



# HEIDENHAIN

Montageanleitung  
*Mounting Instructions*  
Instructions de montage  
*Istruzioni di montaggio*  
Instrucciones de montaje

**LS 106**

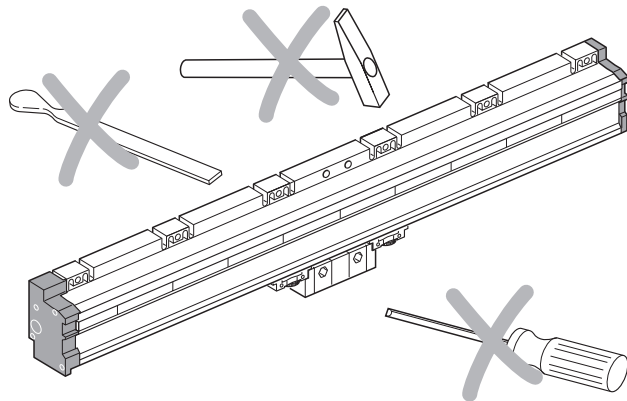
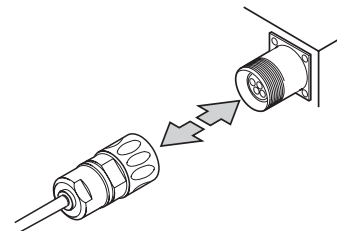
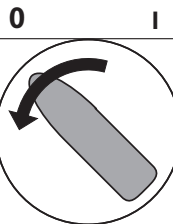
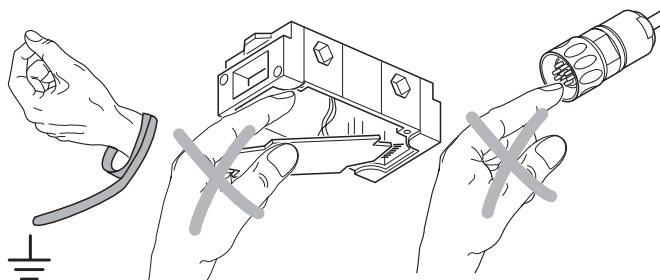
**LS 176**

**LS 186**

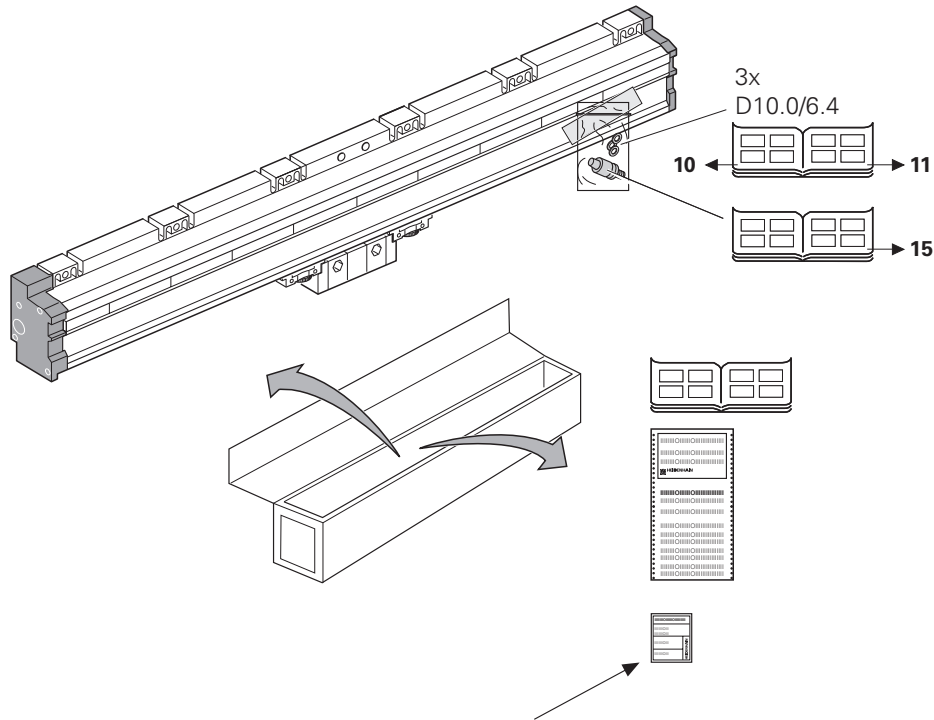
2/2002



DIN EN 100 015 – 1  
CECC 00015 – 1



Maße in mm  
Dimensions in mm  
Cotes en mm  
Dimensioni in mm  
Dimensiones en mm



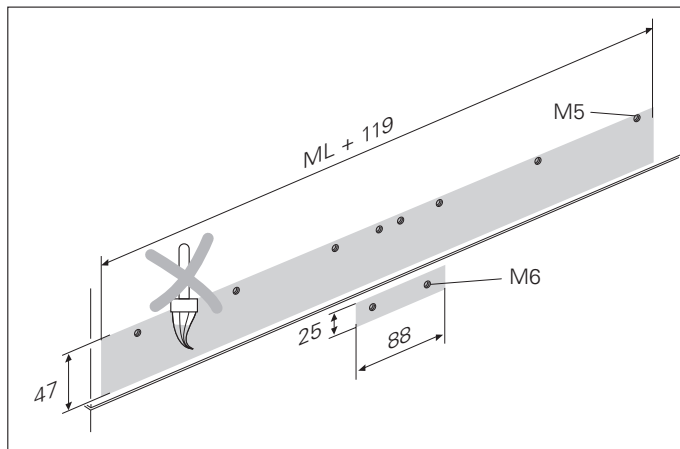
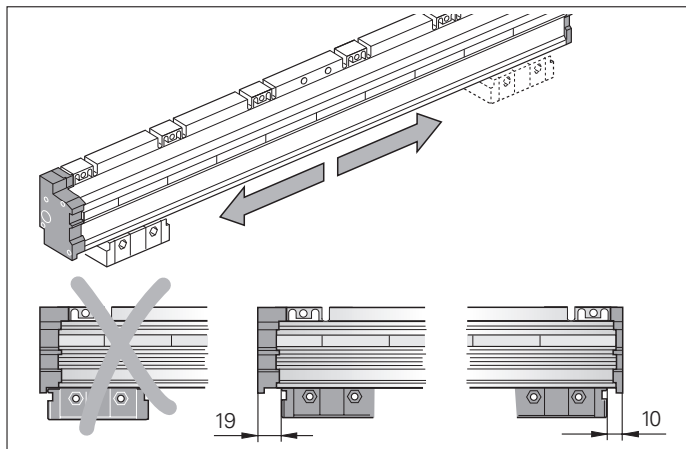
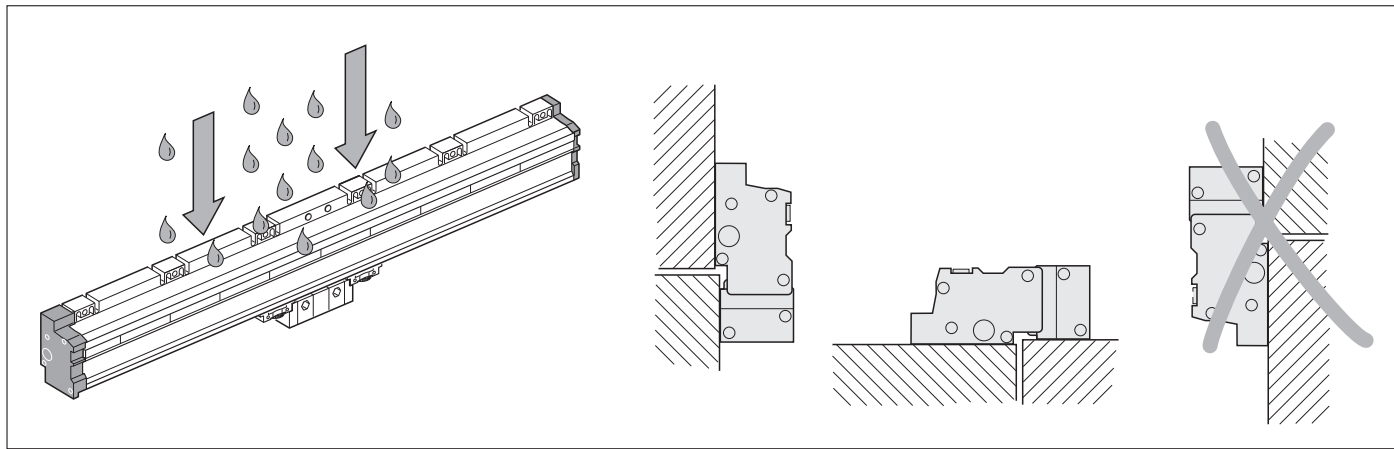
Bei Montage bitte Geräteschild-Aufkleber anbringen (Schaltschrank, Maschinen-Handbuch usw.)

Apply the encoder ID label to an appropriate surface, e.g. the electrical cabinet or machine manual

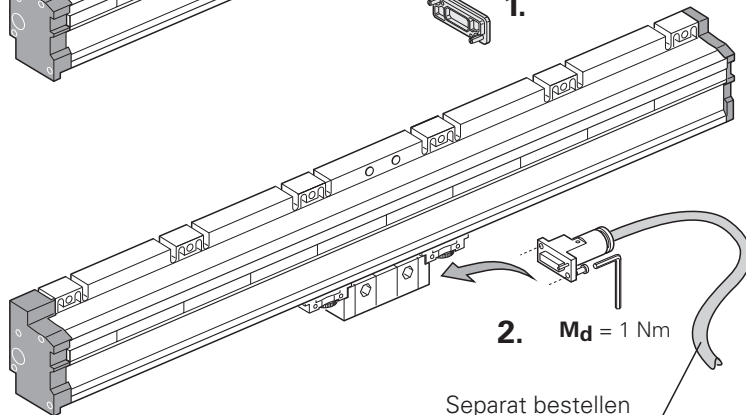
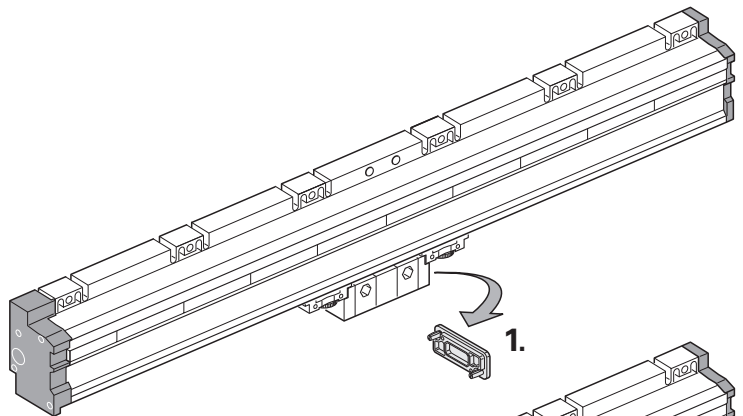
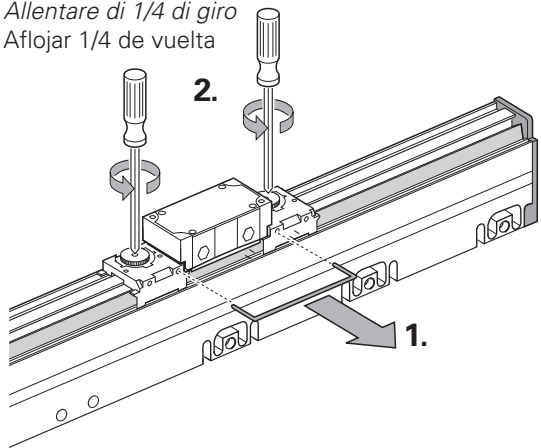
Lors du montage, accoler S.V.P. l'étiquette signalétique de l'appareil (armoire électrique, manuel de la machine, etc.)

Completato il montaggio, ricordarsi di applicare l'etichetta (manuale della macchina, quadro elettrico)

Por favor, durante el montaje, colocar el adhesivo del letrero del aparato (armario eléctrico, modo de empleo de la máquina, etc.)



1/4 Umdrehung lösen  
Loosen by 1/4 revolution  
Dévisser de 1/4 de tour  
Allentare di 1/4 di giro  
Aflojar 1/4 de vuelta



Separat bestellen  
Order separately  
Commander séparément  
Ordinare separatamente  
Pedir por separado

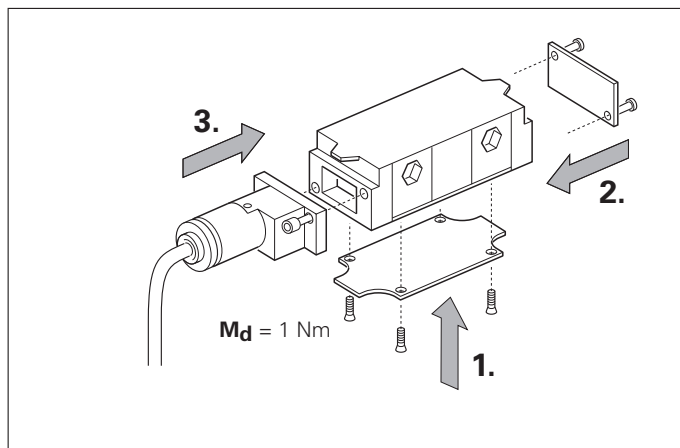
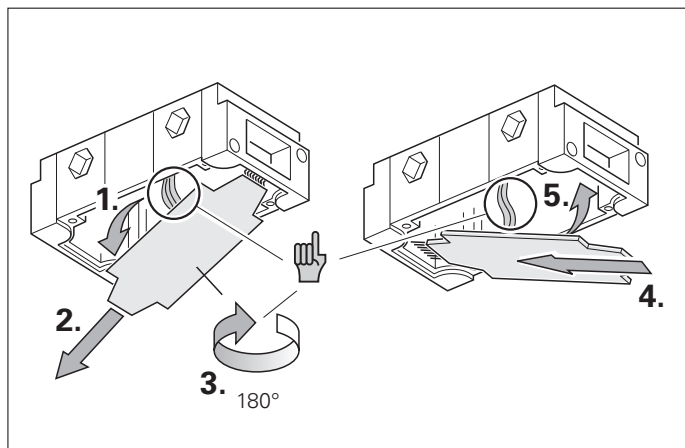
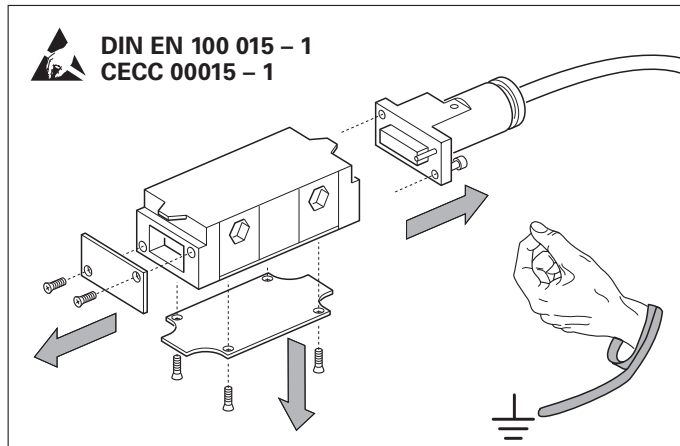
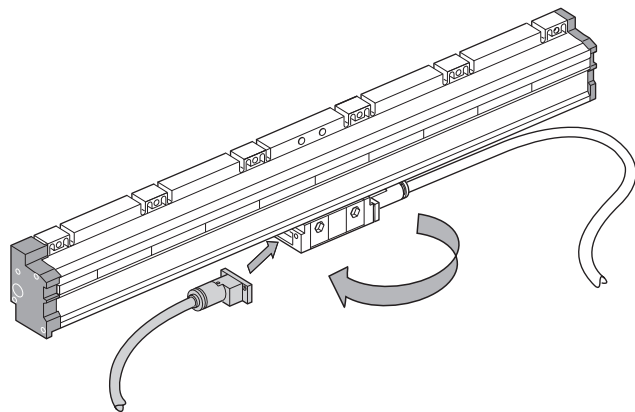
Kabelausgang  
verlegen

· Changing the  
Cable Outlet

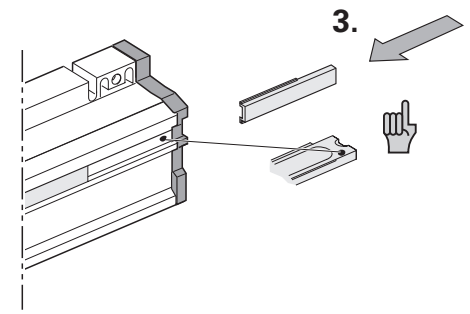
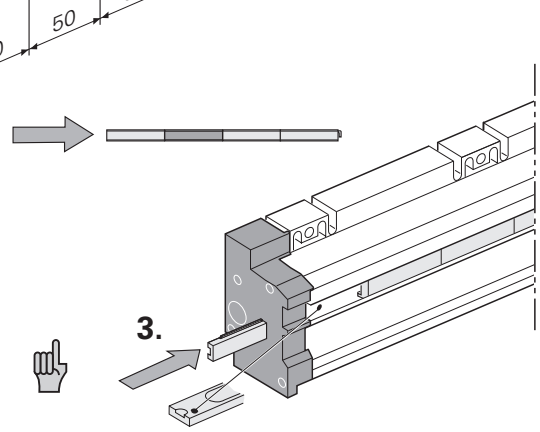
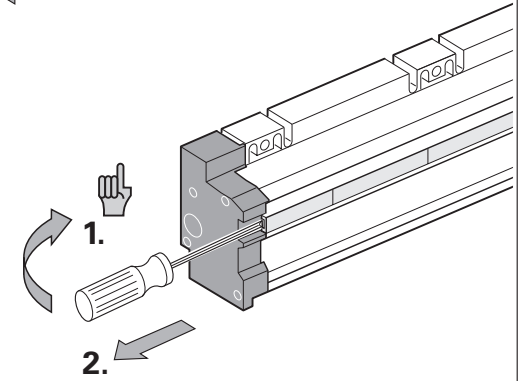
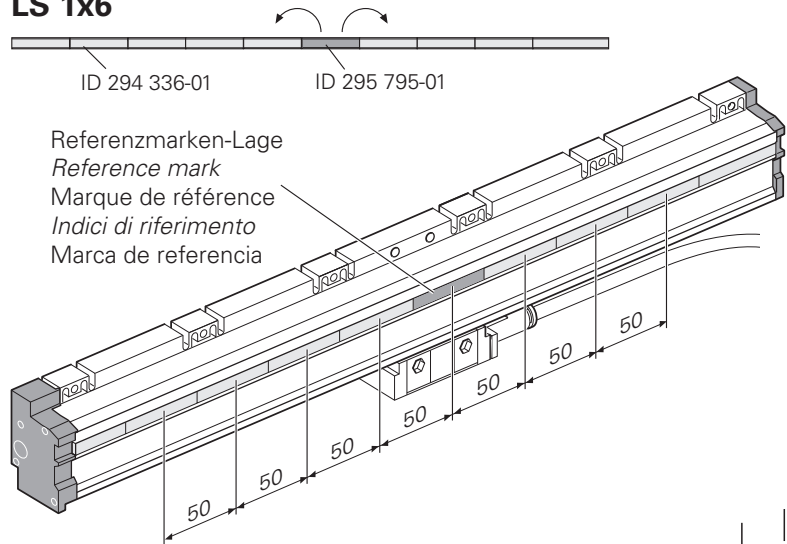
· Poser  
la sortie du câble

· Configurazione  
dell'uscita del cavo

· Colocar  
cable de salida



**LS 1x6**







mm



Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm:  $\pm 0.2$  mm

F = Maschinenführung  
*Machine guideway*  
Guidage de la machine  
*Guida della macchina*  
Guía de la máquina

Ⓧ = Druckluftanschluss  
*Compressed air inlet*  
Raccordement d'air comprimé  
*Ingresso per pressurizzazione*  
Conexión de aire comprimido

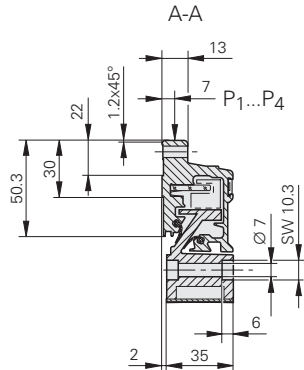
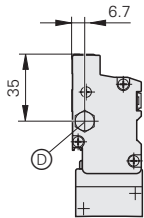
Ⓡ = Referenzmarken-Lage LS 106/LS 176/LS 186  
*Reference mark position LS 106/LS 176/LS 186*  
Marque de référence LS 106/LS 176/LS 186  
*Indici di riferimento LS 106/LS 176/LS 186*  
Marca de referencia LS 106/LS 176/LS 186

Ⓒ = Referenzmarken-Lage LS 106 C/LS 176 C/LS 186 C  
*Reference mark position LS 106 C/LS 176 C/LS 186 C*  
Marque de référence LS 106 C/LS 176 C/LS 186 C  
*Indici di riferimento LS 106 C/LS 176 C/LS 186 C*  
Marca de referencia LS 106 C/LS 176 C/LS 186 C

Ⓢ = Beginn der Messlänge ML  
*Begin. of meas. length ML*  
Début longueur utile ML  
*Inizio lunghezza di misura ML*  
Comienzo longitud útil ML

P = Messpunkte zum Ausrichten  
*Gauging points for alignment*  
Points de mesure pour dé gauchissage  
*Punti di misura per allineamento*  
Puntos medición alineamiento

Ⓚ = Kundenseitige Anschlussmaße  
*Required mating dimensions*  
Conditions requises pour le montage  
*Dimensioni di collegamento lato cliente*  
Cotas de montaje requeridas

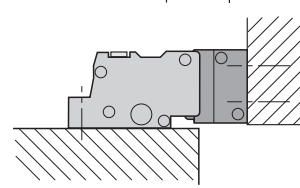
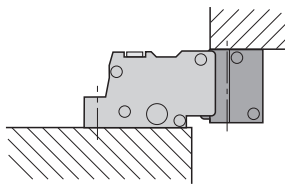
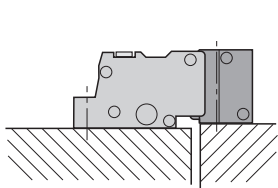
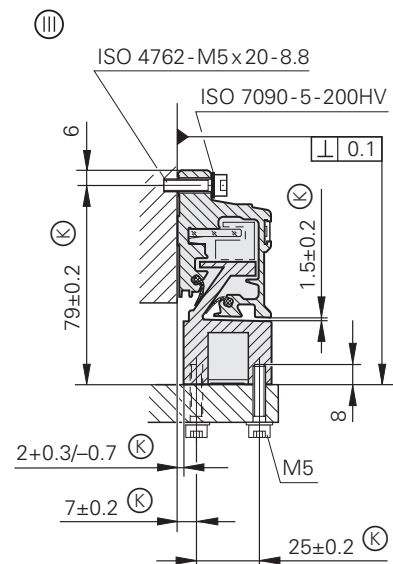
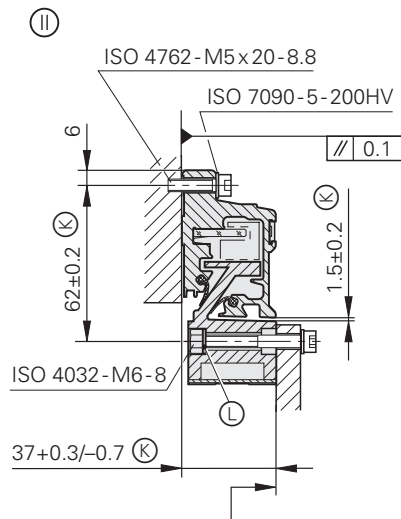
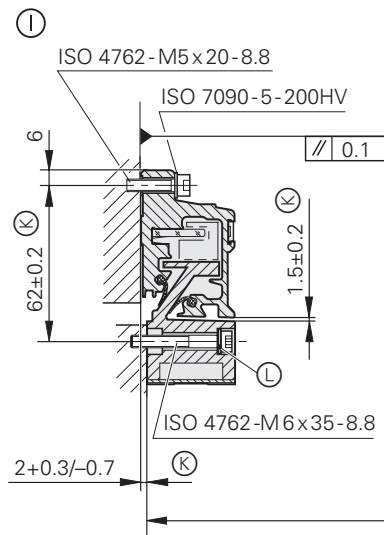


# Anbaumaße · Mounting Dimensions · Cote d'encombrement · Dimensioni di montaggio · Medidas para el montaje

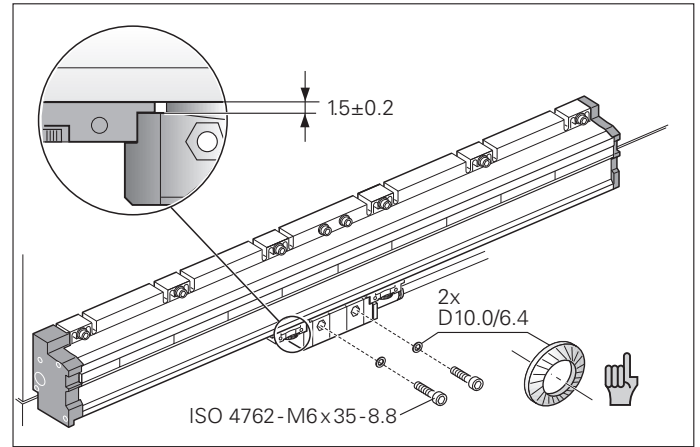
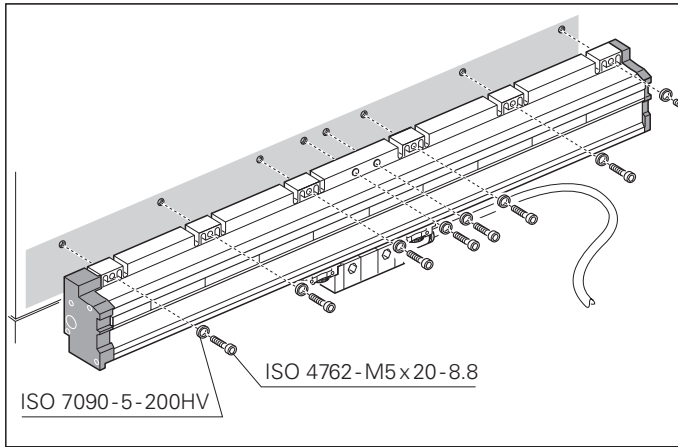
①②③ = Montage-Möglichkeiten  
 Mounting possibilities  
 Options de montage  
 Possibilità di montaggio  
 Posibilidades de montaje

Ⓚ = Kundenseitige Anschlussmaße  
 Required mating dimensions  
 Conditions requises pour le montage  
 Dimensioni di collegamento lato cliente  
 Cotas de montaje requeridas

Ⓛ = Rippenscheibe D10.0/6.4 (Zubehör)  
 Ribbed lock washer D10.0/6.4 (accessories)  
 Rondelle à nervures D10.0/6.4 (accessoires)  
 Rondella alettata D10.0/6.4 (Accessori)  
 Arandela nervada D10.0/6.4 (Accesorios)

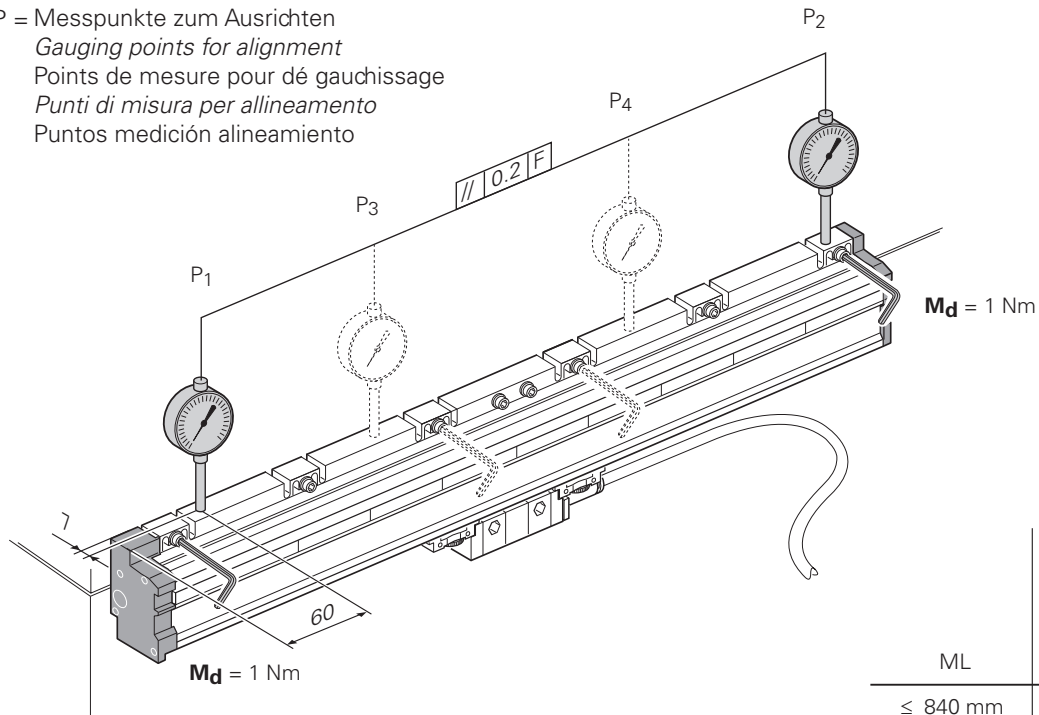


Anbau · Mounting · Montage · Montaggio · Instalación

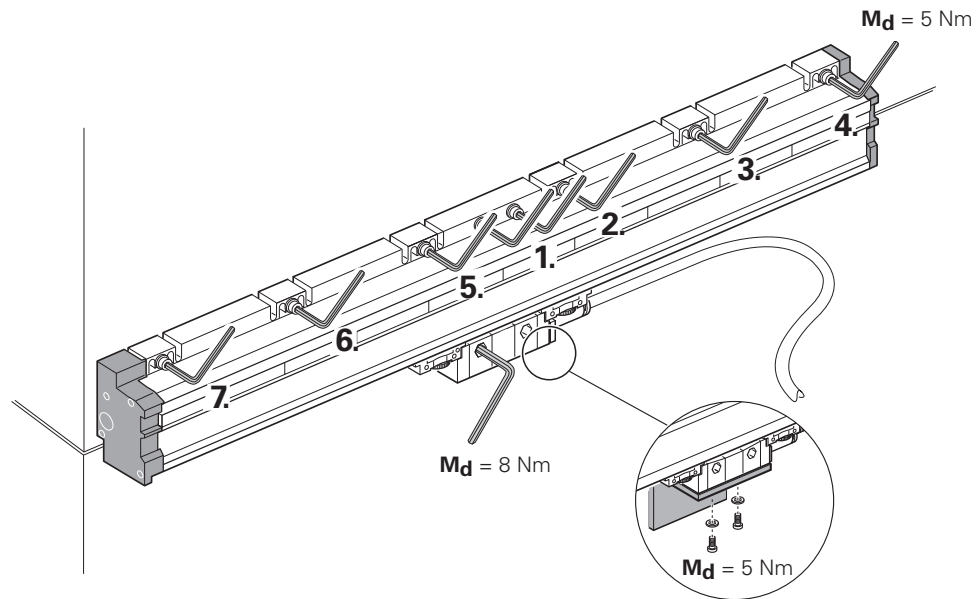


Ausrichten · Alignment · Alignement · Allineamento · Alinear

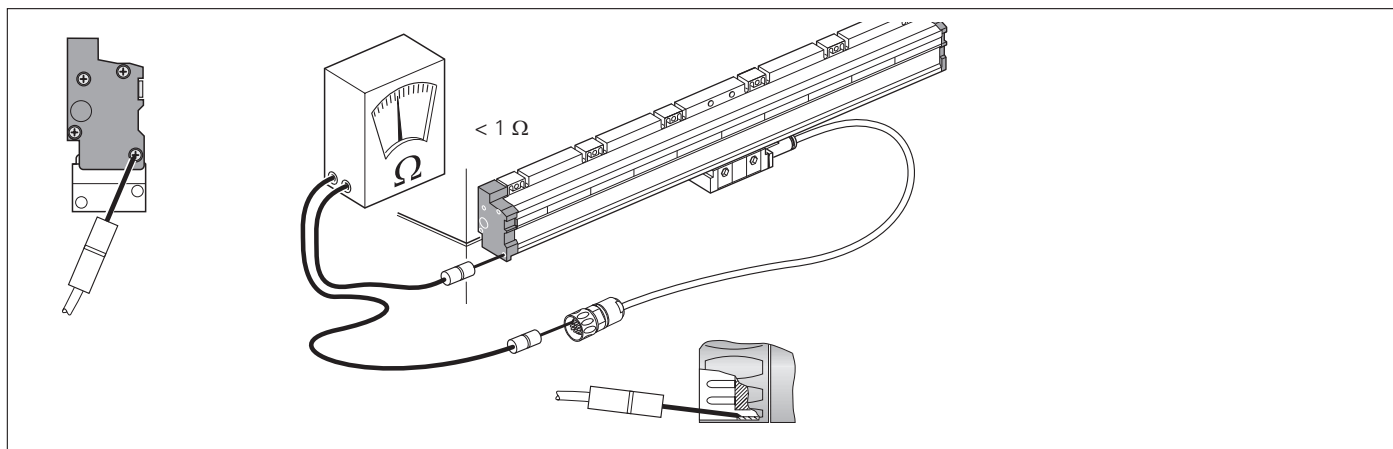
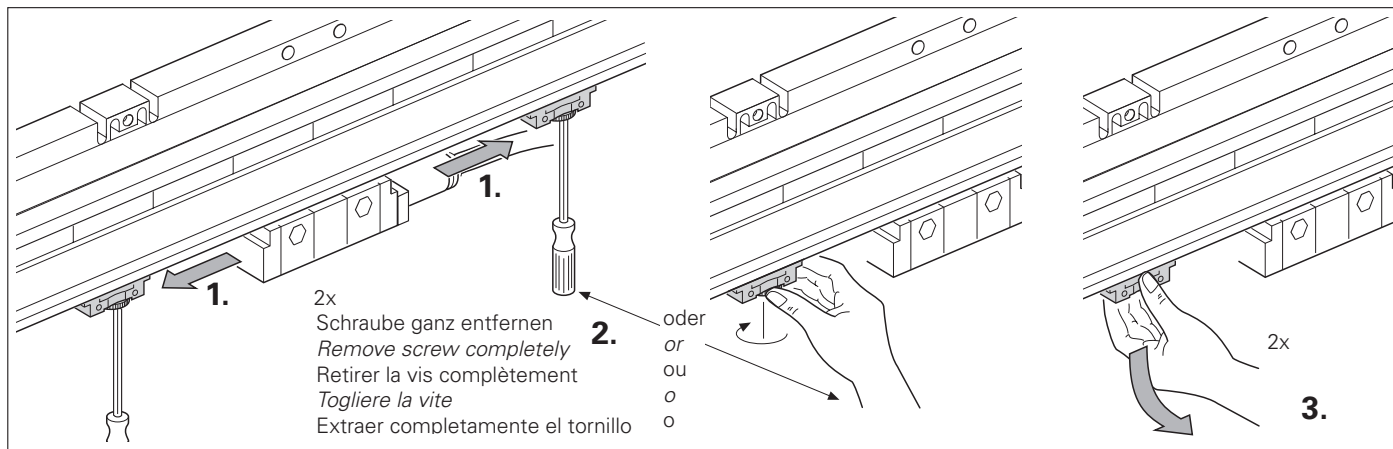
P = Messpunkte zum Ausrichten  
*Gauging points for alignment*  
 Points de mesure pour dégauchissage  
*Punti di misura per allineamento*  
 Puntos medición alineamiento



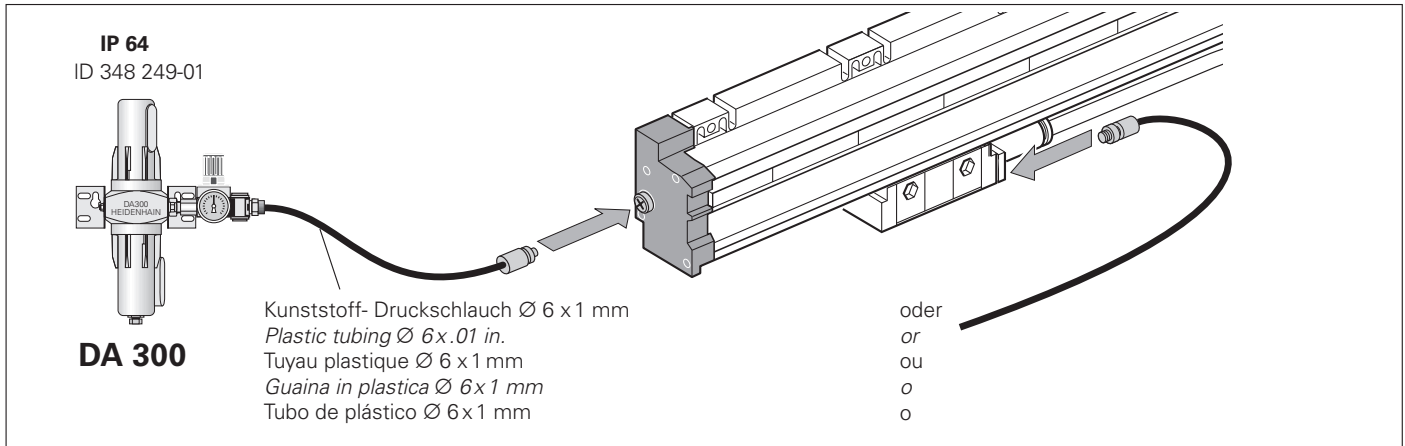
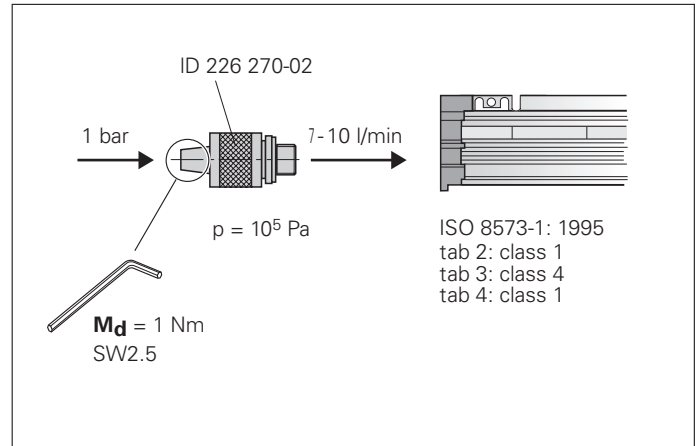
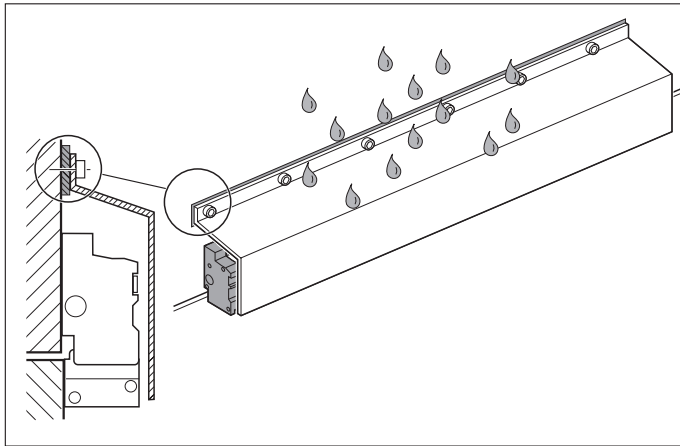
ML	
≤ 840 mm	<b>2x</b>
≤ 1740 mm	<b>3x</b>
≤ 3040 mm	<b>4x</b>



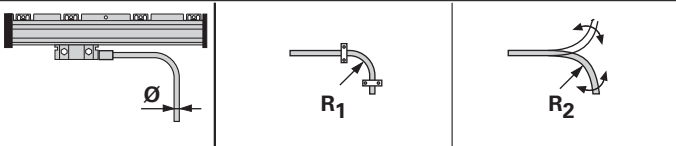

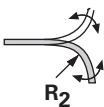

Abschließende Arbeiten · Final Steps · Opérations finales · Operazioni finali · Trabajos finales

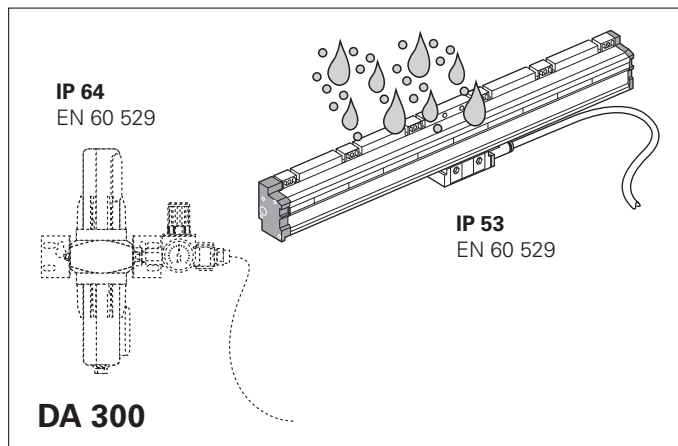


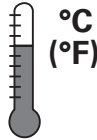
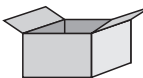
**Schutzmaßnahmen · Protective Measures · Mesures préventives · Precauzioni · Medidas de protección**



Technische Kennwerte · Specifications · Caractéristiques techniques · Dati tecnici · Datos técnicos

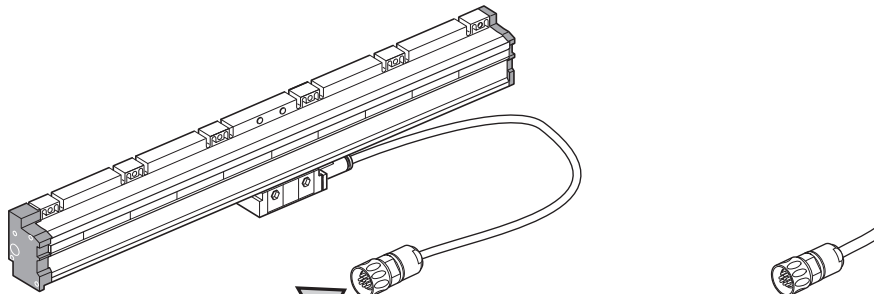
		
<b>Ø 6 mm</b>	$R_1 \geq 20 \text{ mm}$	$R_2 \geq 75 \text{ mm}$
<b>Ø 10 mm</b>	$R_1 \geq 35 \text{ mm}$	$R_2 \geq 75 \text{ mm}$
 <b>Ø 8 mm</b>	$R_1 \geq 40 \text{ mm}$	$R_2 \geq 100 \text{ mm}$



		$-20 \dots 70 \text{ } ^\circ\text{C}$ $(- 4 \dots 158 \text{ } ^\circ\text{F})$
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## LS 106/LS 106C

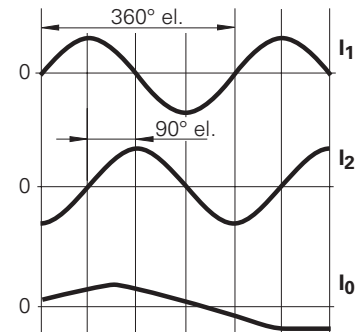


$U_p = 5V \pm 5\%$   
(max. 100 mA)

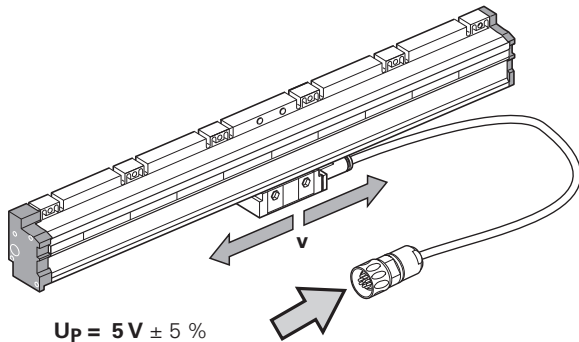


EN 50 178/4.98; 5.2.9.5  
IEC 364-4-41: 1992; 411(PELV/SELV)  
(siehe, see, voir, vedi, véase  
HEIDENHAIN D 231 929)


$I_1: 7 \dots 16 \mu A_{SS}$   
 $I_2: 7 \dots 16 \mu A_{SS}$   
 $I_0: 2 \dots 8 \mu A$



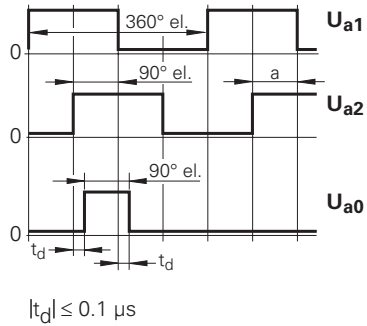
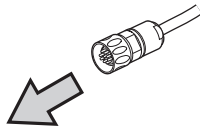
## LS 176/LS 176 C



$U_p = 5\text{ V} \pm 5\%$   
(max. 140 mA)

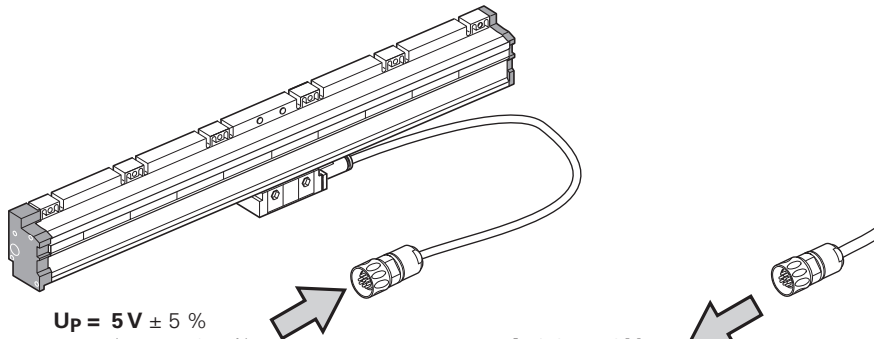
 EN 50 178/4.98; 5.2.9.5  
IEC 364-4-41: 1992; 411(PELV/SELV)  
(siehe, see, voir, vedi, véase  
HEIDENHAIN D 231 929)

$U_{a1}, U_{a2}, U_{a0}$   
 $\overline{U_{a1}}, \overline{U_{a2}}, \overline{U_{a0}}, \overline{U_{aS}}$



	$v$	
	120 m/min	60 m/min
$a \hat{=} 1\ \mu\text{m}$	0.5 $\mu\text{s}$	1 $\mu\text{s}$
$a \hat{=} 0.5\ \mu\text{m}$	/	0.5 $\mu\text{s}$

## LS 186/LS 186 C

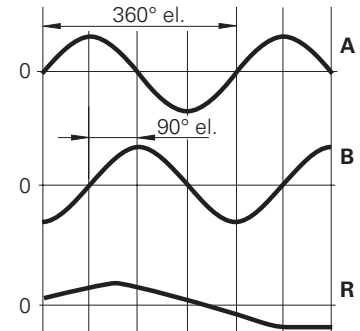


**$U_p = 5\text{ V} \pm 5\%$**   
(max. 150 mA)

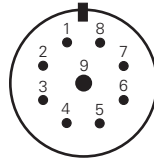
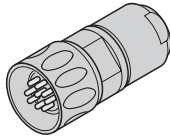


EN 50 178/4.98; 5.2.9.5  
IEC 364-4-41: 1992; 411 (PELV/SELV)  
(siehe, see, voir, vedi, véase  
HEIDENHAIN D231 929)

**A: 0.6 ... 1.2  $V_{SS}$**   
**B: 0.6 ... 1.2  $V_{SS}$**   
**R: 0.2 ... 0.85 V**



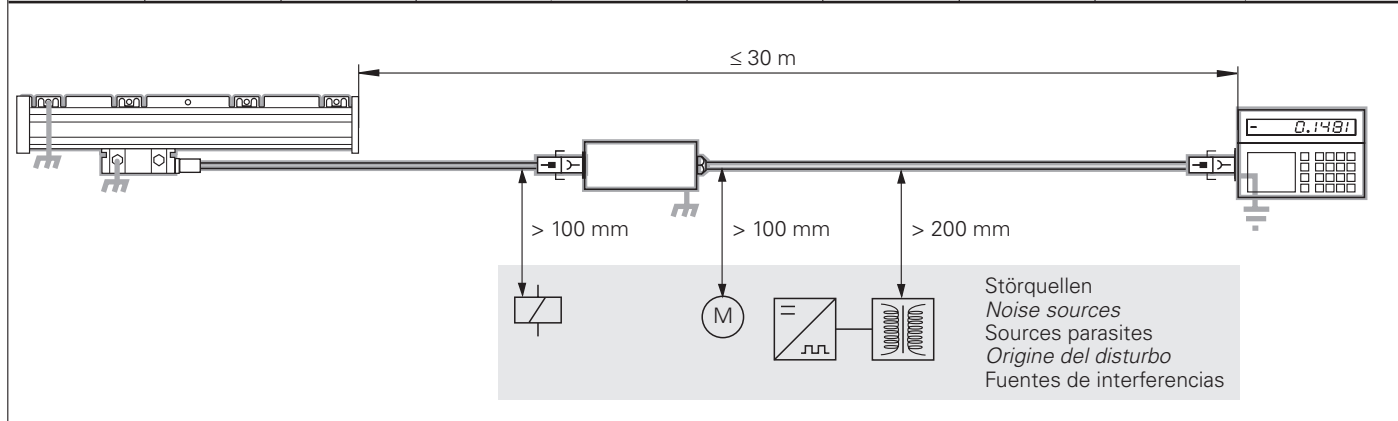
## LS 106/LS 106 C



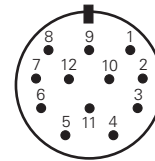
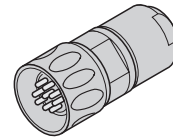
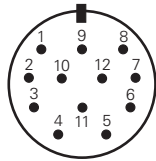
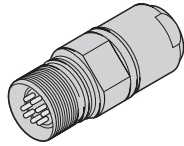
1) Außenschirm auf Gehäuse  
*External shield on housing*  
 Blindage externe sur boîtier  
*Schermo esterno sulla carcassa*  
 Blindaje externo a carcasa

2) Innenschirm Pin 9  
*Internal shield pin 9*  
 Blindage interne pin 9  
*Schermo interno pin 9*  
 Blindaje interno pin 9

1	2	5	6	7	8	3	4	1)	9
I <sub>1</sub>		I <sub>2</sub>		I <sub>0</sub>		5 V U <sub>P</sub>	0 V U <sub>N</sub>		2)
+	-	+	-	+	-				
grün <i>green</i> vert <i>verde</i> verde	gelb <i>yellow</i> jaune <i>giallo</i> amarillo	blau <i>blue</i> bleu <i>azzurro</i> azul	rot <i>red</i> rouge <i>rosso</i> rojo	grau <i>gray</i> gris <i>grigio</i> gris	rosa <i>pink</i> rose <i>rosa</i> rosa	braun <i>brown</i> brun <i>marrone</i> marrón	weiß <i>white</i> blanc <i>bianco</i> blanco		

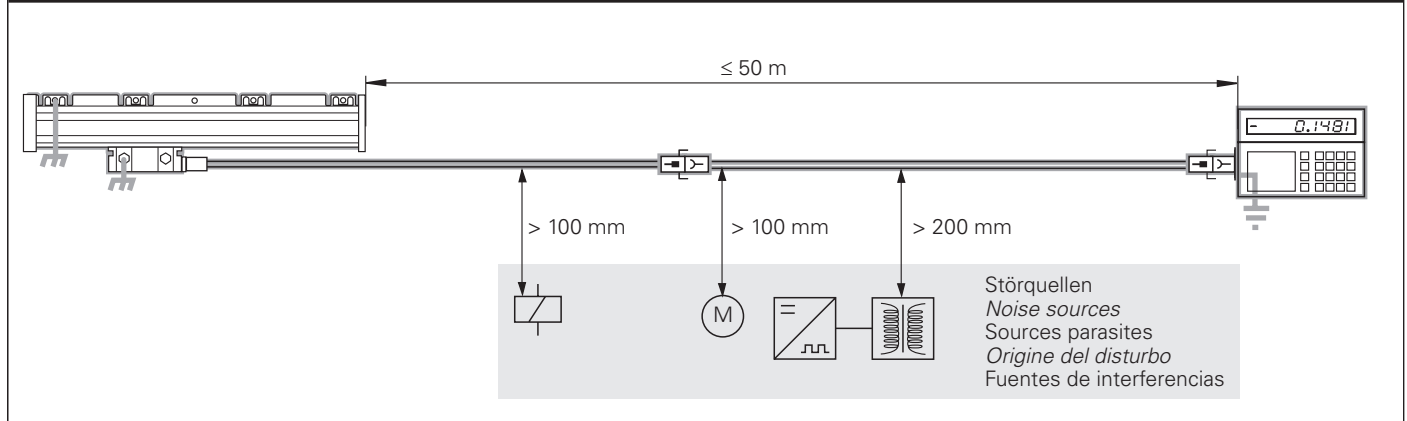


# LS 176/LS 176C

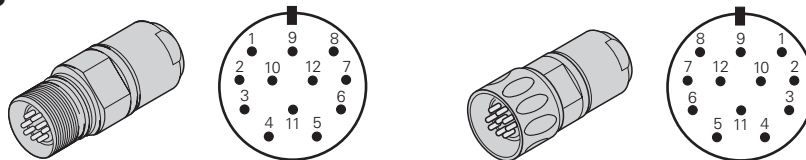


Schirm auf Gehäuse  
 Shield on housing  
 Blindage sur boîtier  
 Schermo sulla carcassa  
 Blindaje a carcasa

5	6	8	1	3	4	12	10	2	11	7	/
$U_{a1}$	$\overline{U_{a1}}$	$U_{a2}$	$\overline{U_{a2}}$	$U_{a0}$	$\overline{U_{a0}}$	5V $U_p$	0V $U_N$	5V sensor	0V sensor	$\overline{U_{aS}}$	/
braun <i>brown</i> brun <i>marrone</i> marrón	grün <i>green</i> vert <i>verde</i> verde	grau <i>gray</i> gris <i>grigio</i> gris	rosa <i>pink</i> rose <i>rosa</i> rosa	rot <i>red</i> rouge <i>rosso</i> rojo	schwarz <i>black</i> noir <i>nero</i> negro	braun/grün <i>brown/green</i> brun/vert <i>marrone/verde</i> marron/verde	weiß/grün <i>white/green</i> blanc/vert <i>bianco/verde</i> blanco/verde	blau <i>blue</i> bleu <i>azzurro</i> azul	weiß <i>white</i> blanc <i>bianco</i> blanco	violett <i>violet</i> violet <i>viola</i> violeta	gelb <i>yellow</i> jaune <i>giallo</i> amarillo

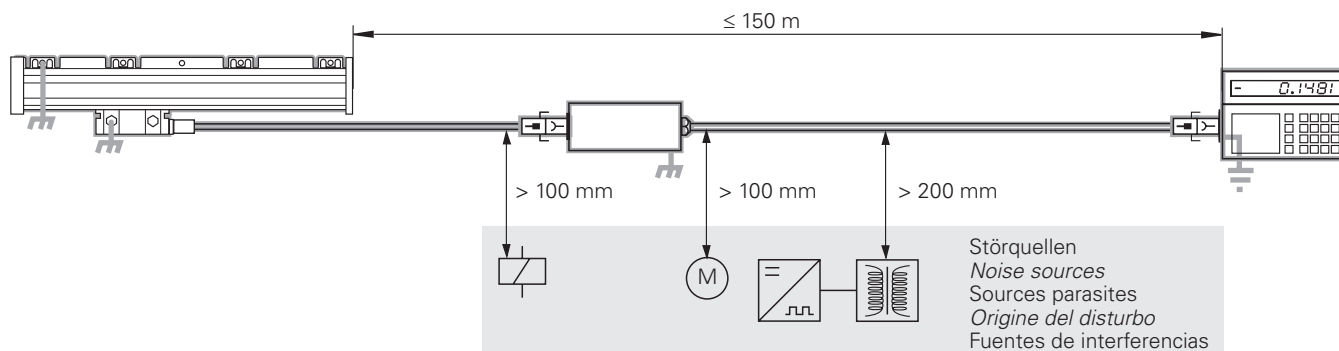


## LS 186/LS 186 C



Schirm auf Gehäuse  
*Shield on housing*  
 Blindage sur boîtier  
*Schermo sulla carcassa*  
 Blindaje a carcasa

5	6	8	1	3	4	2	11	12	10	/	7	9
<b>A</b>		<b>B</b>		<b>R</b>		<b>5V sensor</b>	<b>0V sensor</b>	<b>5V U<sub>P</sub></b>	<b>0V U<sub>N</sub></b>	/	/	/
+	-	+	-	+	-							
braun <i>brown</i> brun <i>marrone</i> marrón	grün <i>green</i> vert <i>verde</i> verde	grau <i>gray</i> gris <i>grigio</i> gris	rosa <i>pink</i> rose <i>rosa</i> rosa	rot <i>red</i> rouge <i>rosso</i> rojo	schwarz <i>black</i> noir <i>nero</i> negro	blau <i>blue</i> bleu <i>azzurro</i> azul	weiß <i>white</i> blanc <i>bianco</i> blanco	braun/grün <i>brown/green</i> brun/vert <i>marrone/verde</i> marron/verde	weiß/grün <i>white/green</i> blanc/vert <i>bianco/verde</i> blanco/verde	gelb <i>yellow</i> jaune <i>giallo</i> amarillo	violett <i>violet</i> violet <i>viola</i> violeta	



# HEIDENHAIN

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