



# HEIDENHAIN

## SALES & SERVICE:

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## LS 106

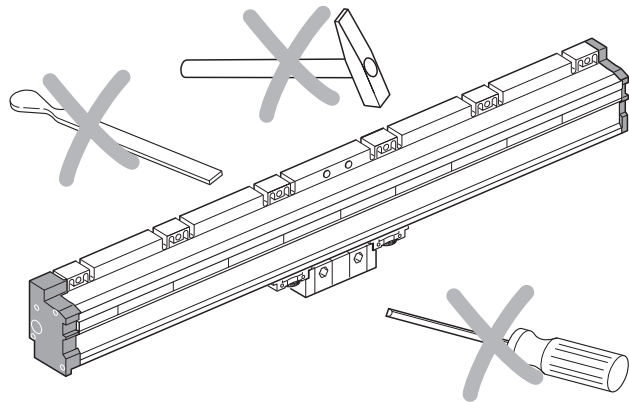
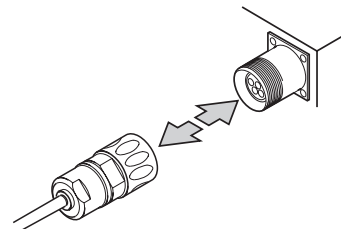
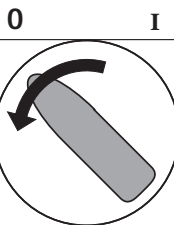
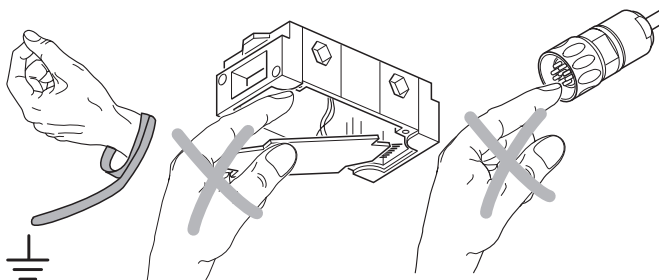
## LS 176

## LS 186

2/2002

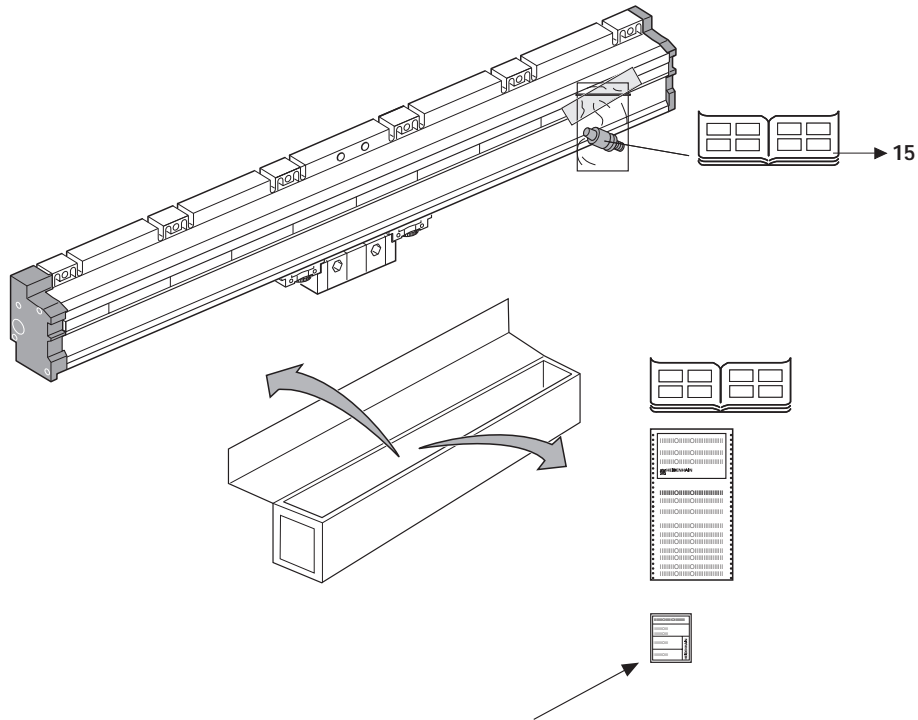
Warnhinweise · Warnings · Důležitá upozornění

 DIN EN 100 015 - 1  
CECC 00015 - 1



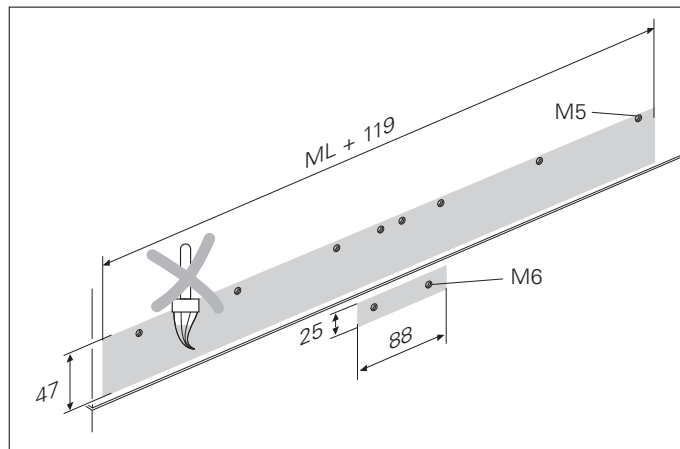
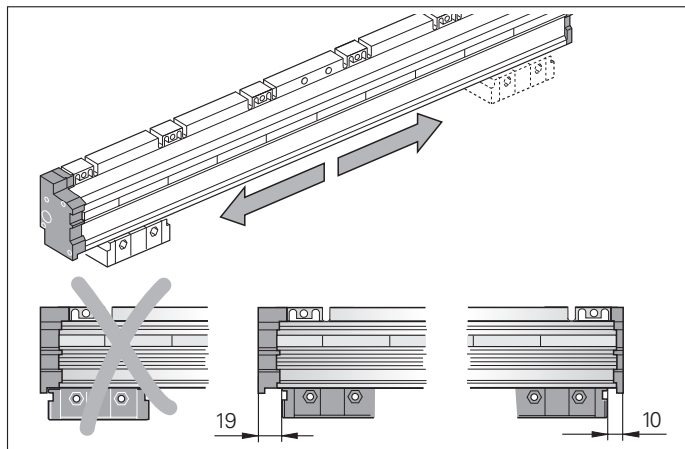
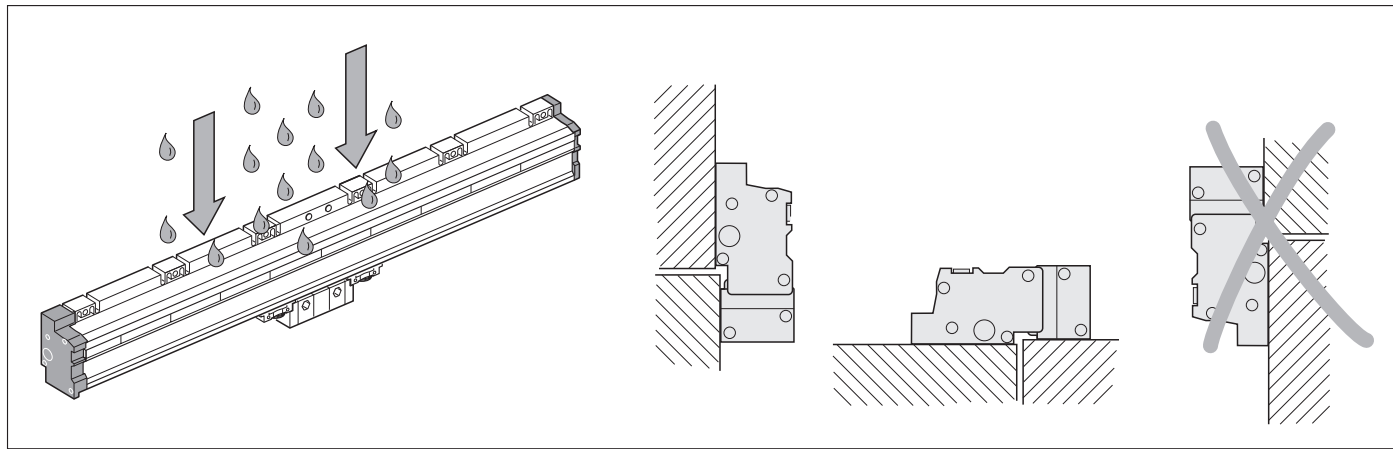
Maße in mm  
Dimensions in mm  
Rozměry v mm

## Lieferumfang · Items Supplied · Obsah dodávky



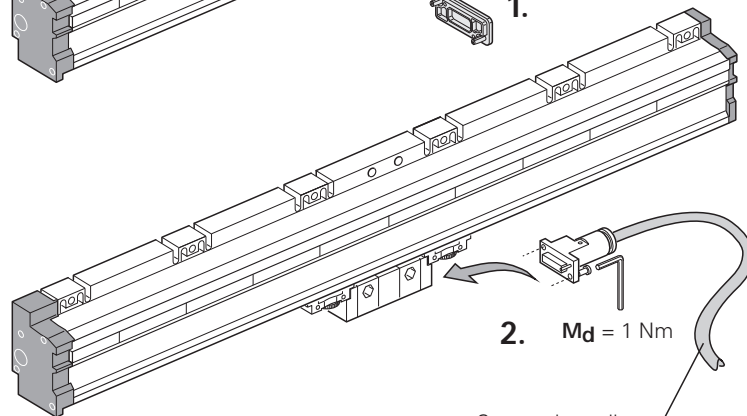
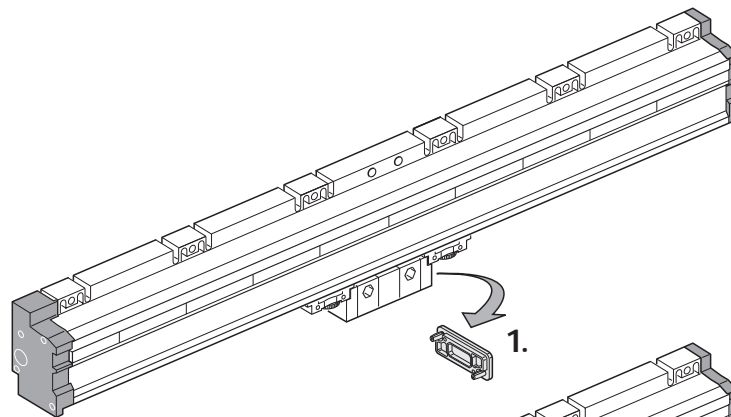
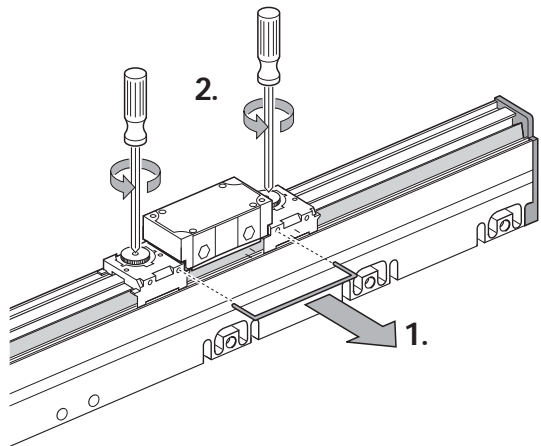
Bei Montage bitte Geräteschild-Aufkleber anbringen (Schaltschrank, Maschinen-Handbuch usw.).  
Apply the encoder ID label to an appropriate surface, e.g. the electrical cabinet or machine manual.  
Při montáži nalepte typový štítek snímače do rozvaděče nebo do průvodní dokumentace stroje.

Hinweise zur Montage · *Mounting Procedure* · Pokyny k montáži



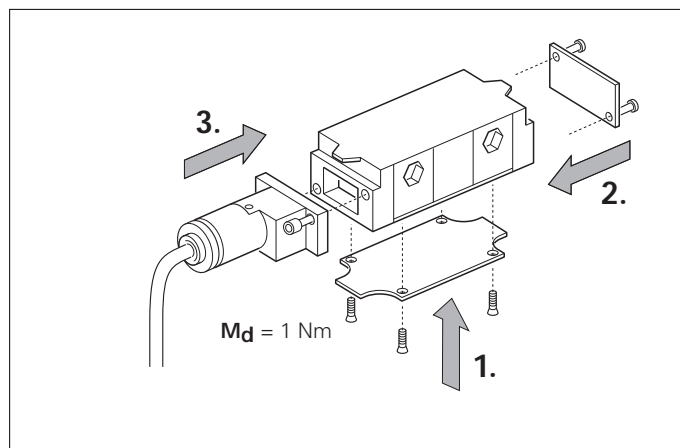
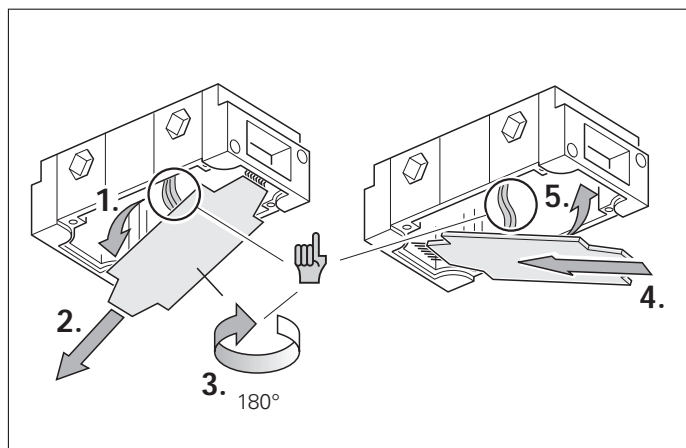
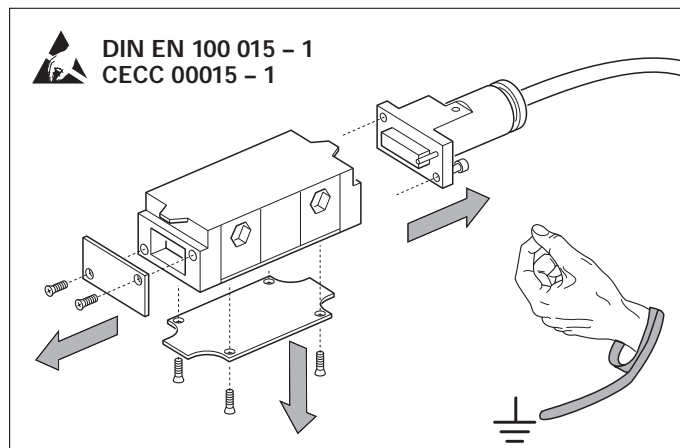
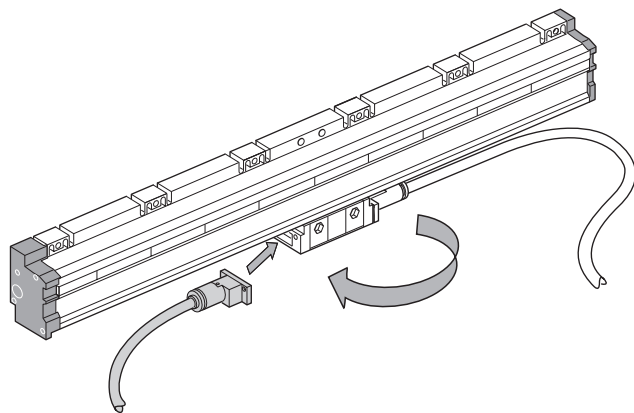
## Montagevorbereitungen · Preparatory Work · Příprava montáže

1/4 Umdrehung lösen  
Loosen by 1/4 revolution  
Uvolnit o ¼ otáčky



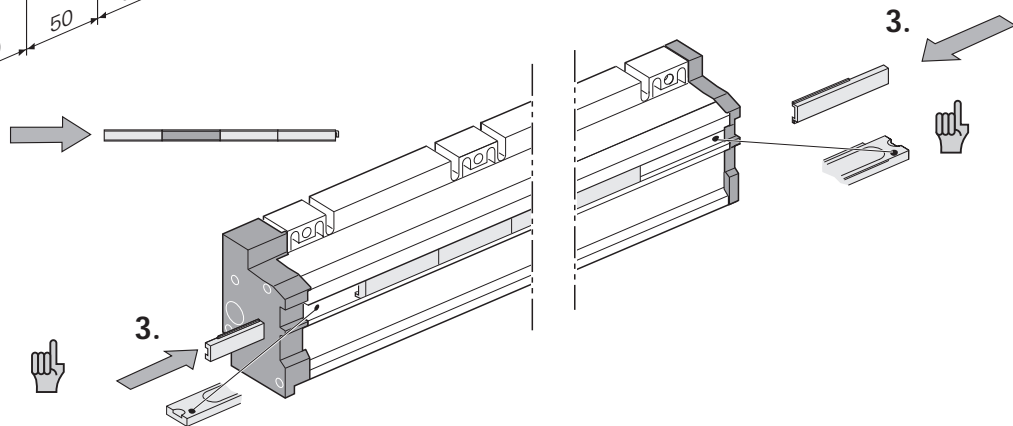
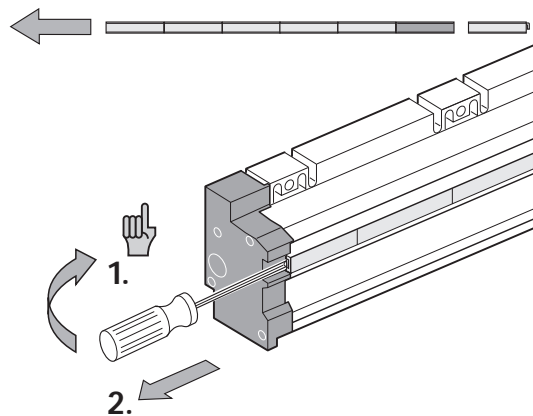
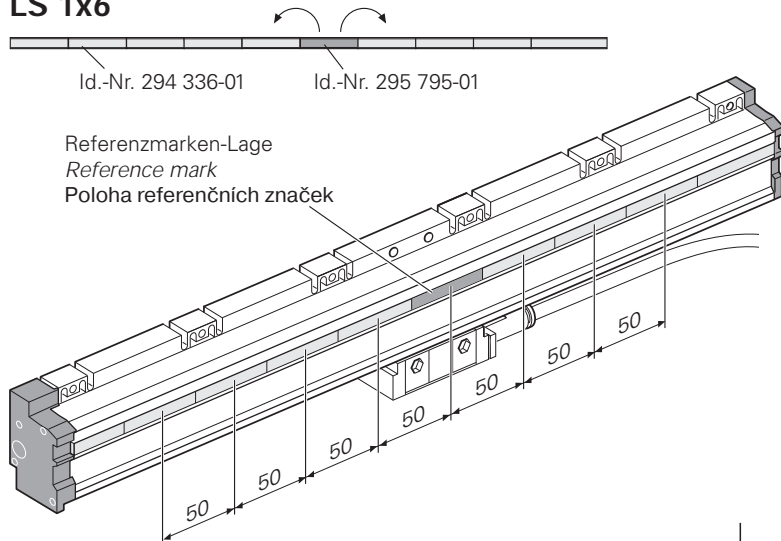
Separat bestellen  
Order separately  
Objednávejte samostatně

## Kabelausgang verlegen · Changing the Cable Outlet · Přehození výstupu kabelu

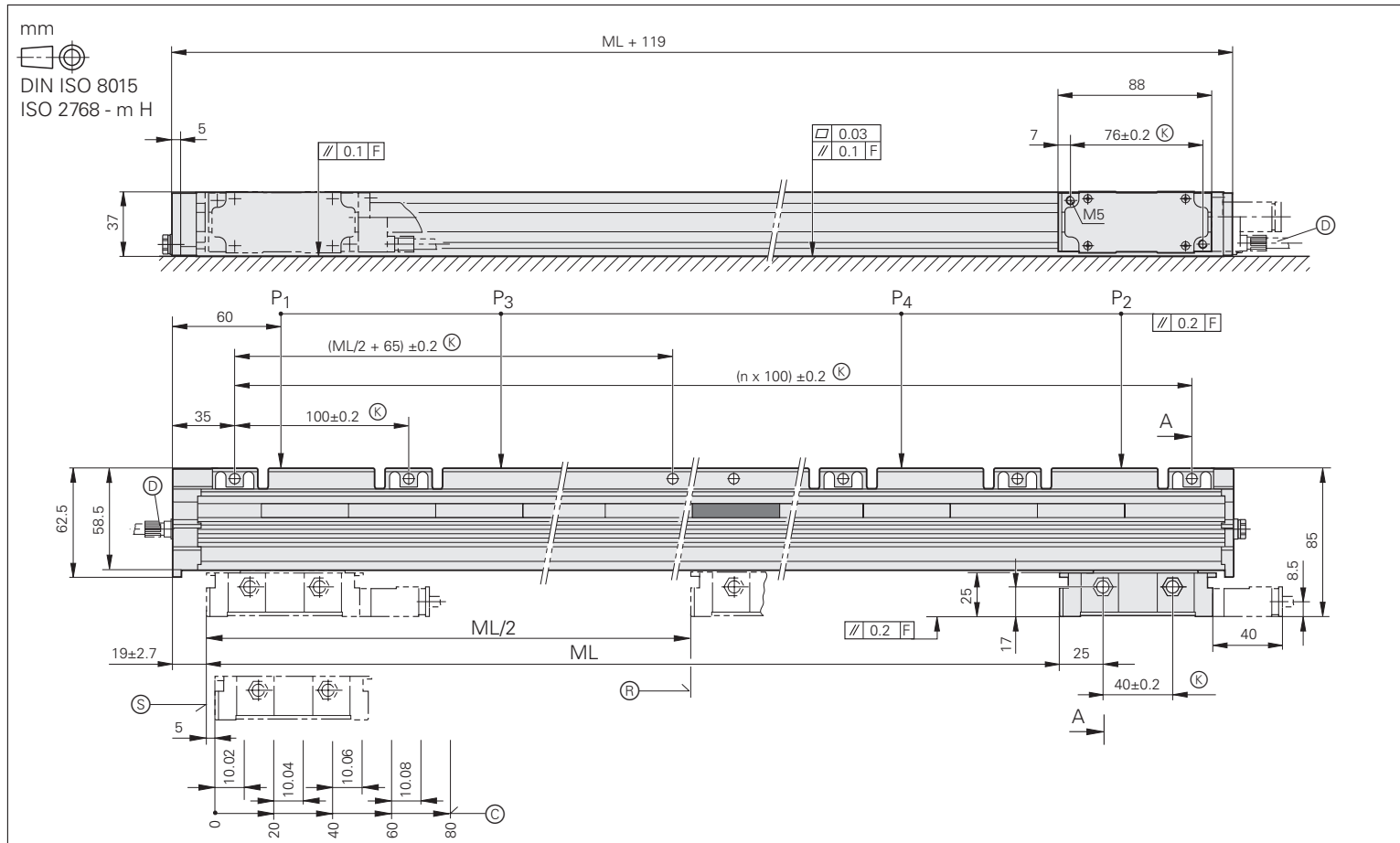


# Referenzmarkenauswahl · Reference Mark Selection · Výběr referenčních značek

## LS 1x6



Abmessungen · Dimensions · Rozměry



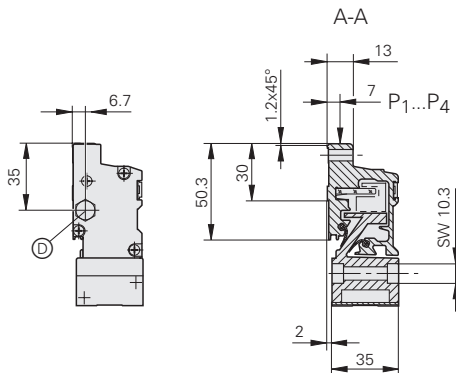


Ⓧ = Druckluftanschluss  
*Compressed air inlet*  
Připojení stlačeného vzduchu

F = Maschinenführung  
*Machine guideway*  
Vedení stroje

Ⓡ = Referenzmarken-Lage LS 106/LS 176/LS 186  
*Reference mark position LS 106/LS 176/LS 186*  
Poloha referenčních značek 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*  
Poloha referenčních značek LS 106 C/LS 176 C/LS 186 C



Ⓣ = Beginn der Messlänge ML  
*Begin. of meas. length ML*  
Začátek měřicí délky ML

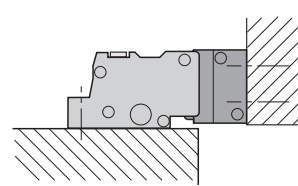
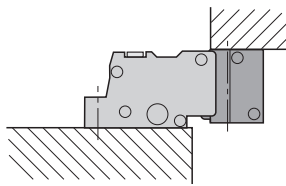
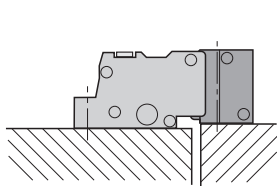
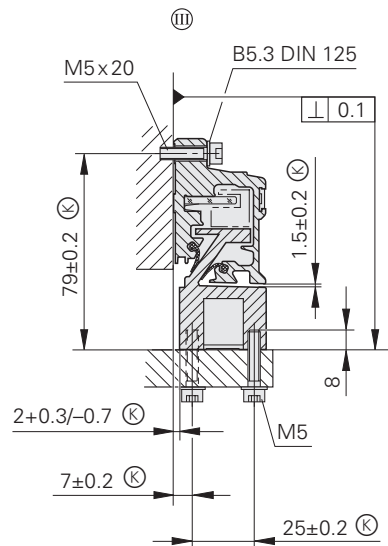
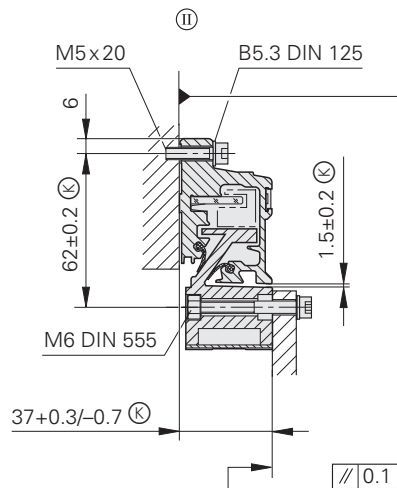
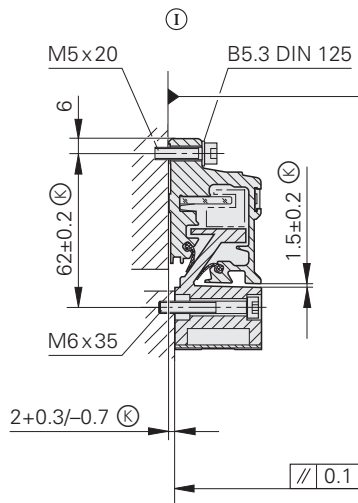
P = Messpunkte zum Ausrichten  
*Gauging points for alignment*  
Měřicí body pro vyrovnání

Ⓚ = Kundenseitige Anschlussmaße  
*Required mating dimensions*  
Připojovací rozměry pro montáž

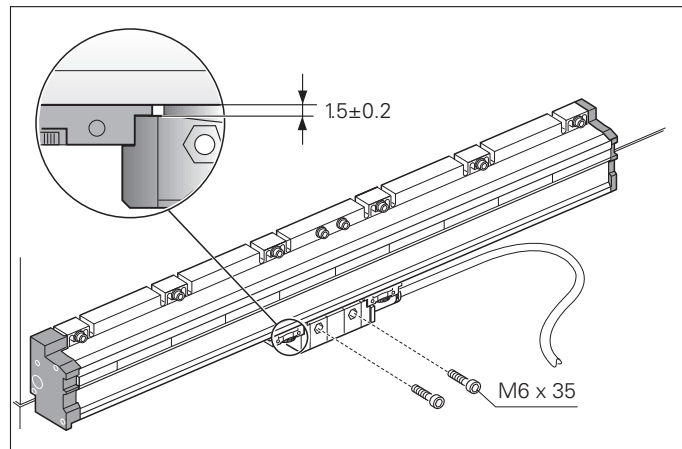
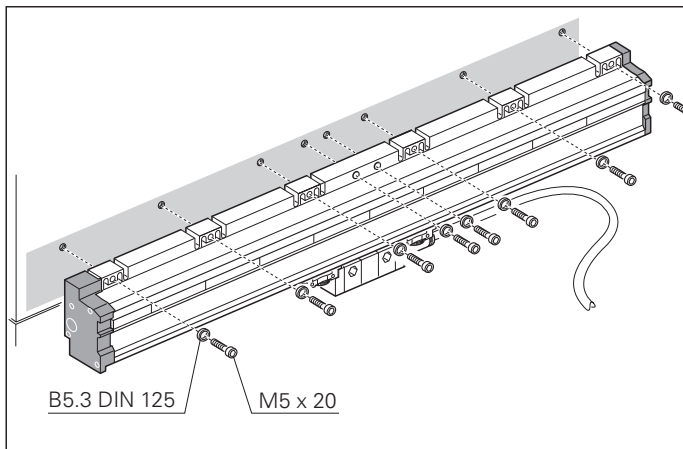
# Anbaumaße · Mounting dimensions · Montážní rozměry

①②③ = Montage-Möglichkeiten  
 Mounting possibilities  
 Možnosti namontování

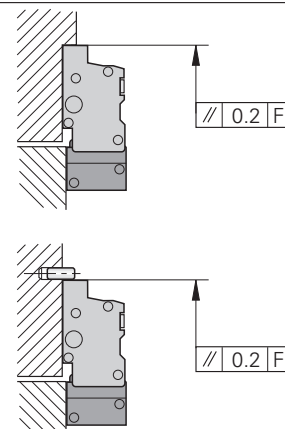
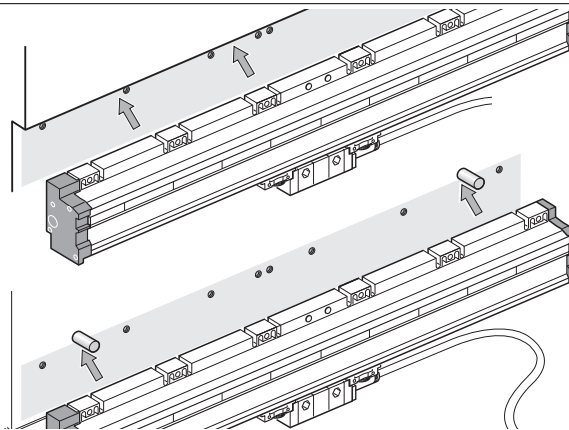
Ⓚ = Kundenseitige Anschlussmaße  
 Required mating dimensions  
 Připojovací rozměry pro montáž



## Anbau · Mounting · Montáž

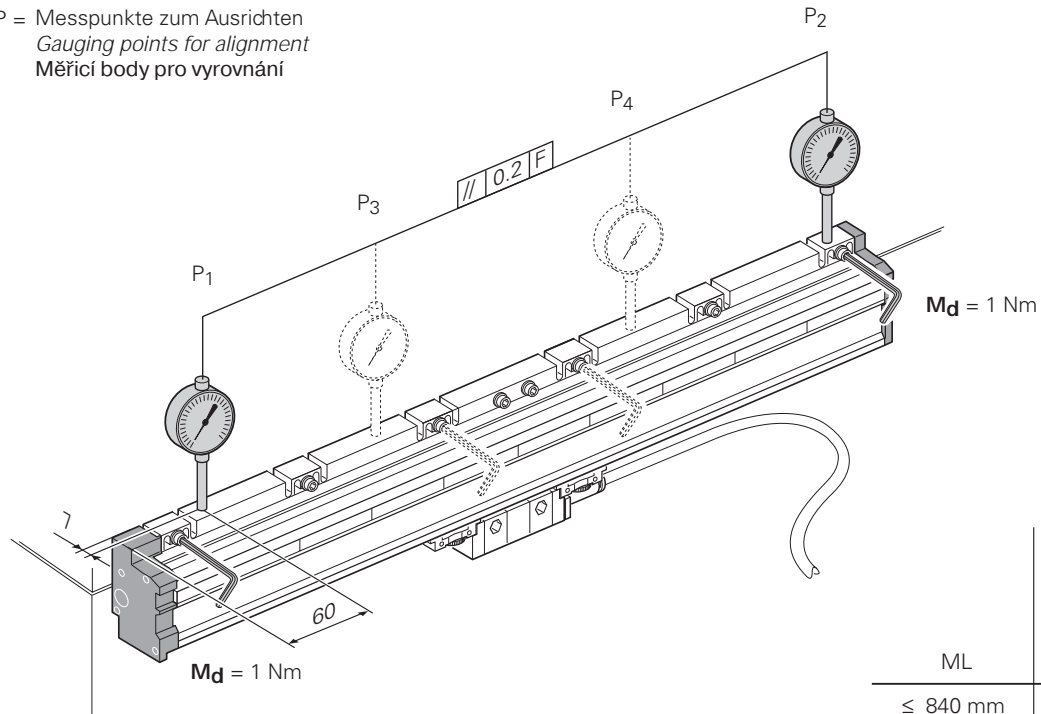


zusätzliche Anbaumöglichkeiten  
Additional mounting options  
Další možnosti namontování

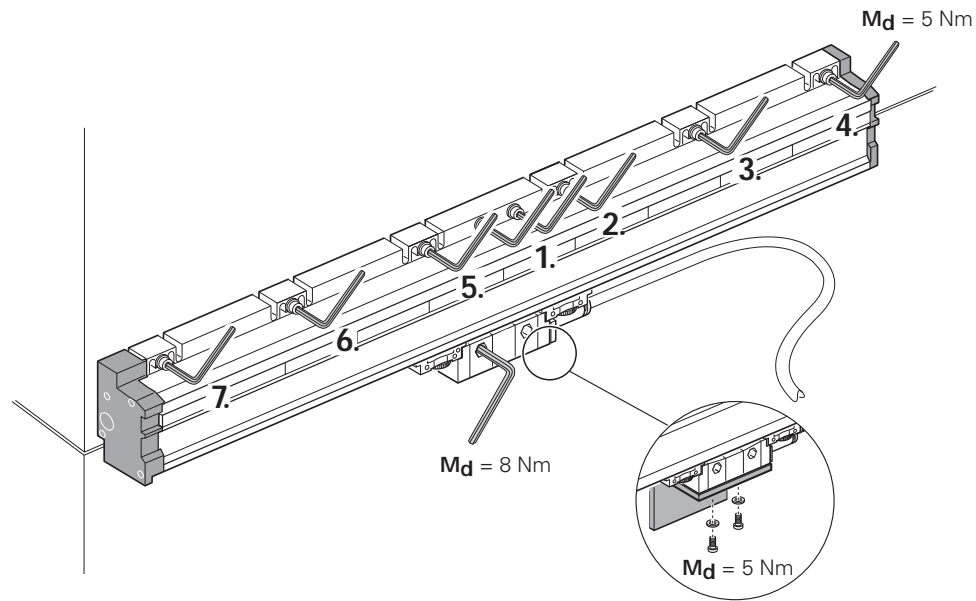


## Ausrichten · Alignment · Vyrovnání

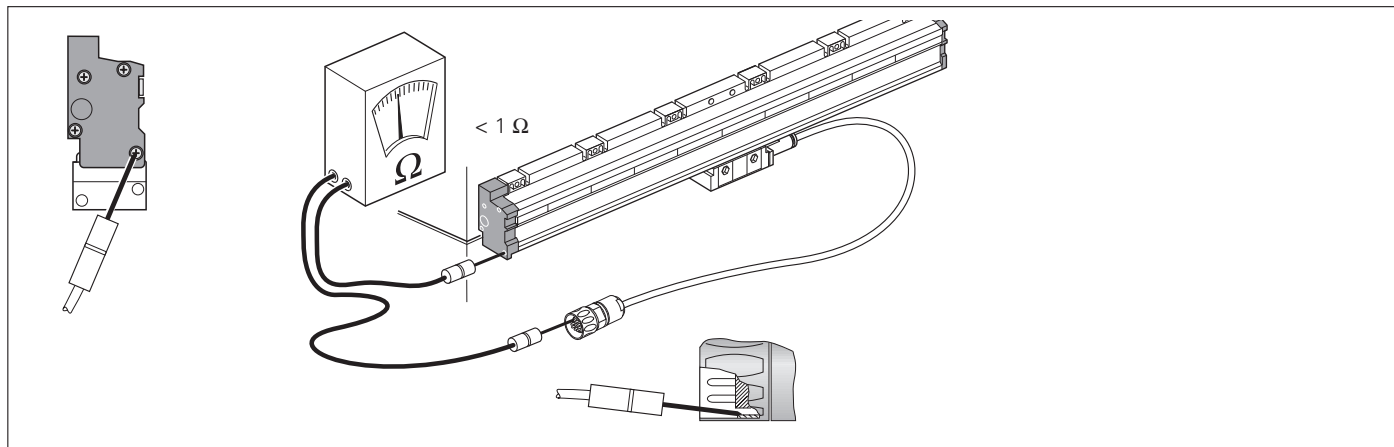
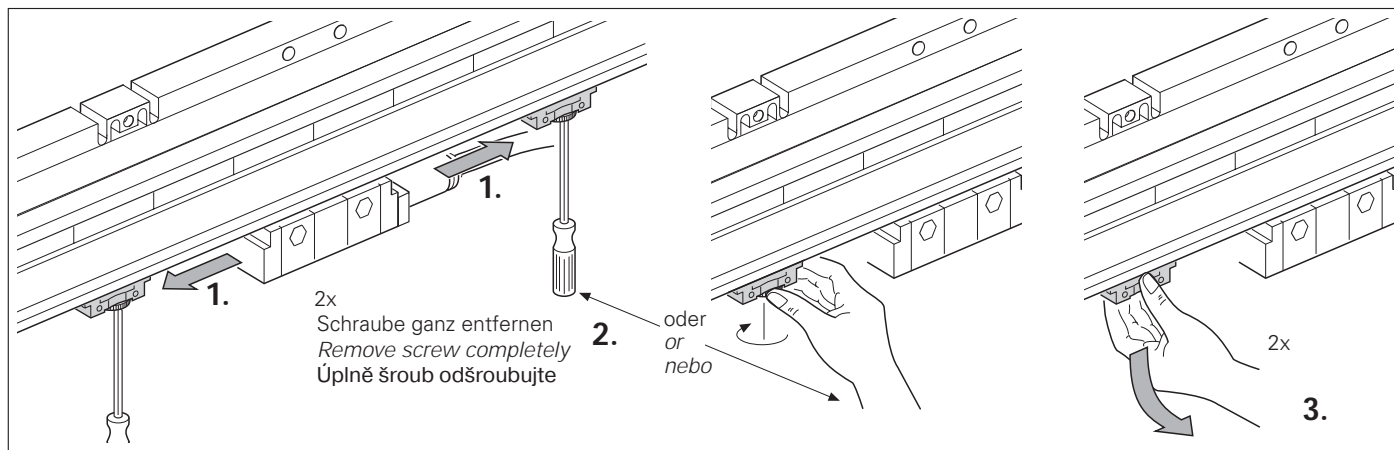
P = Messpunkte zum Ausrichten  
 Gauging points for alignment  
 Měřící body pro vyrovnání



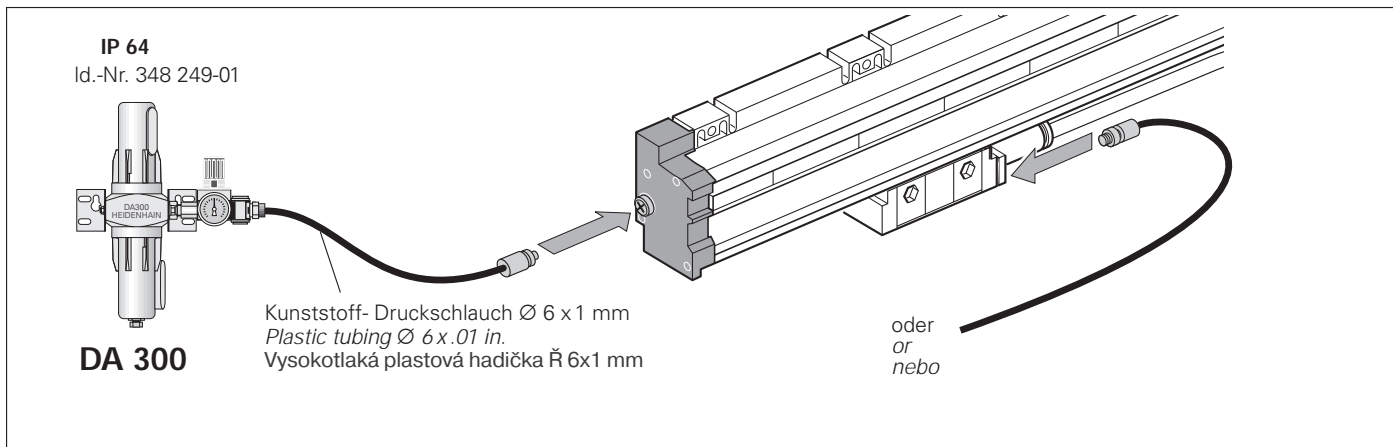
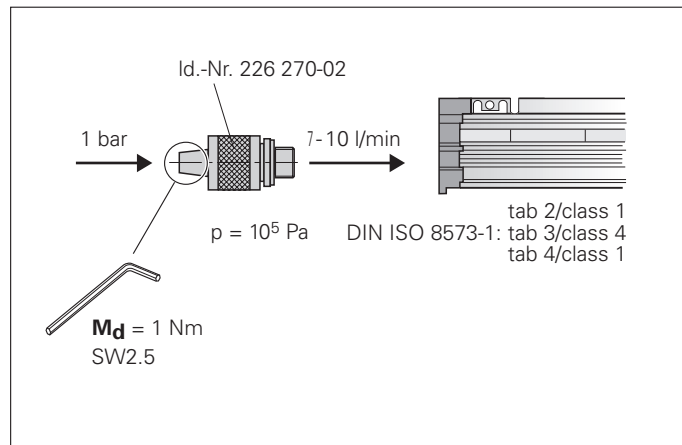
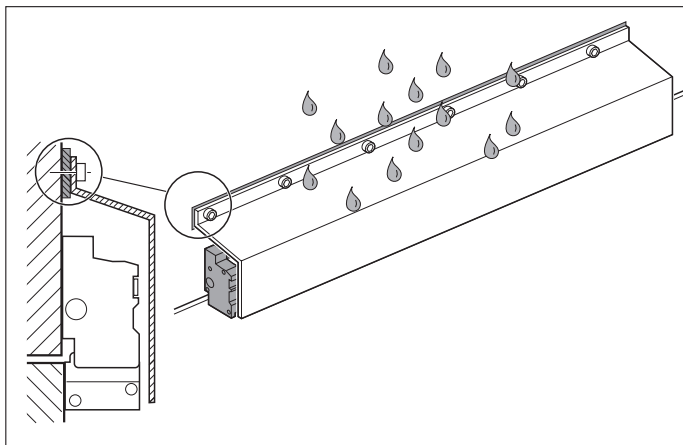
ML	
≤ 840 mm	2x
≤ 1740 mm	3x
≤ 3040 mm	4x

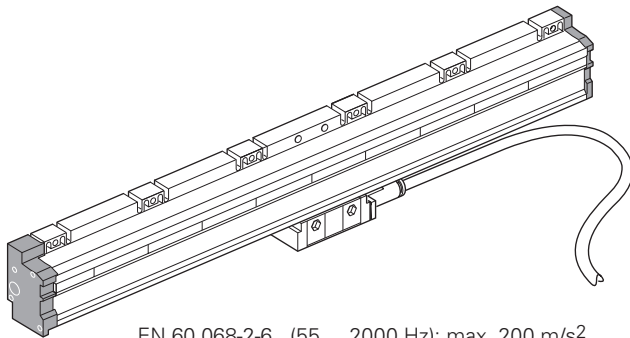


## Abschließende Arbeiten · Final Steps · Závěrečné kroky



## Schutzmaßnahmen · Protective Measures · Ochranná opatření

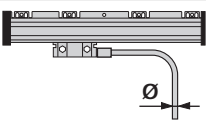

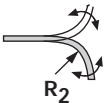



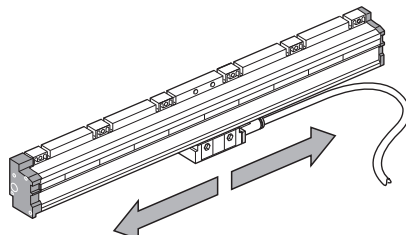


EN 60 068-2-6 (55 ... 2000 Hz): max. 200 m/s<sup>2</sup>  
EN 60 068-2-27 (11 ms): max. 400 m/s<sup>2</sup>




Technische Kennwerte · Specifications · Technické údaje

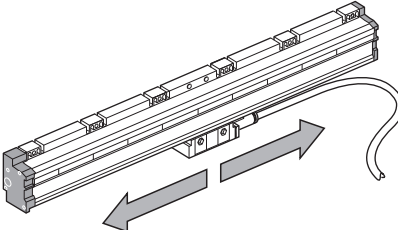
		
<b>Ø 6 mm</b>	$R_1 \geq 20 \text{ mm}$	$R_2 \geq 75 \text{ mm}$
<b>Ø 10 mm</b>	$R_1 \geq 35 \text{ mm}$	$R_2 \geq 75 \text{ mm}$
	$R_1 \geq 40 \text{ mm}$	$R_2 \geq 100 \text{ mm}$



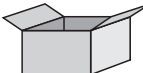
$v = \text{max. } 120 \text{ m/min}$   
**LS 176** max. 60 m/min Option 120m/min  
 $F \leq 4 \text{ N}$



°C  
(°F)

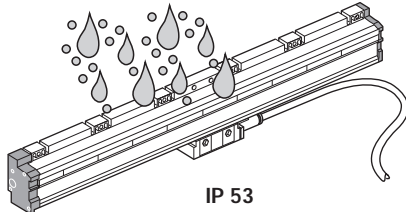


0 ... 50 °C  
(32 ... 122 °F)

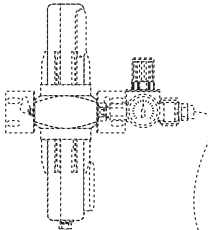


-20 ... 70 °C  
(- 4 ... 158 °F)

**IP 64**  
EN 60 529

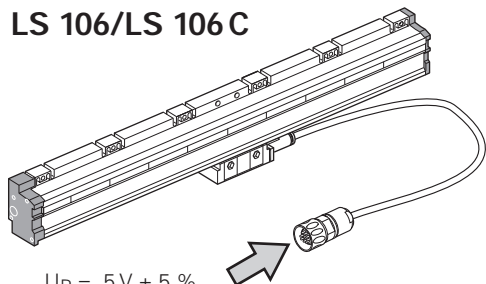


**IP 53**  
EN 60 529




DA 300

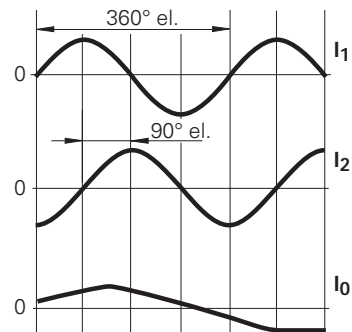
## LS 106/LS 106 C



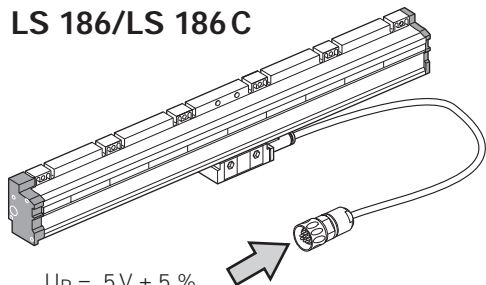
$U_p = 5V \pm 5\%$   
(max. 100 mA)

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


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



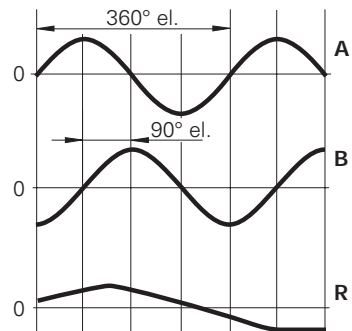
## LS 186/LS 186 C



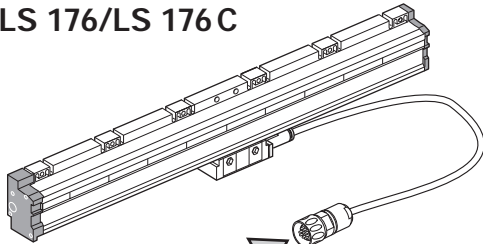
$U_p = 5V \pm 5\%$   
(max. 150 mA)

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

$A: 0.6 \dots 1.2 V_{SS}$   
 $B: 0.6 \dots 1.2 V_{SS}$   
 $R: 0.2 \dots 0.85 V$



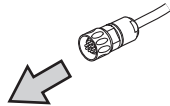
# LS 176/LS 176 C



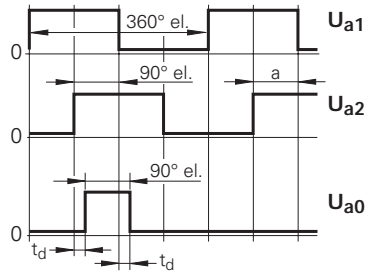
$U_P = 5V \pm 5\%$   
(max. 140 mA)



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



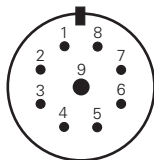
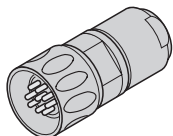
$U_{a1}, U_{a2}, U_{a0}$   
 $\overline{U}_{a1}, \overline{U}_{a2}, \overline{U}_{a0}, \overline{U}_{aS}$



$|t_d| \leq 0.1 \mu s$

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

## LS 106/LS 106 C

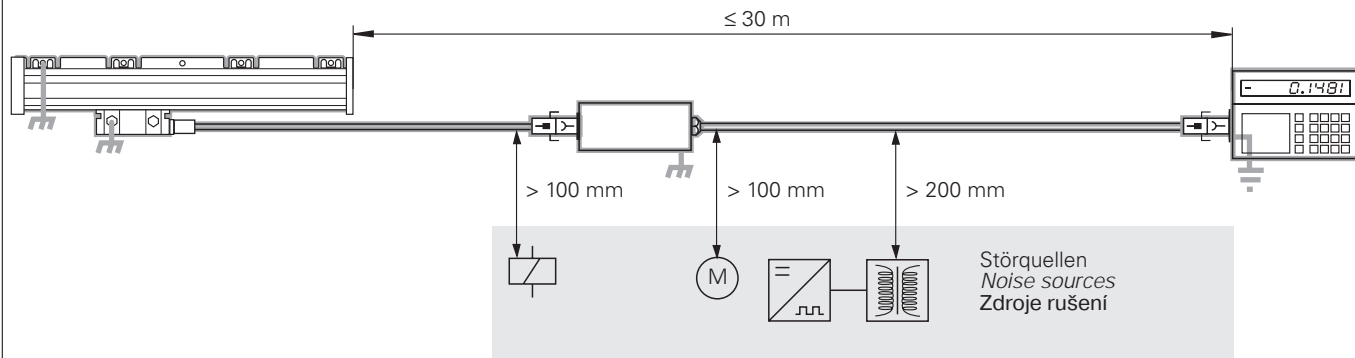


Id.-Nr. 291 697-03

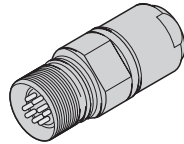
1) Außenschirm auf Gehäuse  
*External shield on housing*  
Vnější stínění na kostru

2) Innenschirm Pin 9  
*Internal shield pin 9*  
Vnitřní stínění pin 9

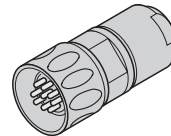
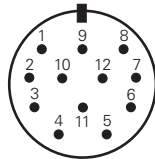
1	2	5	6	7	8	3	4	1)	9
I <sub>1</sub>		I <sub>2</sub>		I <sub>0</sub>		5 V U <sub>P</sub>	0 V U <sub>N</sub>		2)
+	-	+	-	+	-				
grün green zelený	gelb yellow žlutý	blau blue modrý	rot red rudý	grau gray šedý	rosa pink růžový	braun brown hnědý	weiß white bílý		



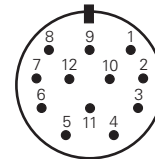
# LS 176/LS 176C



Id.-Nr. 291 698-03

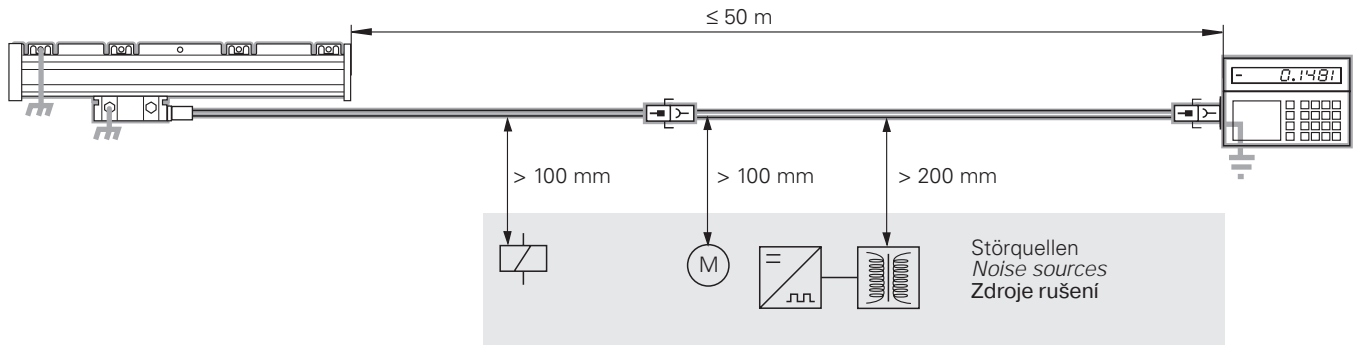


Id.-Nr. 291 697-07

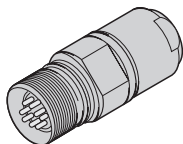


Schirm auf Gehäuse  
Shield on housing  
Stínění na kostru

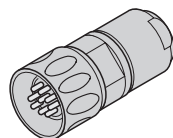
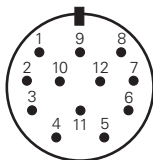
5	6	8	1	3	4	12	10	2	11	7	/
$U_{a1}$	$\overline{U_{a1}}$	$U_{a2}$	$\overline{U_{a2}}$	$U_{a0}$	$\overline{U_{a0}}$	5V $U_P$	0V $U_N$	5V sensor	0V sensor	$\overline{U_{aS}}$	/
braun brown hnědý	grün green zelený	grau gray šedý	rosa pink růžový	rot red rudý	schwarz black černý	braun/grün brown/green hnědý/zelený	weiß/grün white/green bílý/zelený	blau blue modrý	weiß white bílý	violett violet fialový	gelb yellow žlutý



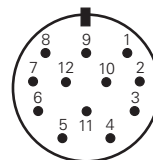
## LS 186/LS 186 C



Id.-Nr. 291 698-03

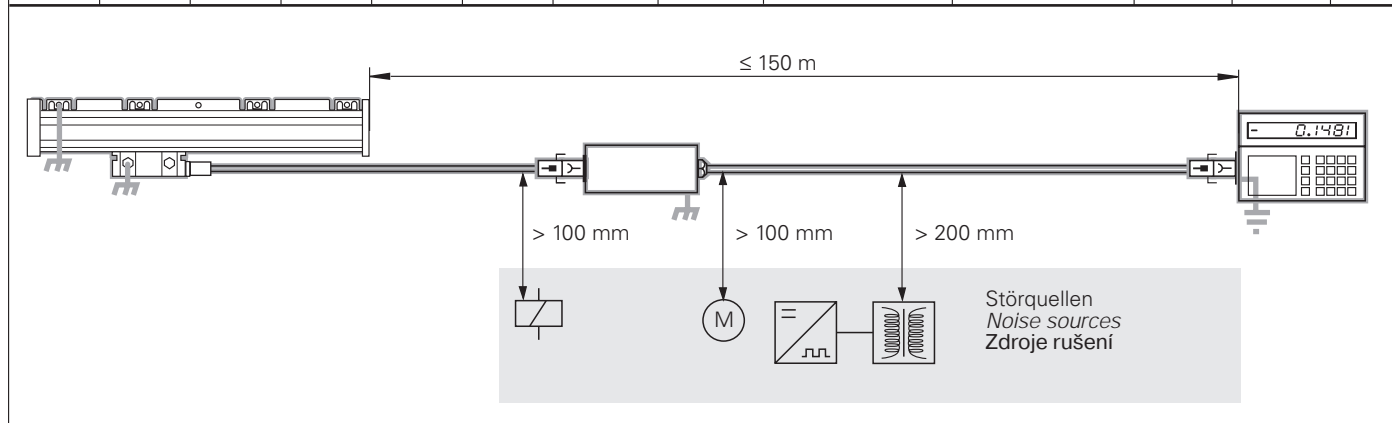


Id.-Nr. 291 697-07



Schirm auf Gehäuse  
Shield on housing  
Stínění na kostru

5	6	8	1	3	4	2	11	12	10	/	7	9
<b>A</b>		<b>B</b>		<b>R</b>		<b>5 V sensor</b>	<b>0V sensor</b>	<b>5 V U<sub>P</sub></b>	<b>0V U<sub>N</sub></b>	/	/	/
+	-	+	-	+	-							
braun brown hnědý	grün green zelený	grau gray šedý	rosa pink růžový	rot red rudý	schwarz black černý	blau blue modrý	weiß white bílý	braun/grün brown/green hnědý/zelený	weiß/grün white/green bílý/zelený	gelb yellow žlutý	violett violet fialový	





# HEIDENHAIN

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