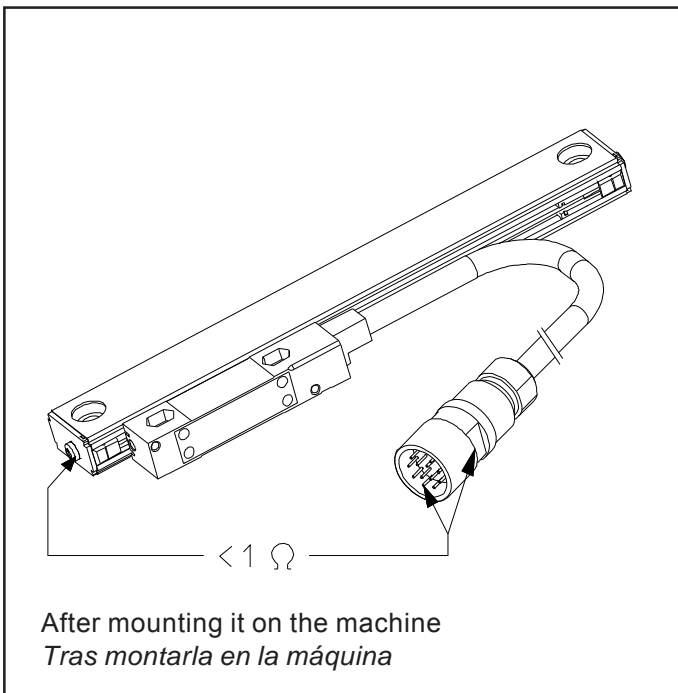
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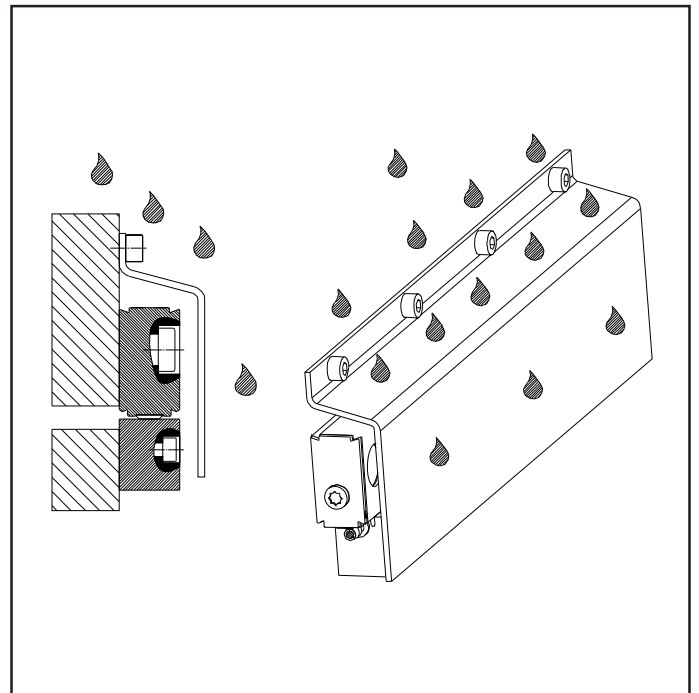
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- 6 -

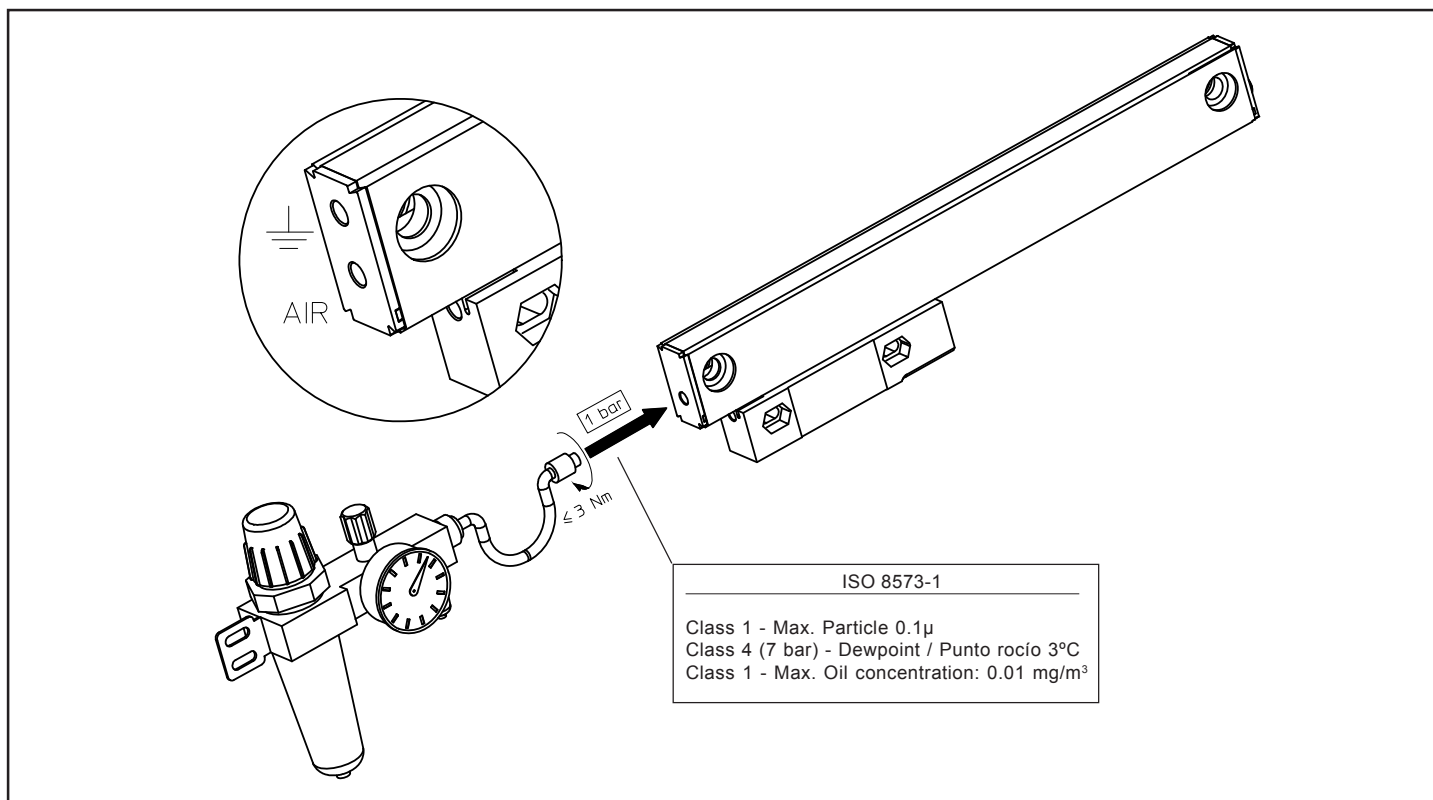


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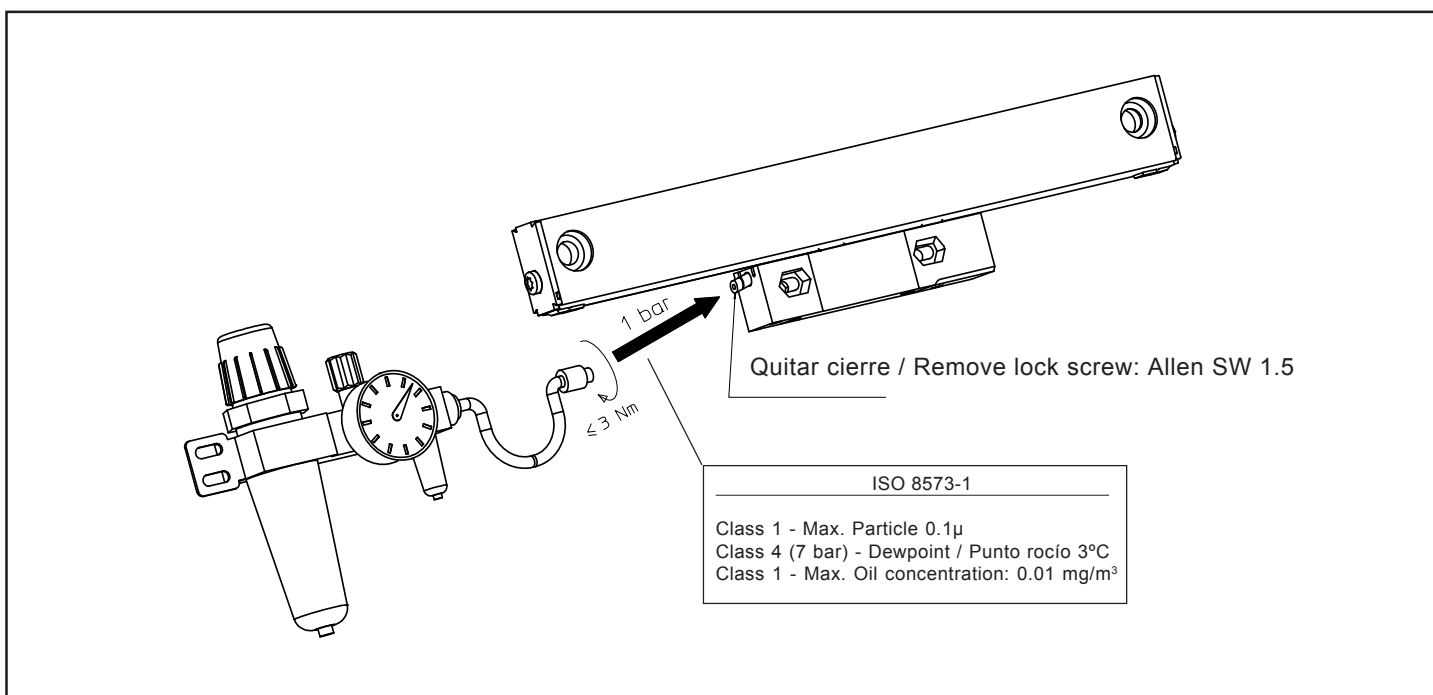


- 8 -

Option. Air intake on the endblock
Opción. Entrada de aire en la regla



Option. Air intake on the reader head
Opción. Entrada de aire en la cabeza



Absolute linear encoder with Fanuc protocol <i>Encoder lineal absoluto con protocolo Fanuc</i>	SAF	SAF10
Resolution <i>Resolución</i>	50 nm	10 nm
Accuracy <i>Precisión</i>	±3 µm / ±5 µm	
Graduated glass pitch <i>Vidrio grabado de periodo</i>	20 µm	
Maximum speed <i>Velocidad máxima</i>	2.5 m/s	3 m/s

MECHANICAL CHARACTERISTICS / CARACTERÍSTICAS

Maximum vibration (55 to 2000 Hz) <i>Vibración máxima (55 a 2000 Hz)</i>	200 m/s ² (20 g)
Shock (11 ms) <i>Impacto (11 ms)</i>	300 m/s ² (30 g)
Moving force <i>Fuerza de desplazamiento</i>	< 4 N
Sealing protection <i>Estanqueidad</i>	IP53
Sealing protection using an air inlet <i>Estanqueidad con dispositivo de entrada de aire</i>	IP64 (DIN 40050)
Working temperature <i>Temperatura de trabajo</i>	0 °C .. 50 °C (32 °F .. 122 °F)
Storage temperature <i>Temperatura almacenamiento</i>	-20 °C ..+70 °C (-4 °F.. 158 °F)
Relative humidity (working or storage) <i>Humedad relativa (trabajo o almacenamiento)</i>	20% ... 80%
Weight <i>Peso</i>	0.25 kg + 0.5 kg/m

ELECTRICAL CHARACTERISTICS / CARACTERÍSTICAS

Power supply voltage <i>Tensión de alimentación</i>	DC 5V ± 10%
Maximum power supply current <i>Corriente de alimentación máxima</i>	250 mA
Maximum cable length <i>Longitud de cable máxima</i>	100 m
Cable bending radius <i>Radio de curvatura del cable</i>	> 75 mm

Note / Nota:

For lengths over 9 meters, a 1m cable and an extension cable must be used whose characteristics are: 4 x 2 x 0.14mm² + 4 x 0.5mm²

Para longitudes superiores a 9 metros, se debe utilizar un cable de 1 m y una alargadera cuyas características sean: 4 x 2 x 0.14mm² + 4 x 0.5mm²

Absolute reference / Referencia absoluta:

The reference position between the reader head and the linear encoder is determined without having to move the axis. The CNC can request the position of the linear encoder at any time.

La posición de referencia entre la cabeza lectora y el encoder lineal se determina sin tener que mover el eje. El CNC puede solicitar la posición del encoder lineal en cualquier momento.

EXTENSION CABLES / ALARGADERAS

Extension Cable Alargadera	XC-C8-xF-C9			XC-C8-x-FN		
Connector	C8	COLOR	C9	C8	COLOR	FN
SIGNAL / SEÑAL	PIN	[(4x0,14mm ²)+2x 4x0,14mm ² +4x0, 5mm ²] COLOR CABLE	PIN	PIN	[(4x0,14mm ²)+2x 4x0,14mm ² +4x0, 5mm ²] COLOR CABLE	PIN
A	15	Verde/Negro Green/Black	15	15	-	-
/A	16	Amarillo/Negro Yellow/Black	16	16	-	-
B	12	Azul/Negro Blue/Black	12	12	-	-
/B	13	Rojo/Negro Red/Black	13	13	-	-
DATA	14	Gris / Gray	14	14	Gris / Gray	1
/DATA	17	Rosa / Pink	17	17	Rosa / Pink	2
REQUEST	8	Violeta / Purple	8	8	Violeta / Purple	5
/ REQUEST	9	Amarillo/Yellow	9	9	Amarillo/Yellow	6
+5V	7	Marrón/Verde Brown/Green	7	7	Marrón/Verde Brown/Green	9
+5V_SENSE	1	Azul / Blue	1	1	Azul / Blue	18 / 20
GND	10	Blanco/Verde White/Green	10	10	Blanco/Verde White/Green	12
GND_SENSE	4	Blanco/White	4	4	Blanco/White	14
Internal SHIELD	11	Int Shield	11	11	-	-
External SHIELD	CARCASA HOUSING	PANTALLA SHIELD	CARCASA HOUSING		PANTALLA SHIELD	16

CABLE		EXTENSION CABLE / ALARGADERA			TOTAL LENGTH
Reference	Connector	Connector	Reference	Connector	
EC-xB-C9	C9	C8	XC-C8-x-FN	FN	* 100 m
EC-xB-C9-N	Round 17-PM/RM	Round 17-PH/RH	XC-C8-xF-C9	C9 - Round 17-PM/RM	
EC-xB-O	No connector				9 m
EC-xB-O-N					

Round = Circular, PM = Male pins, RM= Male thread, PH= Female pins, RH = Female thread, M = Male, H = Female
 PM = Pines macho, RM= Rosca macho, PH= Pines hembra, RH = Rosca hembra, M = Macho, H = Hembra

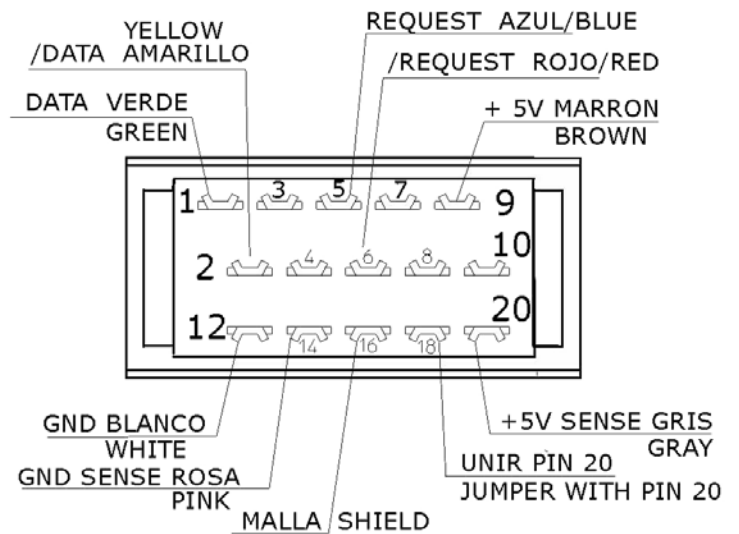
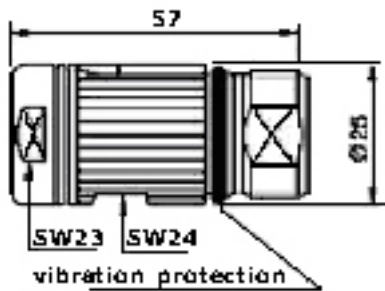
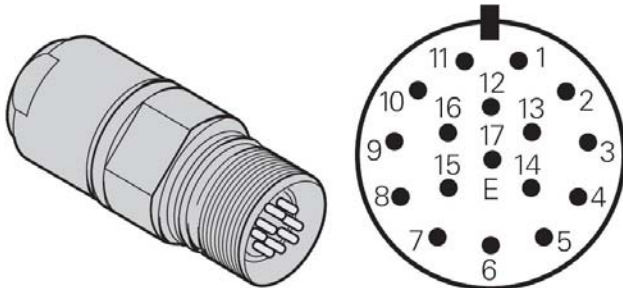
* 100 m guaranteeing that the Vdc of the linear encoder remains at 5V ±10%. * 100 m grantizando que la Vcc en el captador sea 5V ±10%.

CABLES / MANGUERAS

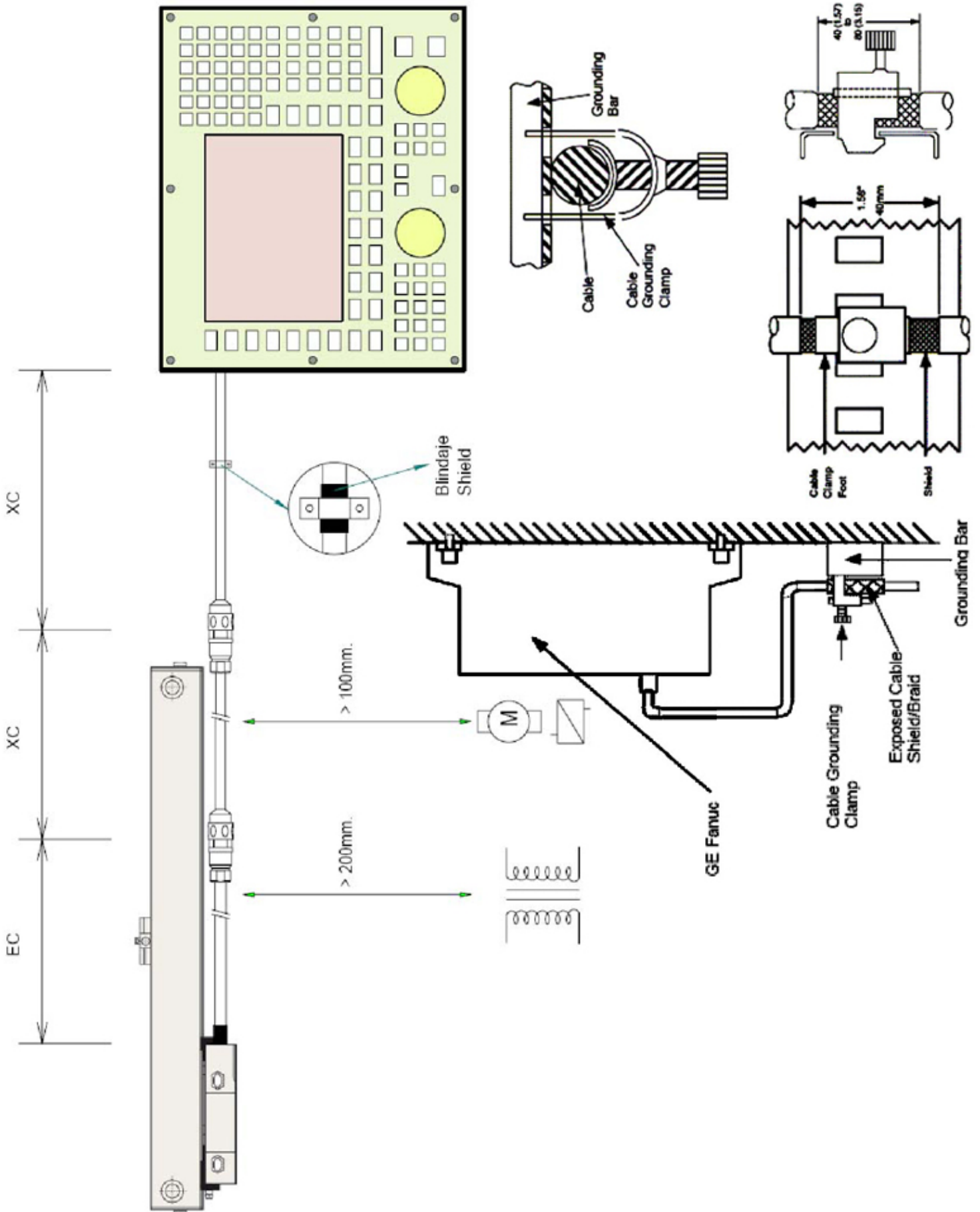
Reference	CABLE [(4x0,08mm ²)+4x0,08mm ² +4x0,14mm ²]				CABLE [4x2x0,14mm ²]		
	EC-B-C9			EC-B-0	EC-PA-FN		
Connector	ROUND / CIRCULAR 17 (M)				-	FN	
SEÑAL / SIGNAL	COLOR	mm ²	PIN	PIN	PIN	COLOR	mm ²
A	Verde/Green	0.08	15	-	-		
/A	Amarillo/Yellow		16	-	-		
B	Azul/Blue		12	-	-		
/B	Rojo/Red		13	-	-		
DATA	Gris/Gray		14	-	1	Verde/Green	
/DATA	Rosa/Pink		17	-	2	Amarillo/Yellow	
REQUEST	Negro/Black		8	-	5	Azul/Blue	
/REQUEST	Violeta/Purple		9	-	6	Rojo/Red	
+5V	Marrón/Brown	0.14	7	-	9	Marrón/Brown	0.14
+5V_SENSE	Rojo-Azul / Verde-claro Red-Blue / Light green		1	-	18/20	Gris/Gray	
0V	Blanco/White		10	-	12	Blanco/White	
0V_SENSE	Gris-Rosa / Naranja		4	-	14	Rosa/Pink	
	Grey-Pink / Orange						
GND	Int. Shield	-	Int Shield	Internal SHIELD	16	PANTALLA SHIELD	0.25
CARCASA HOUSING	PANTALLA SHIELD	-	PANTALLA SHIELD	External SHIELD			

CONNECTOR C9

FANUC CONNECTOR



CONNECTION / CONEXIÓN



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 manipulation, blows, etc. are not covered.

The information described in this manual may be subject to variations due to technical modifications.

FAGOR AUTOMATION, S. Coop. Ltda. reserves the right to modify the contents of this manual without prior notice.

GARANTIA

- * 12 meses desde fecha de expedición de fábrica.
- * Cubre gastos de Materiales y Mano de Obra de reparación en FAGOR AUTOMATION.
- * Gastos de desplazamiento a cargo del cliente.
- * No cubre averías por causas ajenas a FAGOR AUTOMATION, como: golpes, manipulación por personal no autorizado, etc.

La información descrita en este manual puede estar sujeta a variaciones motivadas por modificaciones técnicas.

FAGOR AUTOMATION S. Coop. Ltda. se reserva el derecho de modificar su contenido, no estando obligada a notificar las variaciones.

DECLARATION OF CONFORMITY

Manufacturer: Fagor Automation, S. Coop.

Barrio de San Andrés s/n, 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

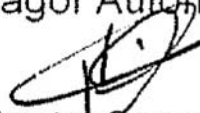
EN 61000-6-4:2007 Standard on emission in industrial environments

According to the European Directive:

2004/108/CE on electromagnetic compatibility.

Mondragón September 1st 2009

Fagor Automation, S. Coop.


Director Gerente
Pedro Ruiz de Aguirre

DECLARACION DE CONFORMIDAD

Fabricante: Fagor Automation, S. Coop.

Barrio de San Andrés s/n, 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.

Bº San Andrés Nº19

Apdo Correos 144

20500 - Arrasate/Mondragón

- Spain -

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Fax: (34) 943 791712

FAGOR 