



# HEIDENHAIN

## SALES & SERVICE:

**A Tech Authority, Inc.**  
13745 Stockton Ave.  
Chino CA 91710  
909-614-4522  
[sales@atechauthority.com](mailto:sales@atechauthority.com)

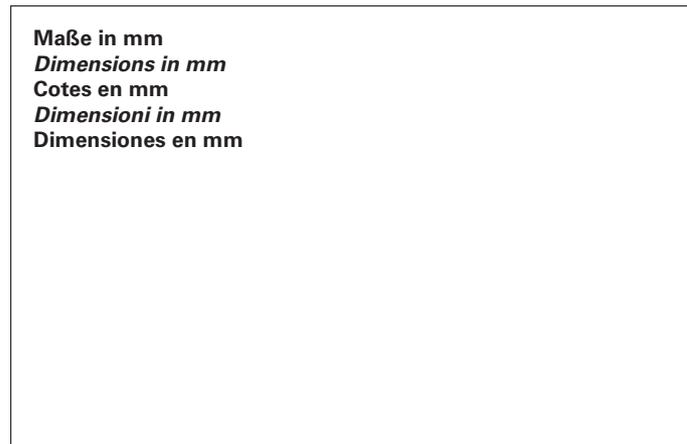
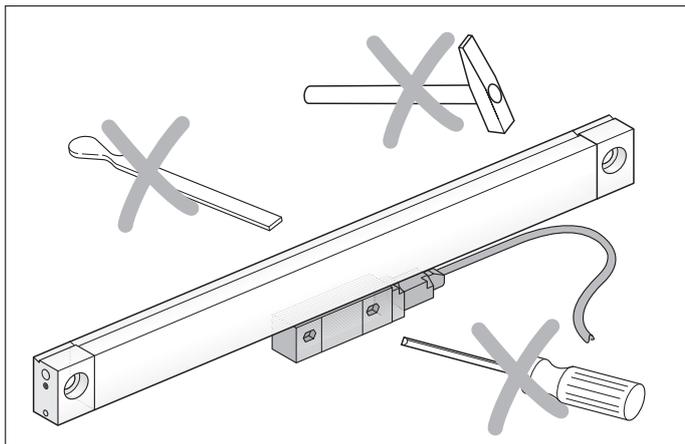
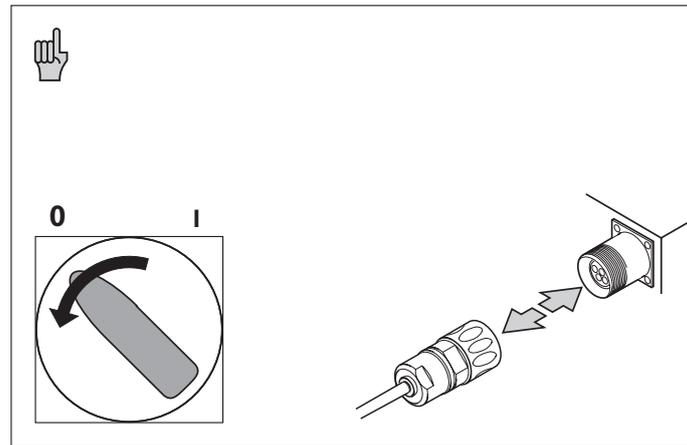
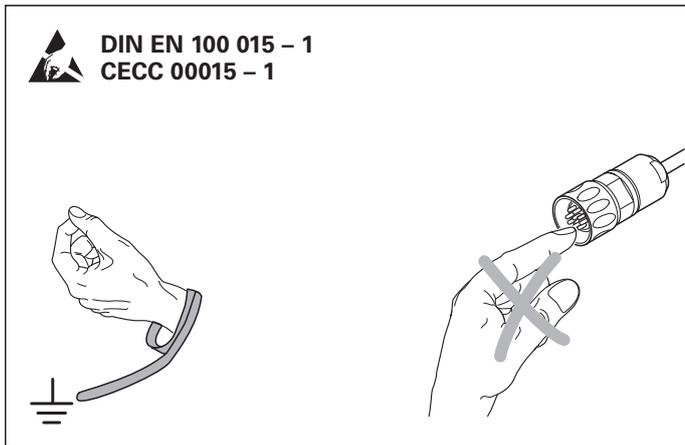


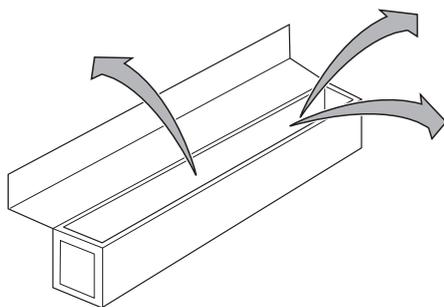
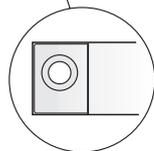
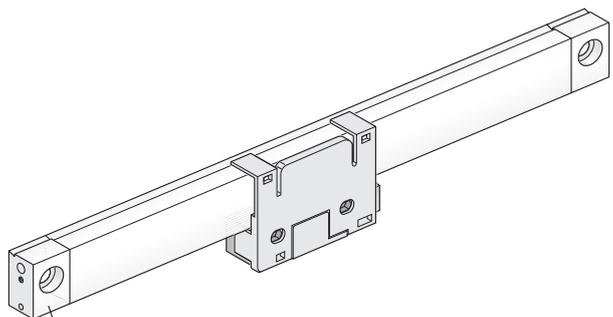
**LF 401**  
**LF 481**

10/2001

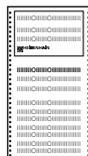


Warnhinweise · Warnings · Recommendations · Avvertenze · Advertencias





- 2x M8x25 DIN 6912
- 2x M8x25 ISO 4762
- 2x D13.0/8.4
- 3x D7.0/4.3



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.)

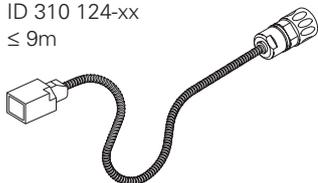


## LF 401 (C)

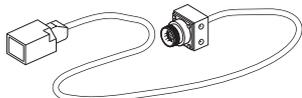
ID 310 125-xx  
≤ 9m



ID 310 124-xx  
≤ 9m



ID 266 656-xx  
0.3m



ID 288 593-xx  
≤ 9m

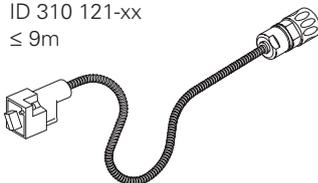


## LF 481 (C)

ID 310 122-xx  
≤ 9m



ID 310 121-xx  
≤ 9m



ID 310 123-xx  
3m



ID 310 134-xx  
≤ 9m

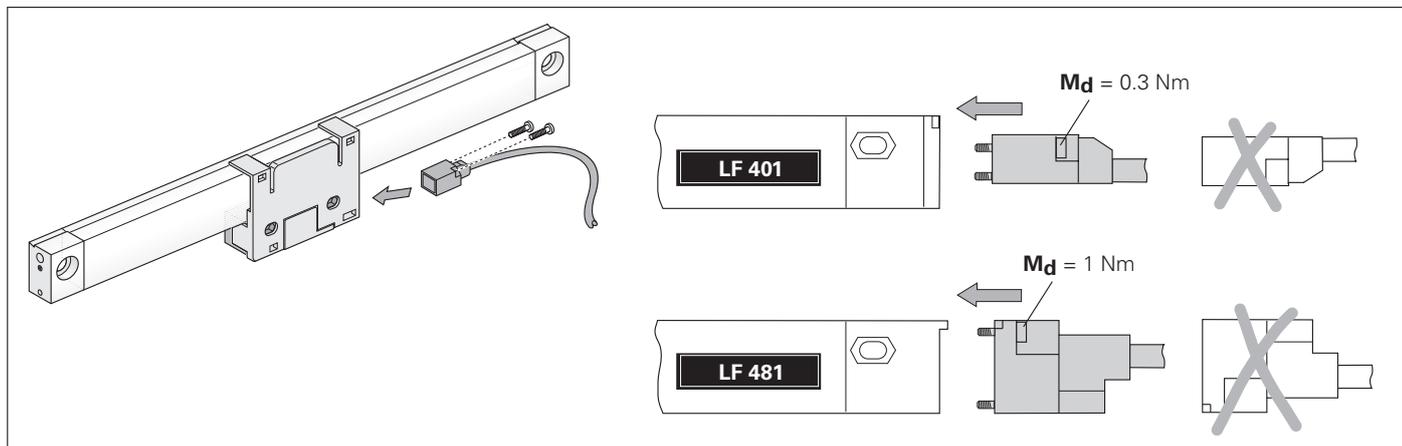


ID 298 430-xx  
≤ 9m

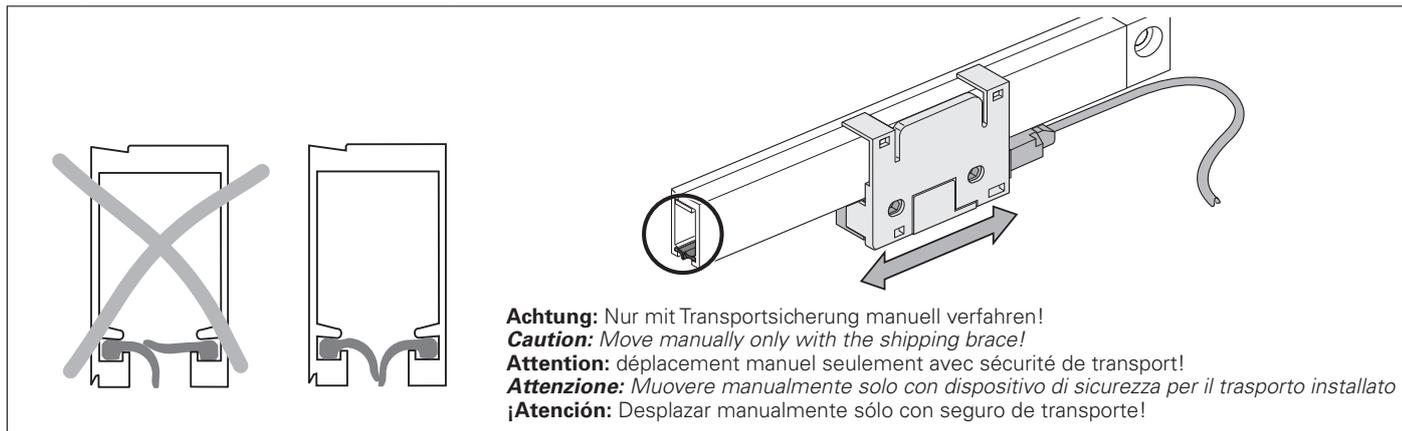


IK 220  
TNC

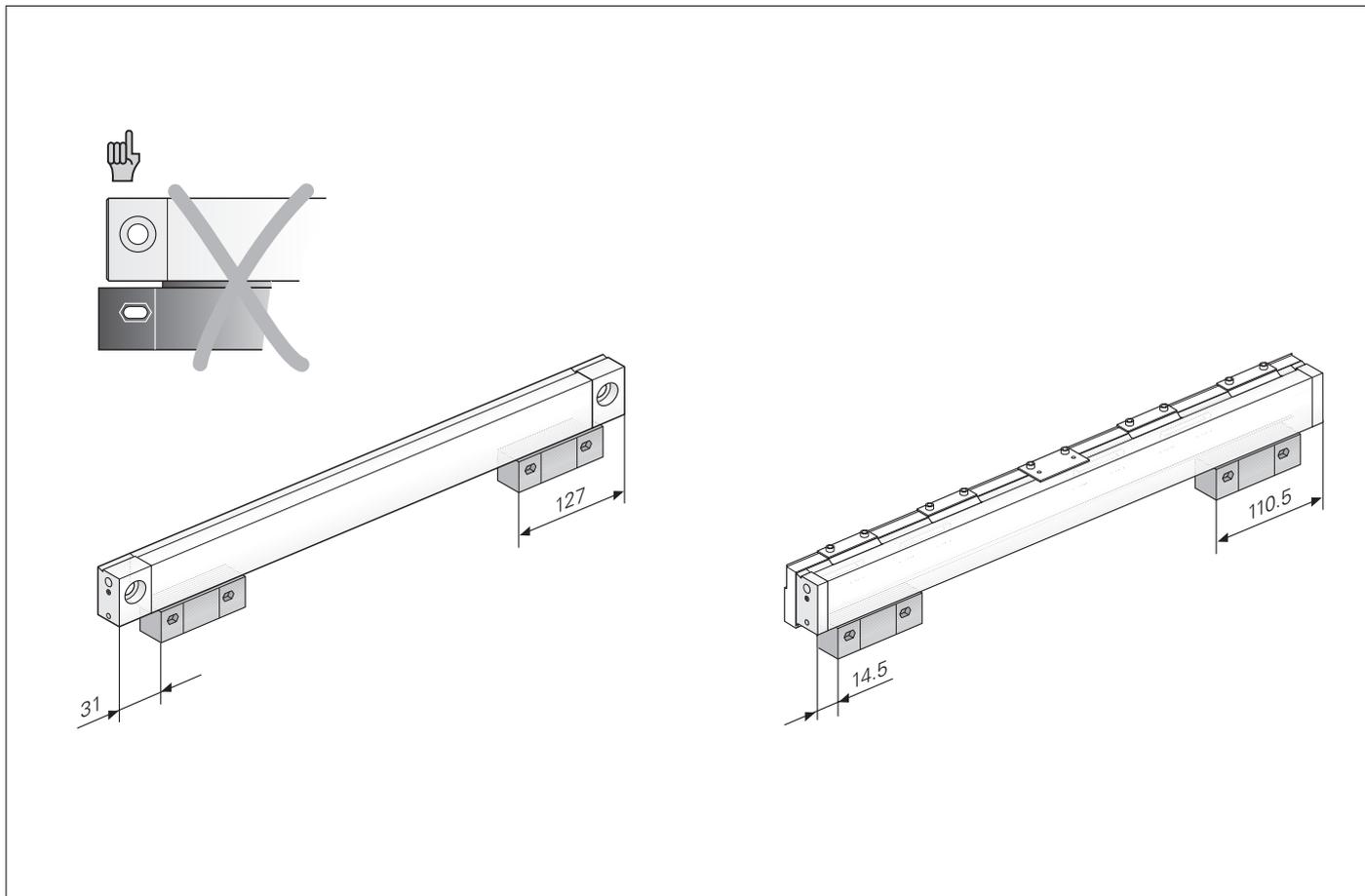
Kabelanschluss · Cable Connection · Raccordement du cable · Cavo di colleganto · Conexión de cable

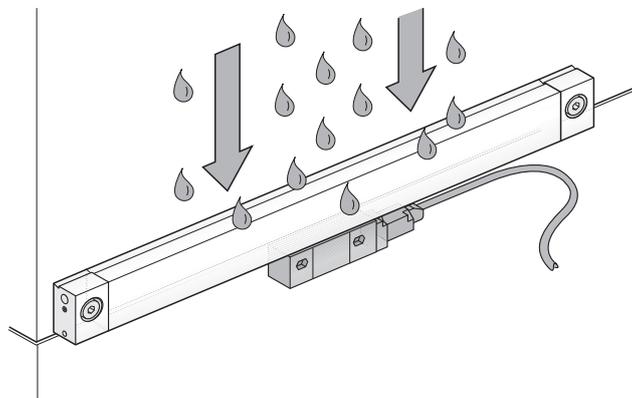
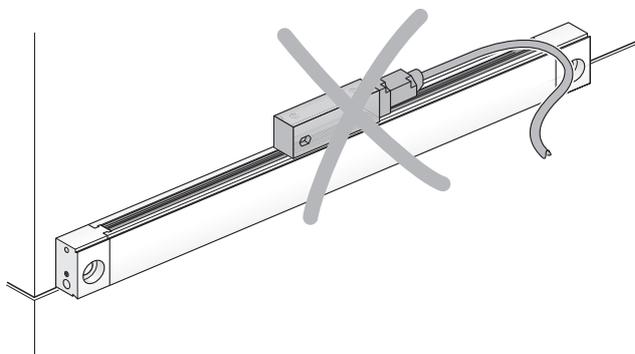


Dichtlippen überprüfen · Inspect Sealing Lips · Contrôler les lèvres d'étanchéité · Controllo delle guarnizioni · Verificar labios



Hinweise zur Montage · *Mounting Procedure* · Procédures pour le montage





Abmessungen  
ohne Montageschiene

· Dimensions without  
Mounting Spar

· Dimensions  
sans rail de guidage

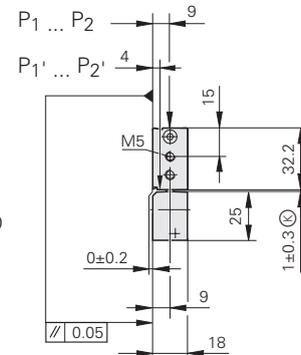
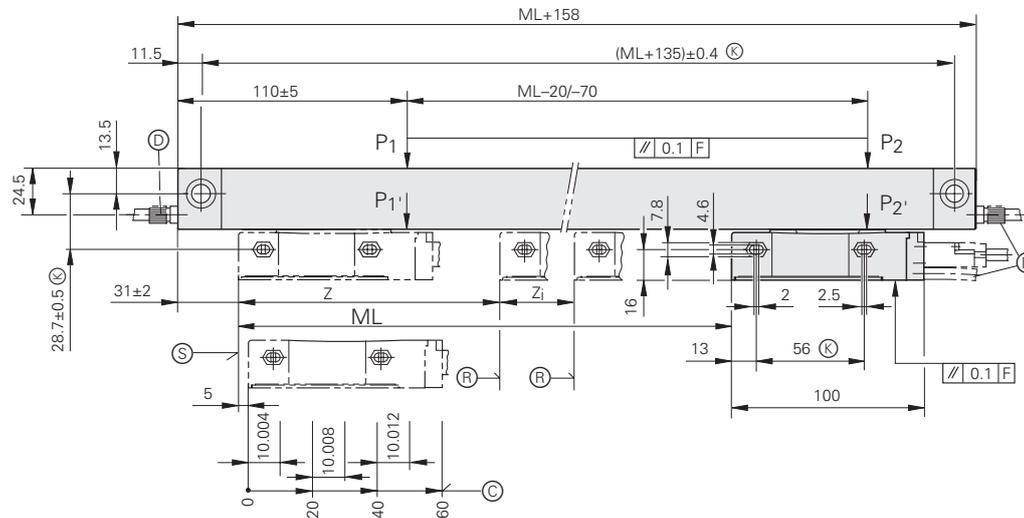
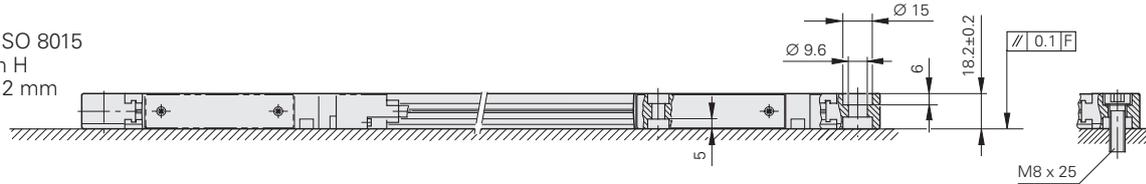
· Dimensioni  
senza guida

· Dimensiones  
sin guía de montaje

## LF 401 (C)



Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm: ±0.2 mm



ML 50 ... 1000	ML 1120 ... 2020
z = 25	z = 35
z <sub>i</sub> = ML - 50	z <sub>i</sub> = ML - 70

P = Messpunkte zum Ausrichten  
Gauging points for alignment  
points de mesure pour dégauchissage  
punti di misura per allineamento  
puntos medición alineamiento

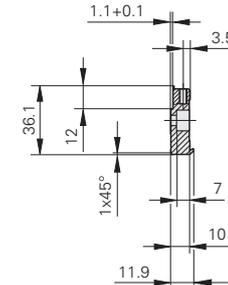
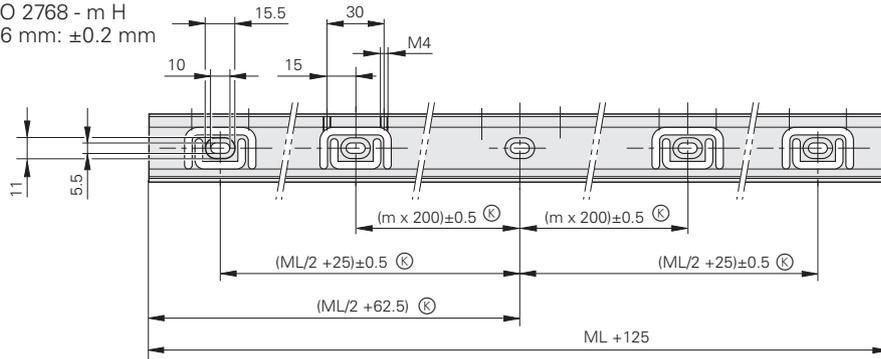
⊙ = Beginn der Messlänge ML  
Begin. of meas. length ML  
début longueur utile ML  
inizio lunghezza di misura ML  
comienzo longitud útil ML

⊕ = Referenzmarken-Lage  
Reference mark  
marque de référence  
indici di riferimento  
marca de referencia

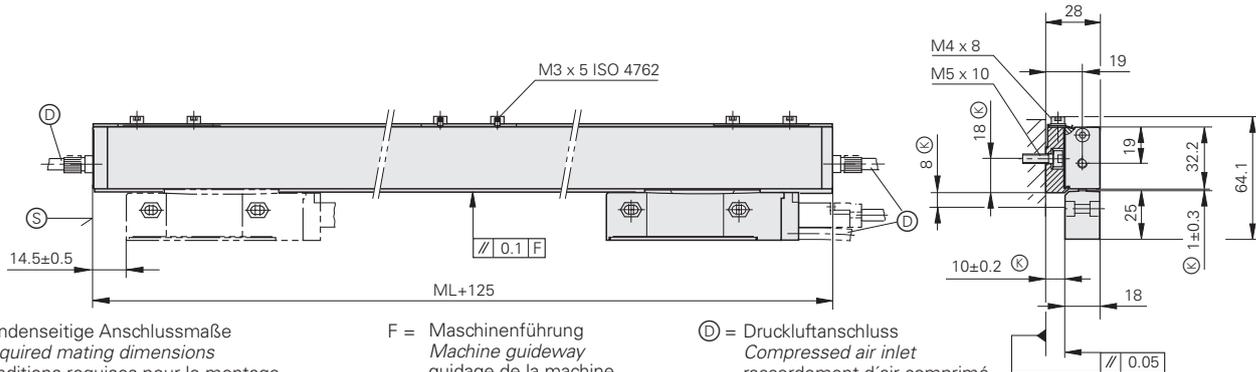
# LF 401 (C)



Tolerancing ISO 8015  
 ISO 2768 - m H  
 < 6 mm: ±0.2 mm



ML	m
50 ... 500	0
550 ... 900	1
1000 ... 1320	2
1420 ... 1720	3
1820 ... 2020	4



Ⓚ = Kundenseitige Anschlussmaße  
 Required mating dimensions  
 conditions requises pour le montage  
 dimensioni di collegamento lato cliente  
 cotas de montaje requeridas

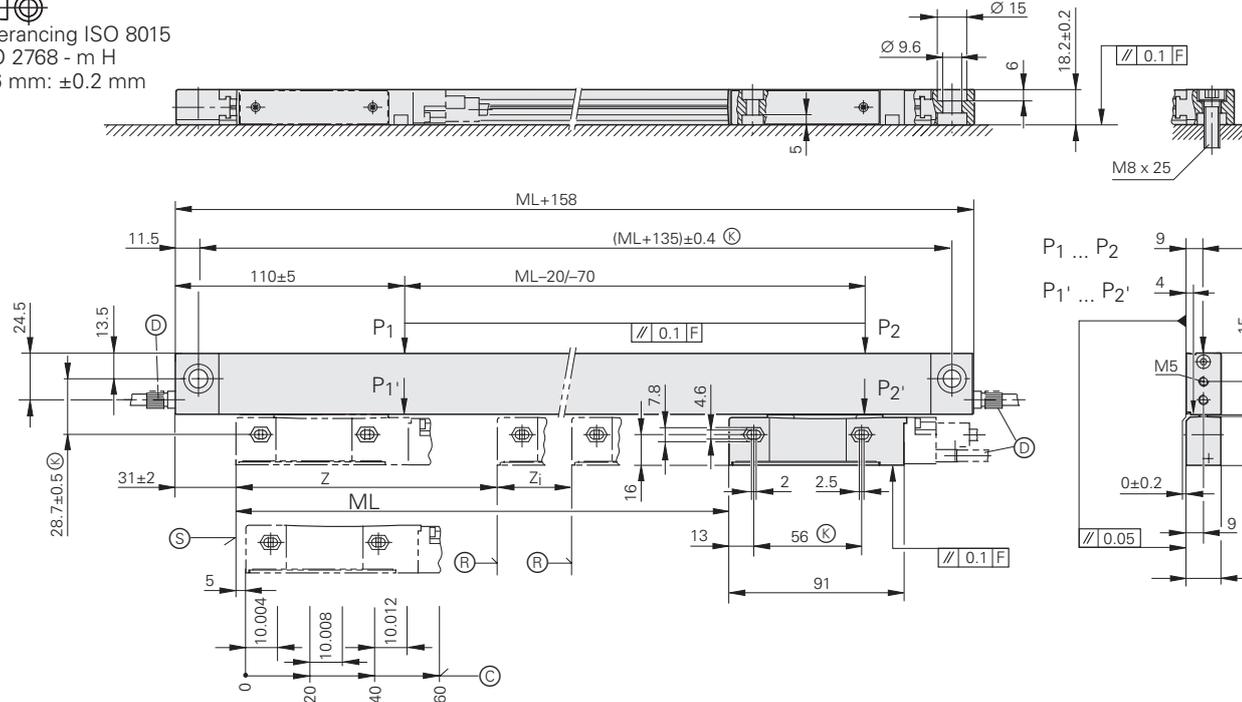
F = Maschinenführung  
 Machine guideway  
 guidage de la machine  
 guida della macchina  
 guía de la máquina

Ⓧ = Druckluftanschluss  
 Compressed air inlet  
 raccordement d'air comprimé  
 ingresso per pressurizzazione  
 conexión de aire comprimido

## LF 481 (C)



Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm: ±0.2 mm



ML 50 ... 1000	ML 1120 ... 2020
z = 25	z = 35
z <sub>i</sub> = ML - 50	z <sub>i</sub> = ML - 70

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Gauging points for alignment  
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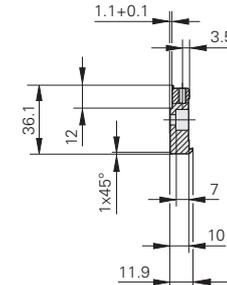
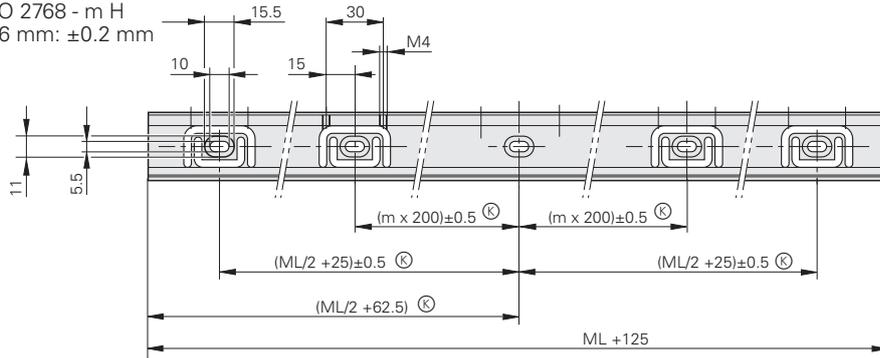
Ⓢ = Beginn der Messlänge ML  
Begin. of meas. length ML  
début longueur utile ML  
inizio lunghezza di misura ML  
comienzo longitud útil ML

Ⓡ = Referenzmarken-Lage  
Reference mark  
marque de référence  
indici di riferimento  
marca de referencia

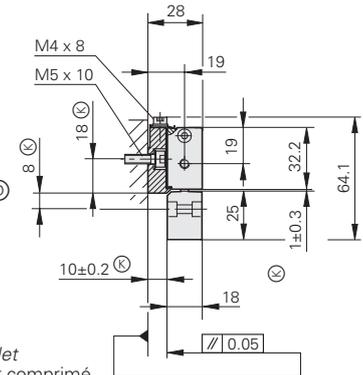
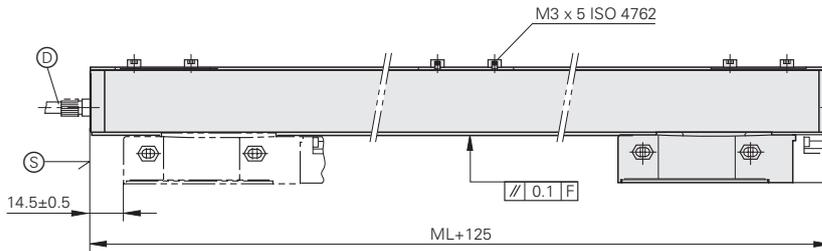
# LF 481 (C)



Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm: ±0.2 mm



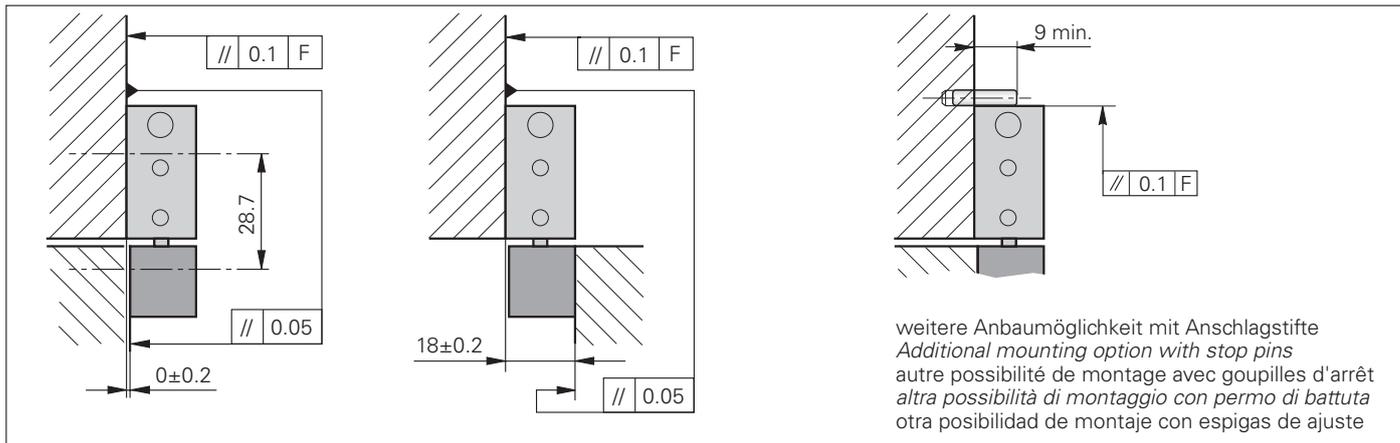
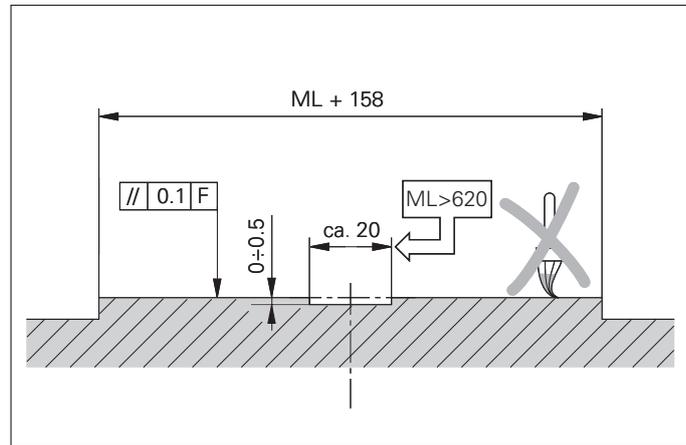
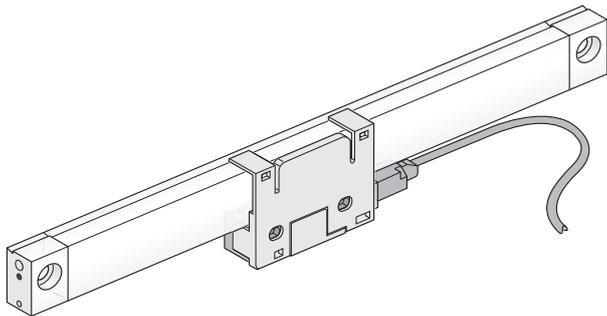
ML	m
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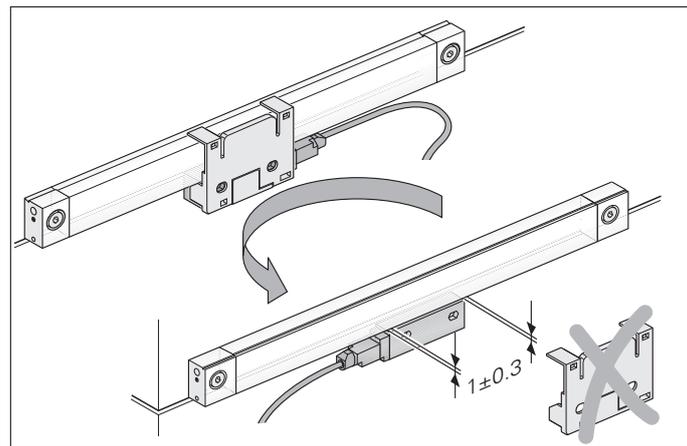
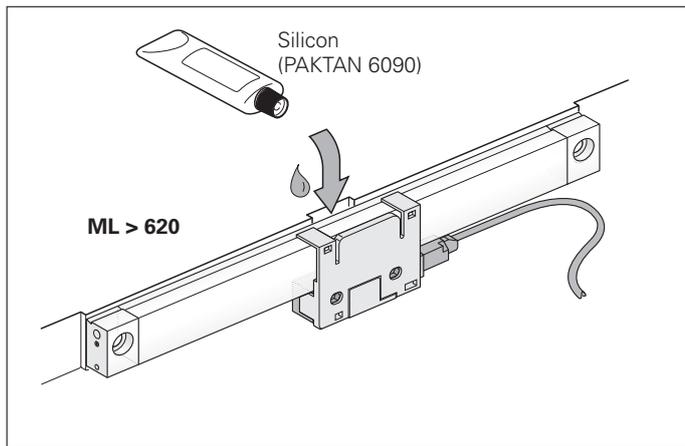
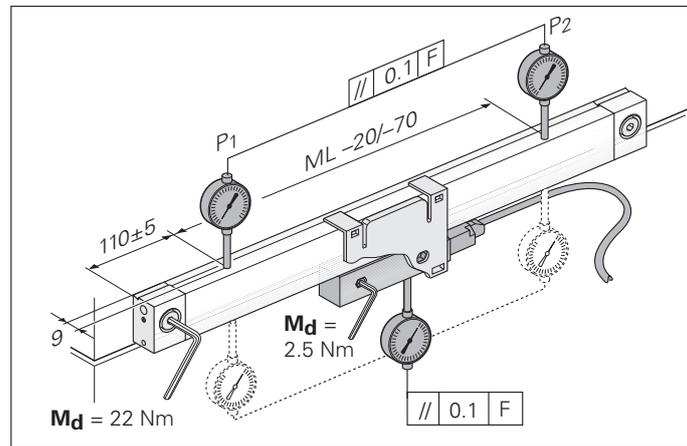
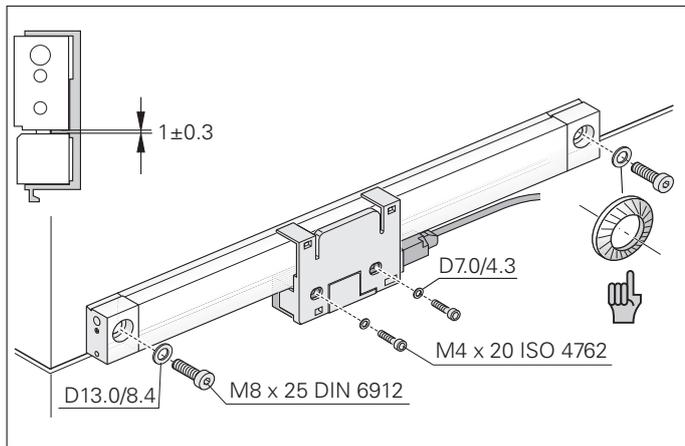


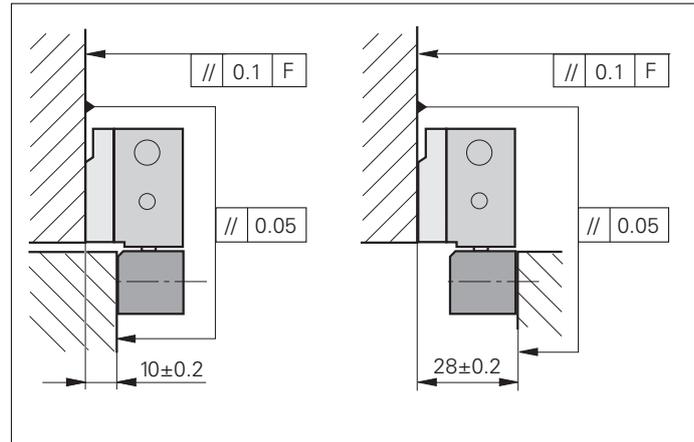
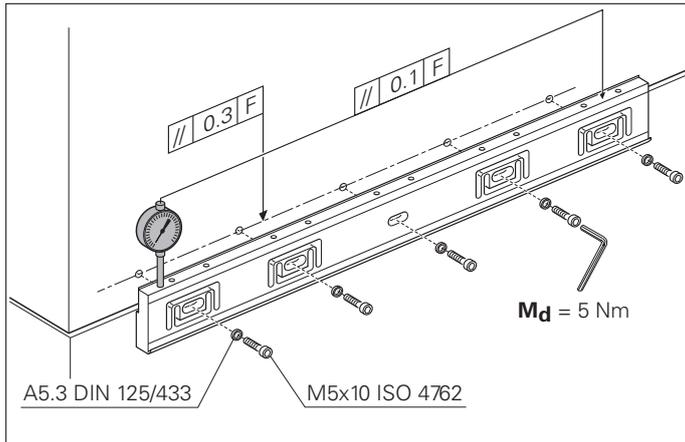
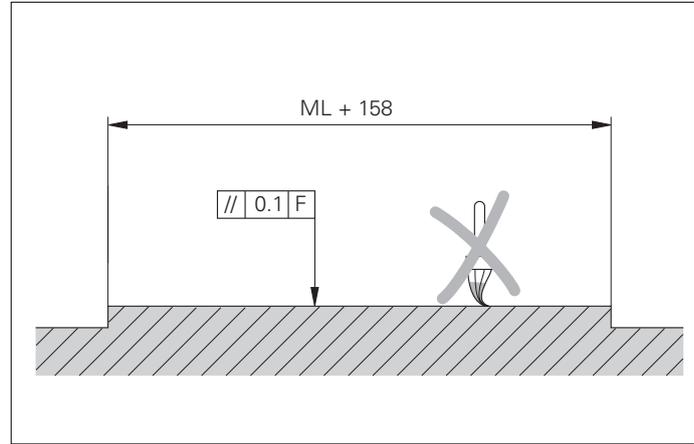
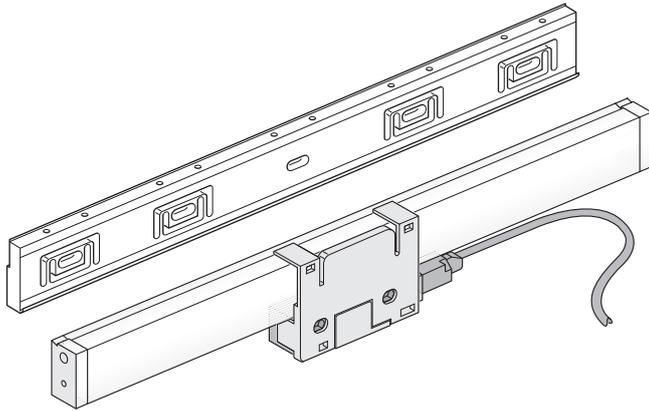
Ⓚ = Kundenseitige Anschlussmaße  
Required mating dimensions  
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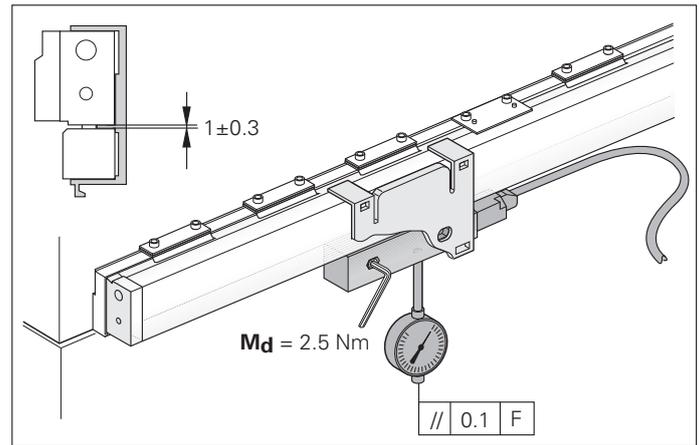
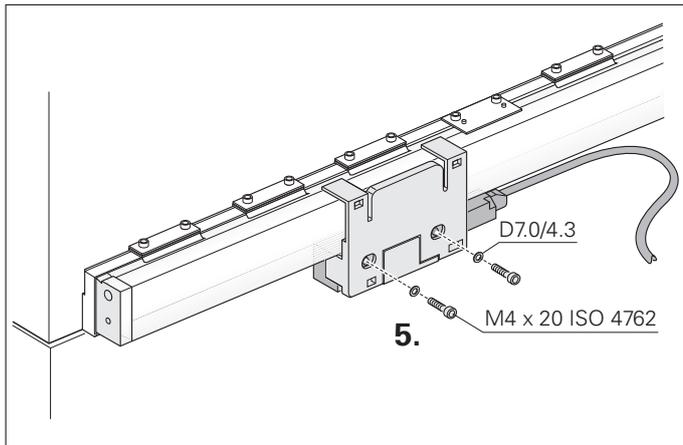
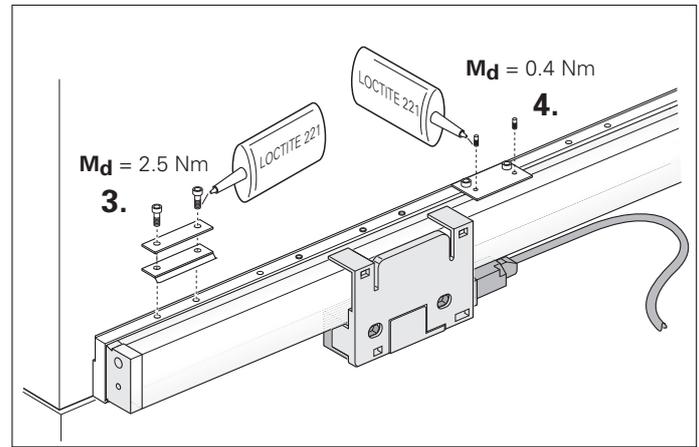
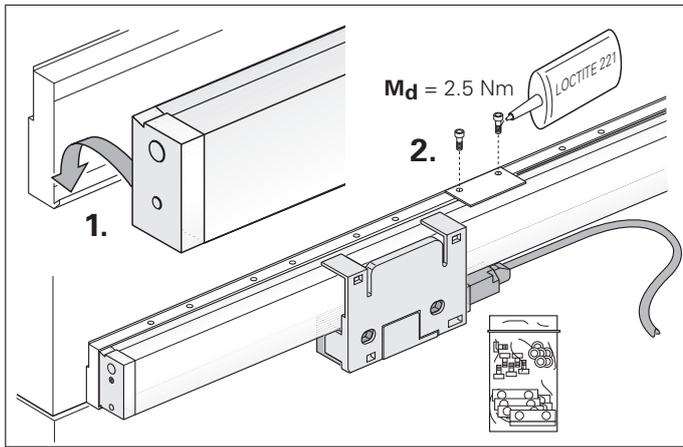
F = Maschinenführung  
Machine guideway  
guidage de la machine  
guida della macchina  
guía de la máquina

Ⓧ = Druckluftanschluss  
Compressed air inlet  
raccordement d'air comprimé  
ingresso per pressurizzazione  
conexión de aire comprimido

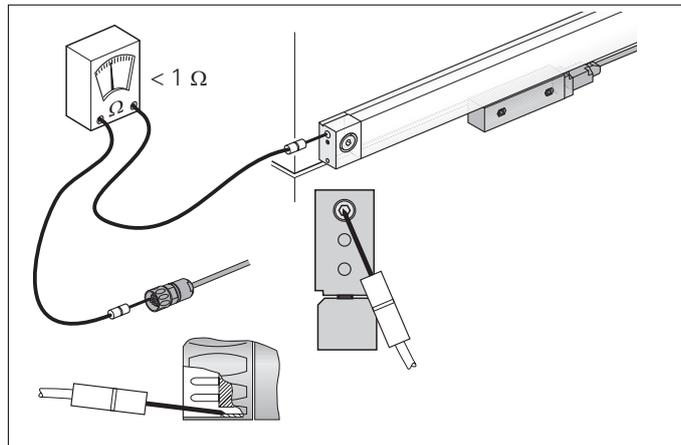
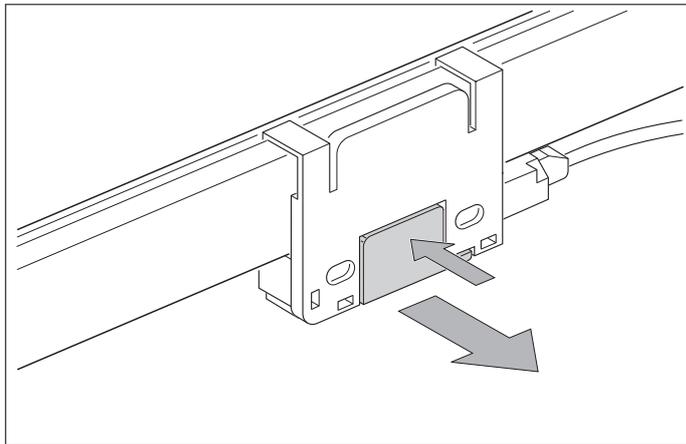








**Abschließende Arbeiten · Final Steps · Opérations finales · Operazioni finali · Trabajos finales**



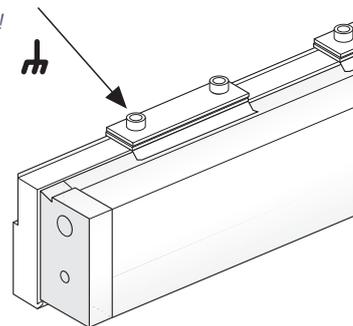
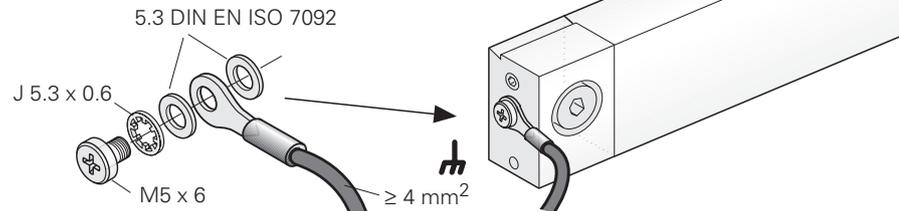
Bei Erdungsproblemen zusätzlich Endstück oder Montageschiene erden!

*If grounding problems occur, ground also the end piece or mounting spar!*

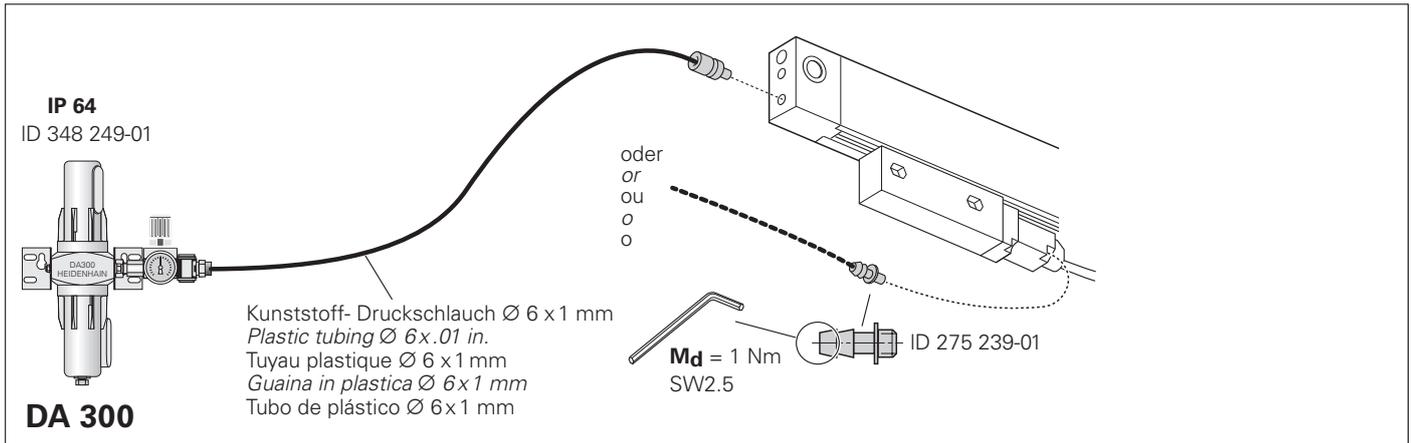
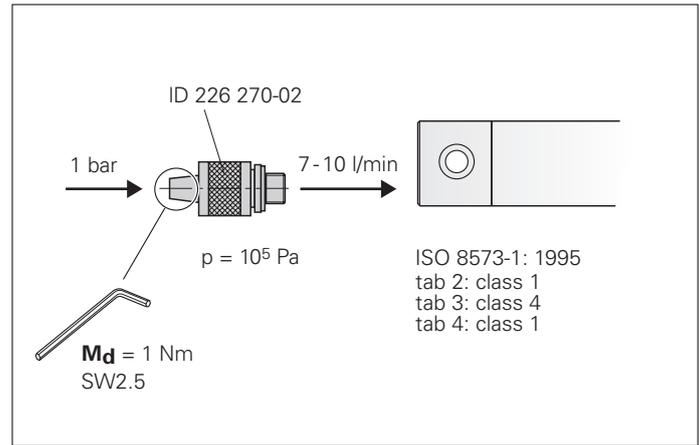
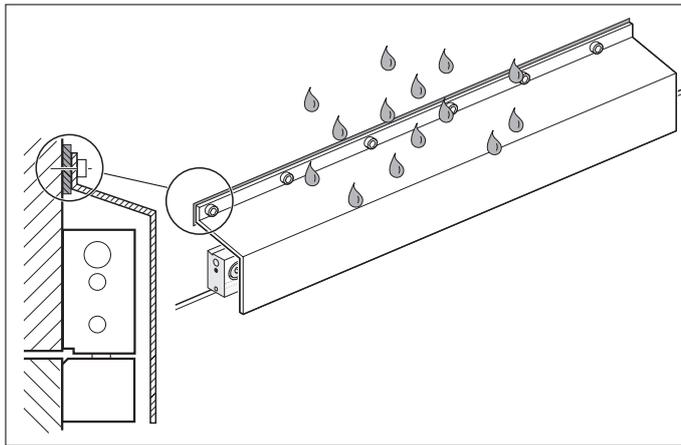
En cas de problèmes de mise à la terre, mettre aussi l'embout ou le rail de montage à la terre!

*Nel caso di problemi di messa a terra, mettere a terra anche il blocchetto terminale o la guida di montaggio!*

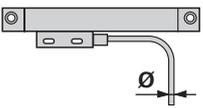
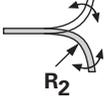
¡En caso de problemas de tierras, poner a tierra adicionalmente la pieza final o la guía de montaje!

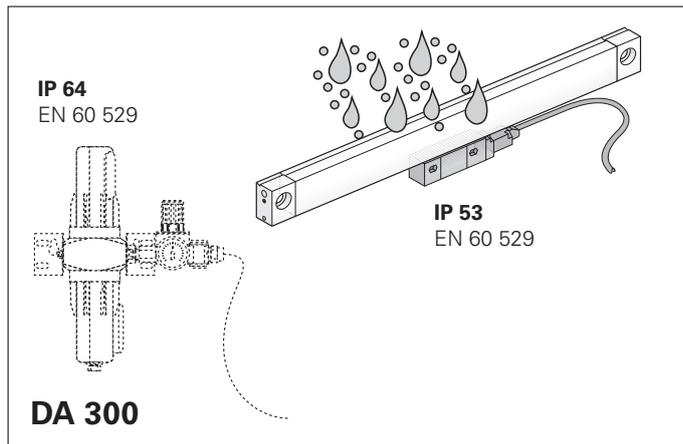
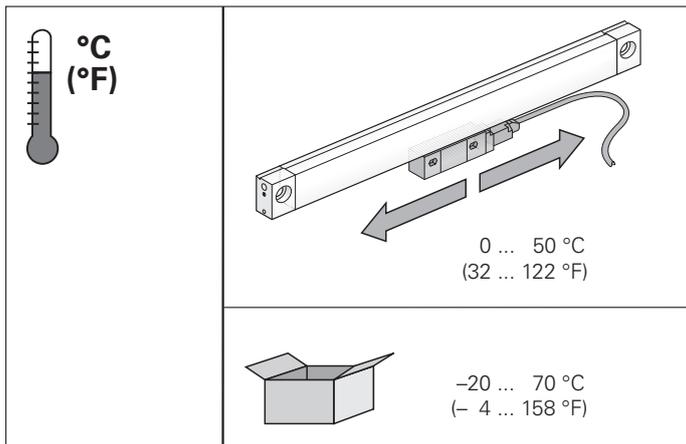
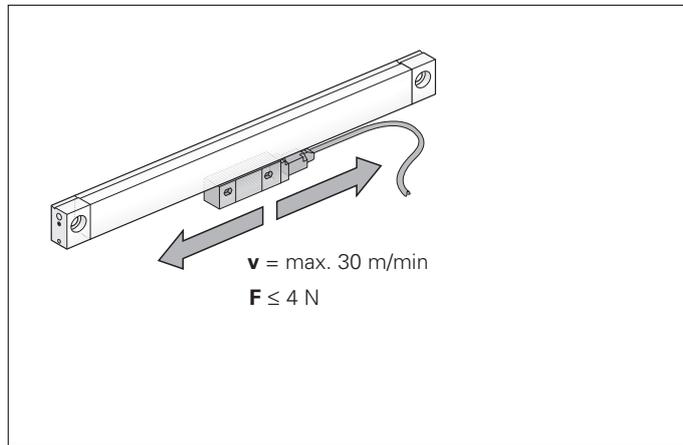


**Schutzmaßnahmen · Protective Measures · Mesures préventives · Precauzioni · Medidas de protección**

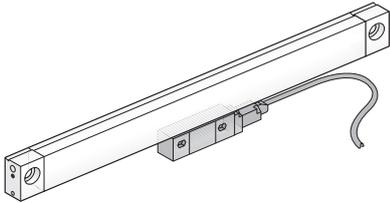


Technische Kennwerte · Specifications · Caractéristiques techniques · Dati tecnici · Datos técnicos

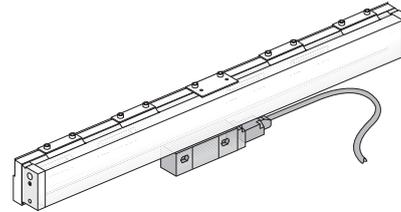
		
<b>Ø 6 mm</b>	$R_1 \geq 20 \text{ mm}$	$R_2 \geq 75 \text{ mm}$
<b>Ø 10 mm</b>	$R_1 \geq 35 \text{ mm}$	$R_2 \geq 75 \text{ mm}$
 <b>Ø 8 mm</b>	$R_1 \geq 40 \text{ mm}$	$R_2 \geq 100 \text{ mm}$



**Vibration/Schock · Vibration/Shock · Vibrations/Chocs · Vibrazioni/Shock · Vibración/Choque**

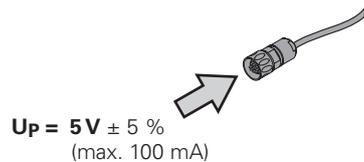


EN 60 068-2-6 (55 ... 2000 Hz): max. 80 m/s<sup>2</sup>  
EN 60 068-2-27 (11 ms): max. 100 m/s<sup>2</sup>



EN 60 068-2-6 (55 ... 2000 Hz): max. 80 m/s<sup>2</sup>  
EN 60 068-2-27 (11 ms): max. 200 m/s<sup>2</sup>

## LF 401 (C)

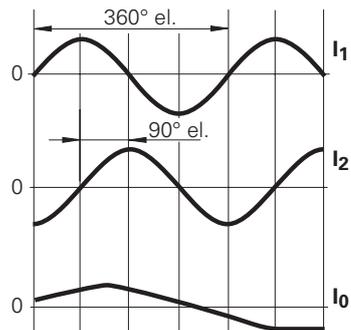


**$I_1: 7 \dots 16 \mu\text{Ass}$**   
 **$I_2: 7 \dots 16 \mu\text{Ass}$**   
 **$I_0: 2 \dots 8 \mu\text{A}$**

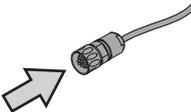


EN 50 178/4.98; 5.2.9.5  
IEC 364-4-41: 1992; 411(PELV/SELV)

(siehe, see, voir, vedi, véase  
HEIDENHAIN D 231 929)



## LF 481 (C)

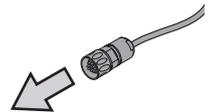


**$U_p = 5\text{ V} \pm 5\%$**   
(max. 150 mA)

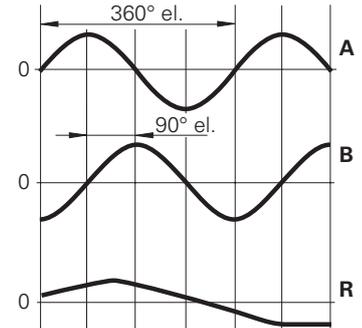


EN 50 178/4.98; 5.2.9.5  
IEC 364-4-41: 1992; 411 (PELV/SELV)

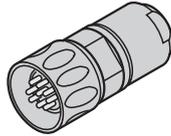
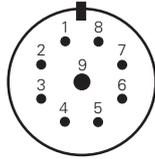
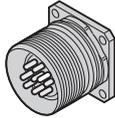
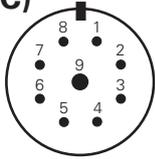
(siehe, see, voir, vedi, véase  
HEIDENHAIN D231929)



**A: 0.6 ... 1.2 V<sub>SS</sub>**  
**B: 0.6 ... 1.2 V<sub>SS</sub>**  
**R: 0.2 ... 0.85 V**

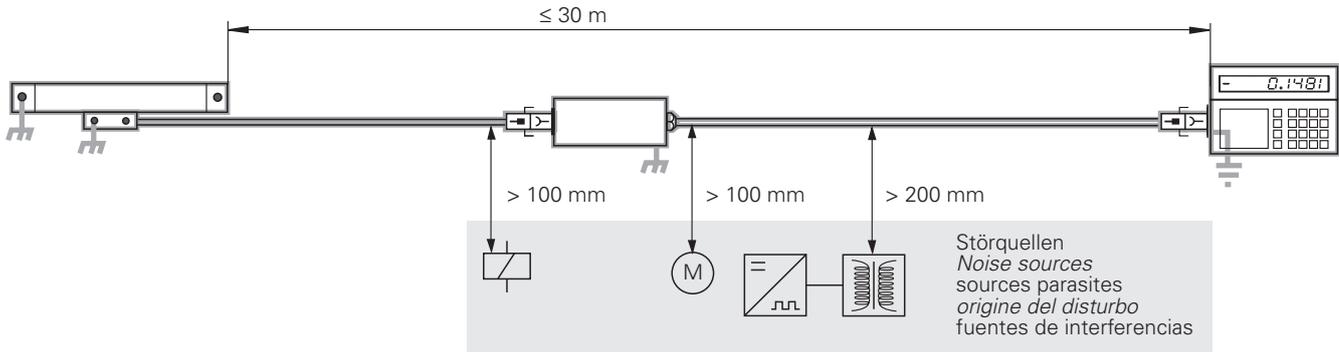


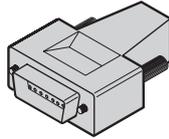
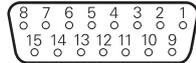
LF 401 (C)



- 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>verte</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		weiß/braun <i>white/brown</i> blanc/brun <i>bianco/marrone</i> blanco/marrón



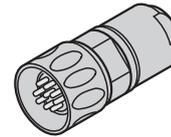
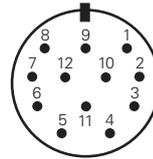
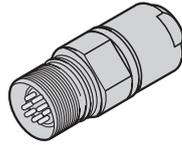
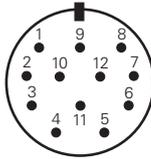


1) Außenschild auf Gehäuse  
*External shield on housing*  
 blindage externe sur boîtier  
*schermo esterno sulla carcassa*  
 blindaje externo a carcasa

2) Innenschild Pin 13  
*Internal shield pin 13*  
 blindage interne pin 13  
*schermo interno pin 13*  
 blindaje interno pin 13

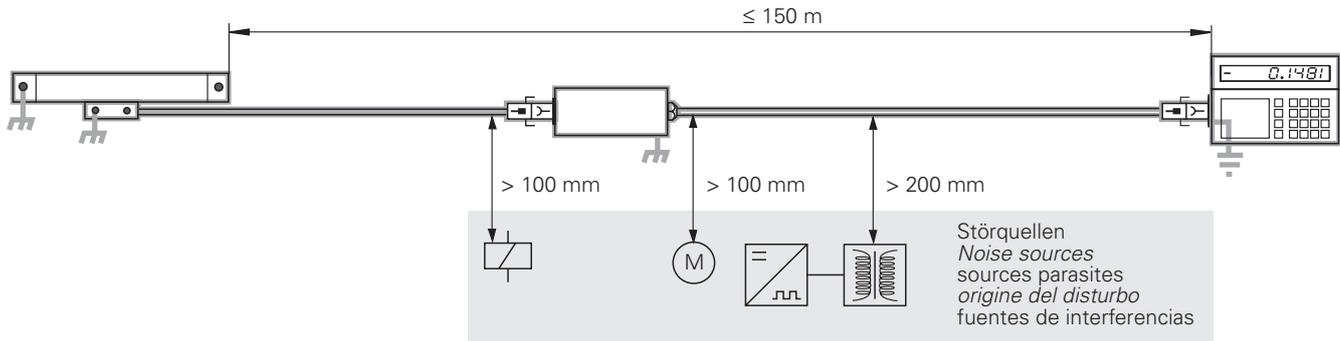
3	4	6	7	10	12	1	2	1)	13
I <sub>1</sub>		I <sub>2</sub>		I <sub>0</sub>		5V U <sub>P</sub>	0V U <sub>N</sub>		2)
+	-	+	-	+	-				
grün <i>green</i> vert <i>verde</i> verde	gelb <i>yellow</i> jaune <i>giallo</i> amarillo	blau <i>blue</i> bleu <i>azzurro</i> azul	rot <i>red</i> rouge <i>rosso</i> rojo	grau <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		weiß/braun <i>white/brown</i> blanc/brun <i>bianco/marrone</i> blanco/marrón

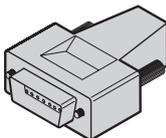
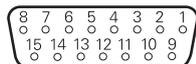
LF 481 (C)



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	/
A		B		R		5V U <sub>P</sub>	0V U <sub>N</sub>	5V sensor	0V sensor	/	/
+	-	+	-	+	-						
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





Schirm auf Gehäuse  
*Shield on housing*  
 blindage sur boîtier  
*schermo sulla carcassa*  
 blindaje a carcasa

3	4	6	7	10	12	1	2	9	11	14	/
A		B		R		5V U <sub>P</sub>	0V U <sub>N</sub>	5V sensor	0V sensor	/	/
+	-	+	-	+	-						
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

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