



HEIDENHAIN

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

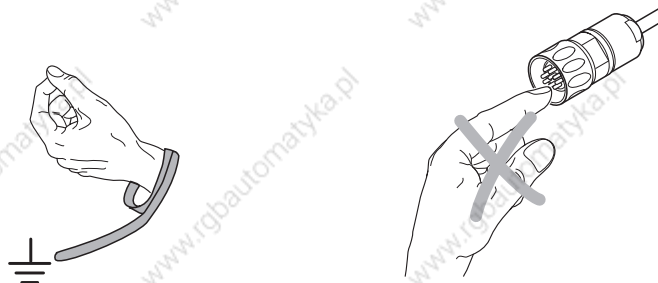
LS 406
LS 476
LS 486

10/2003

Warnhinweise · Warnings · Recommandations · Avvertenze · Advertencias

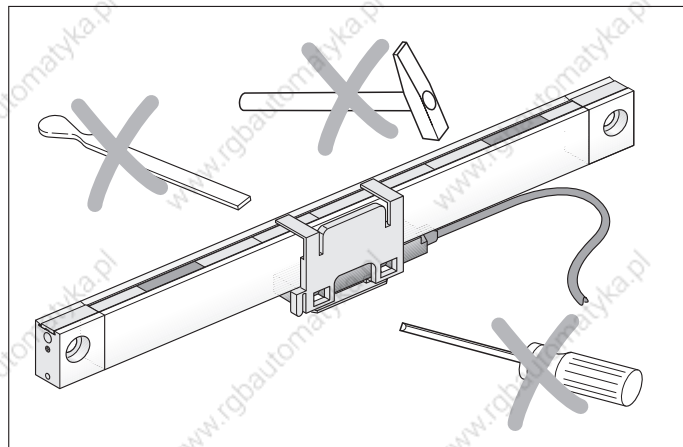
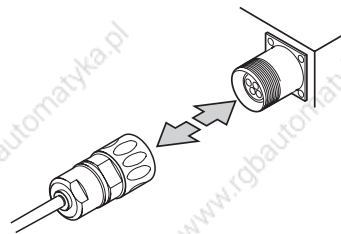
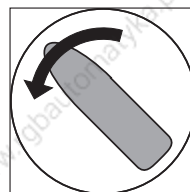


DIN EN 100 015 - 1
CECC 00015 - 1

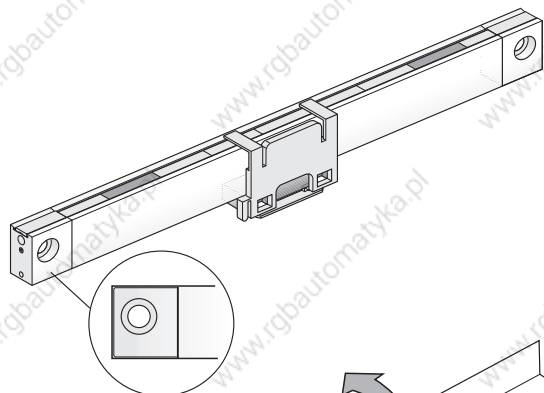


0

1



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



LS 406 (C)
LS 476 (C)
LS 486 (C)

2x
M8x25 DIN 6912

2x
M8x25 ISO 4762

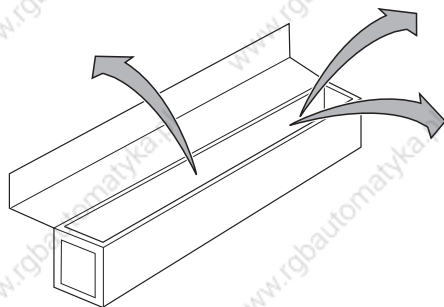


19

LS 476 (C)
LS 486 (C)

2x
D13.0/8.4

3x
D7.0/4.3



Separat bestellen
Order separately
A commander séparément
Ordinare a parte
Para pedir por separado



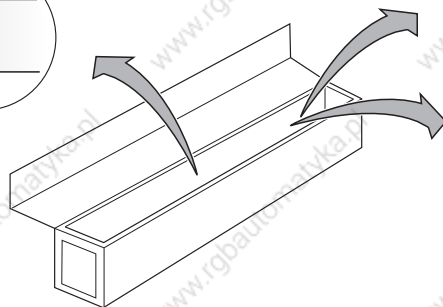
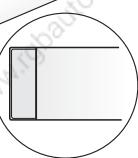
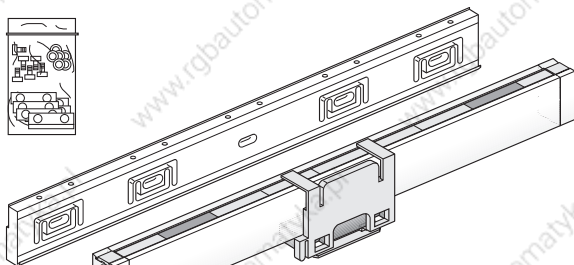
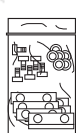
Bei Montage bitte Geräteschild-Aufkleber anbringen (Schaltschrank, Maschinen-Handbuch usw.)

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.)



19

LS 406 (C)
LS 476 (C)
LS 486 (C)

LS 476 (C)
LS 486 (C)



3x
D7.0/4.3



Separat bestellen
Order separately
A commander séparément
Ordinare a parte
Para pedir por separado



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

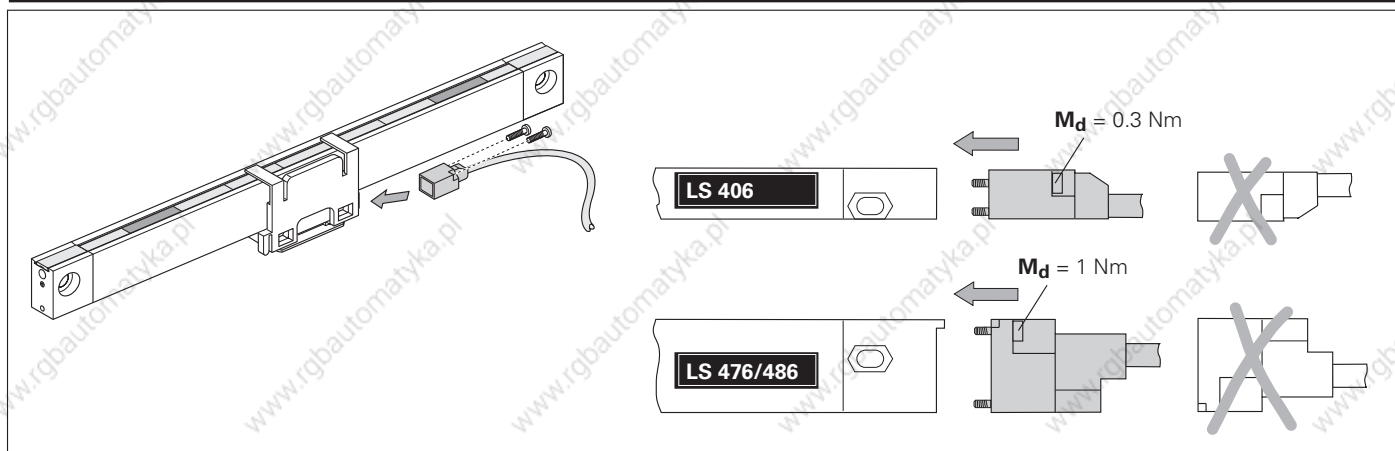
Apply the encoder ID label to an appropriate surface, e.g. the electrical cabinet or machine manual

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

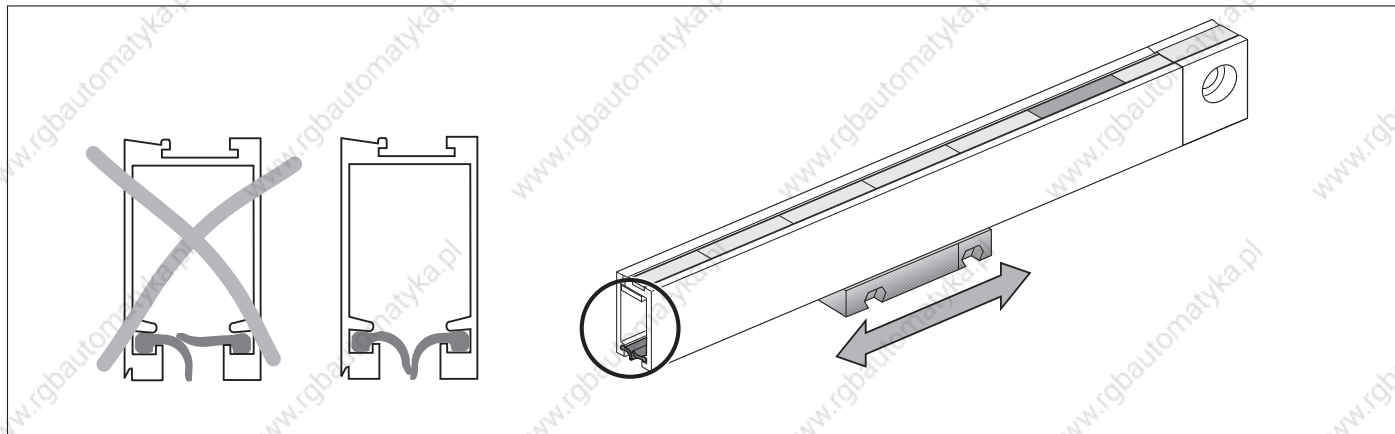
completato il montaggio, ricordarsi di applicare l'etichetta (manuale della macchina, quadro elettrico)

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

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



Referenzmarken-
Auswahl

· **Reference Mark
Selection**

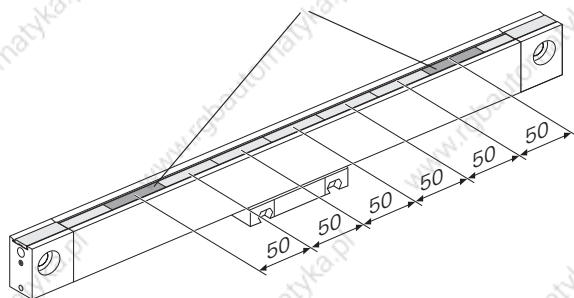
· **Sélection marques
de référence**

· **Selezione indici
di riferimento**

· **Selección marca
de referencia**

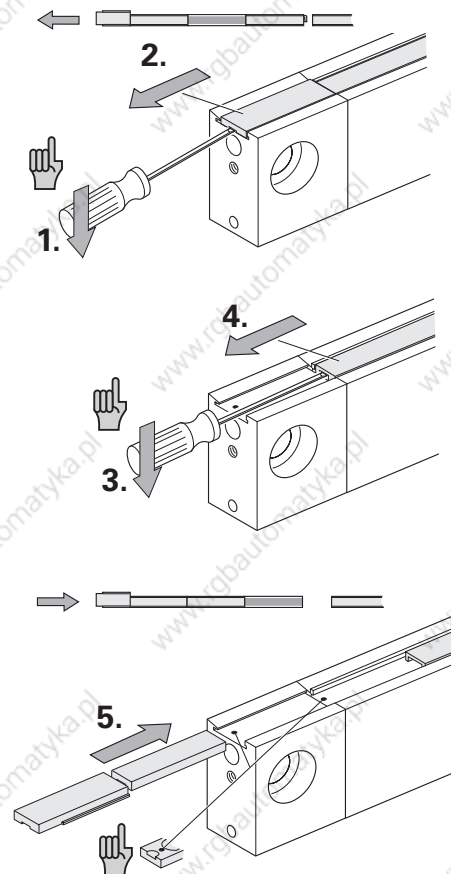
LS 4x6

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

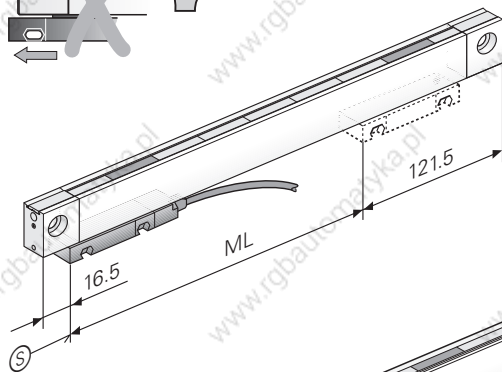
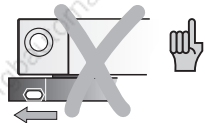


Id.-Nr. 295 795-01

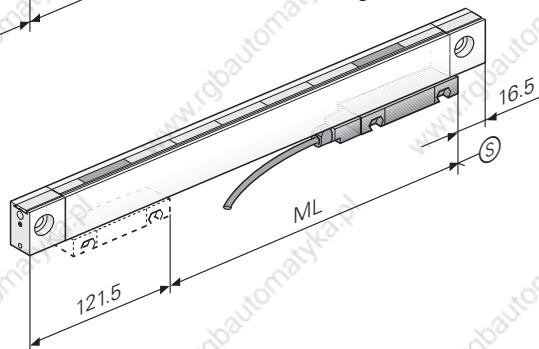
Id.-Nr. 294 336-01



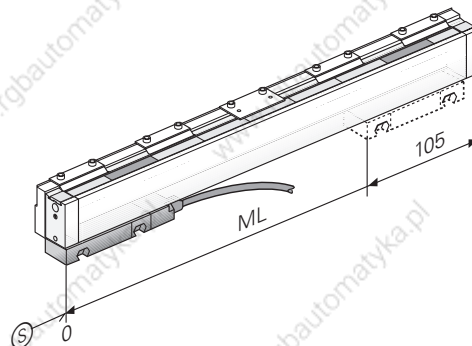
Hinweise zur Montage · Mounting Procedure · Procédures pour le montage



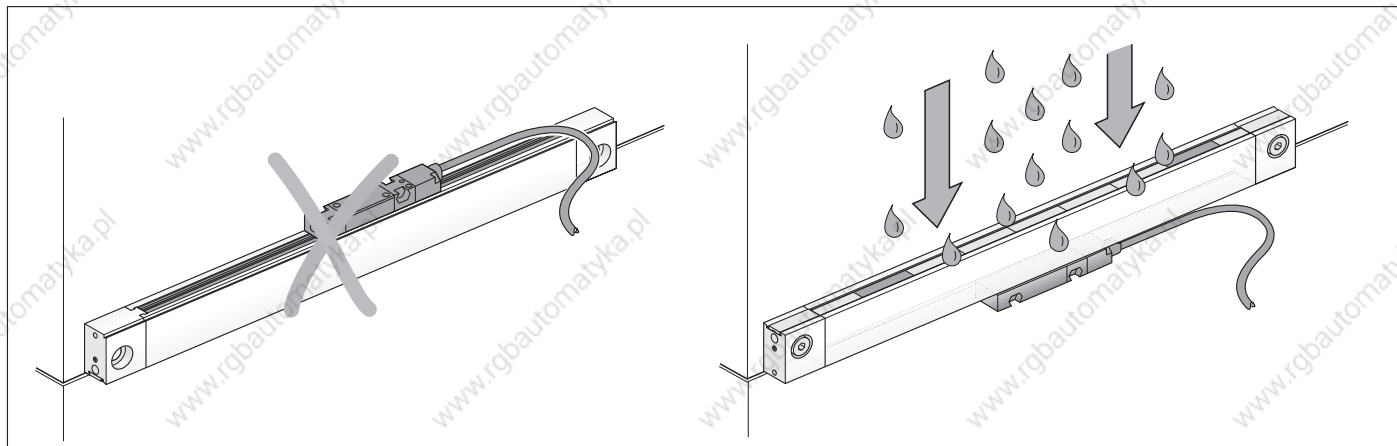
180° gedreht angebaut
 Mounted rotated by 180°
 Montage avec rotation de 180°
 Montaggio ruotato di 180°
 Montado girado 180°



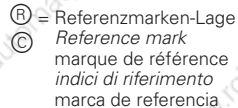
Ⓢ = Beginn der Messlänge ML
 Begin. of meas. length ML
 début longueur utile ML
 inizio lunghezza di misura ML
 comienzo longitud útil ML



Avvertenze per il montaggio · Indicaciones para el montaje



< 6 mm: ± 0.2 mm



mm



ing ISO 8015
3 - m H
±0.2 mm

11 5.5

15.5 10 15 30 M4

$(m \times 200) \pm 0.5$ $(m \times 200) \pm 0.5$

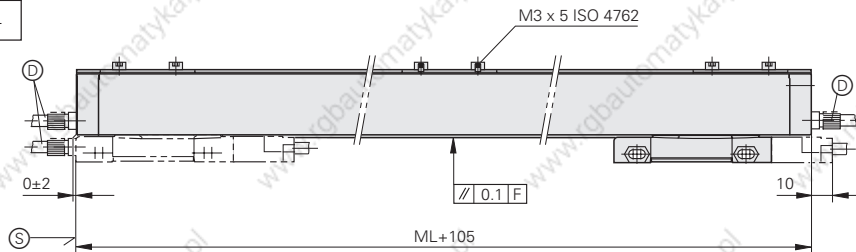
$(ML/2 + 15) \pm 0.5$ $(ML/2 + 15) \pm 0.5$

$(ML/2 + 52.5) \text{ } \textcircled{K}$

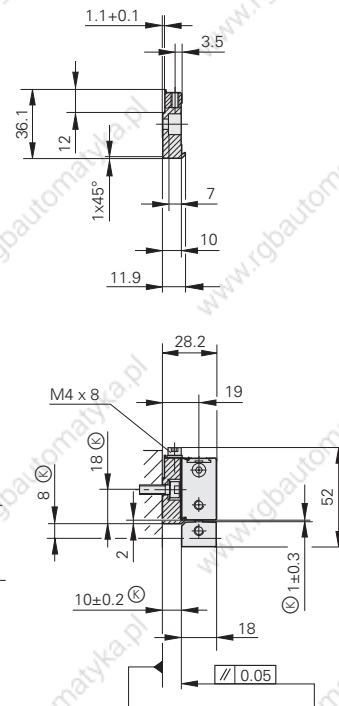
ML + 105

| | m |
|------|---|
| 520 | 0 |
| 920 | 1 |
| 1340 | 2 |

| ML | m |
|---------------|---|
| 70 ... 520 | 0 |
| 570 ... 920 | 1 |
| 1020 ... 1340 | 2 |
| 1440 ... 1740 | 3 |
| 1840 ... 2040 | 4 |



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



Abmessungen
ohne Montageschiene

· Dimensions without
Mounting Spar

· Dimensions
sans rail de guidage

· Dimensioni
senza guida

· Dimensiones
sin guía de montaje

LS 476/LS 486 (C)

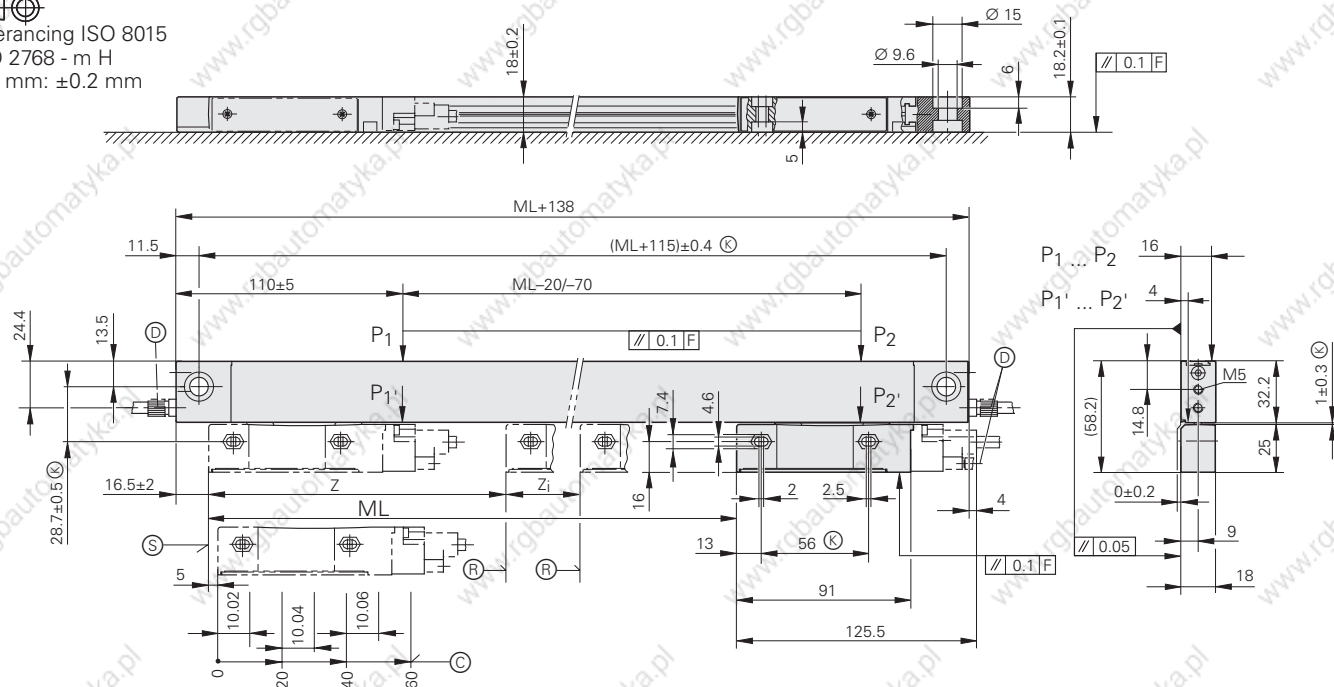
mm



Tolerancing ISO 8015

ISO 2768 - m H

< 6 mm: ± 0.2 mm



ML 70 ... 1020

z = 35 mm

z_i = ML - 70 mm

ML 1140 ... 1240

z = 45 mm

z_i = ML - 90 mm

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

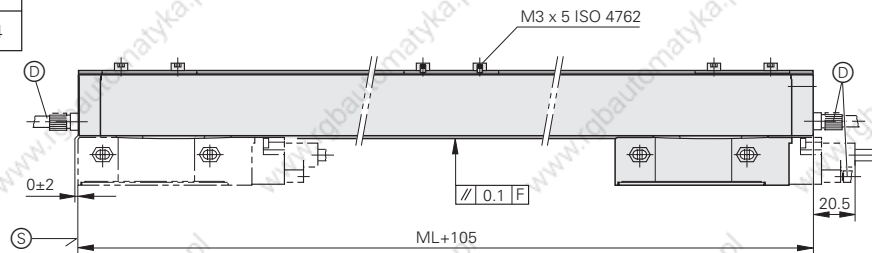
Ⓢ = Beginn der Messlänge ML
Begin. of meas. length ML
début longueur utile ML
inizio lunghezza di misura ML
comienzo longitud útil ML

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

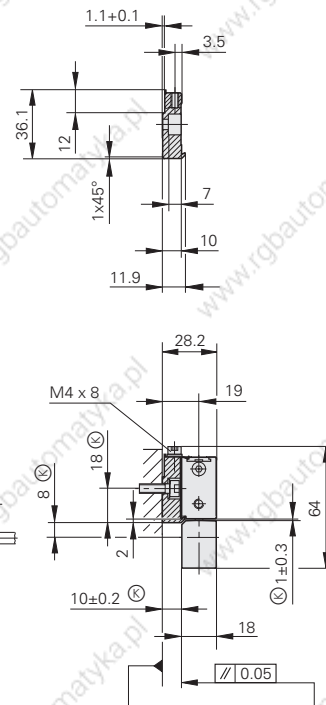
mm

[illegible]

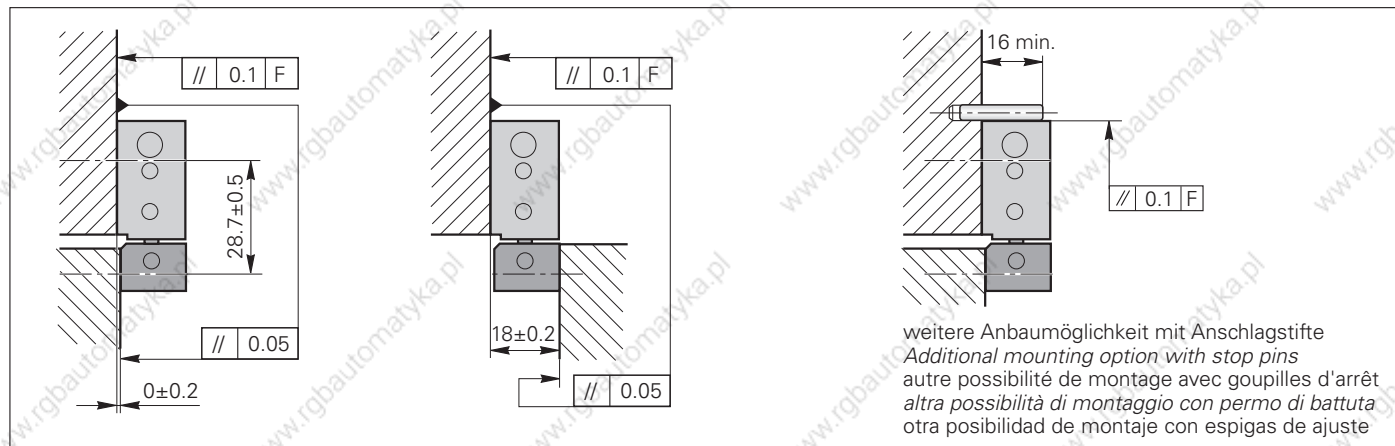
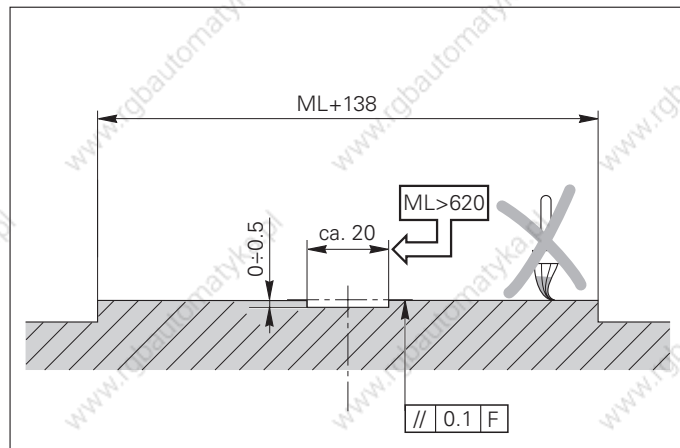
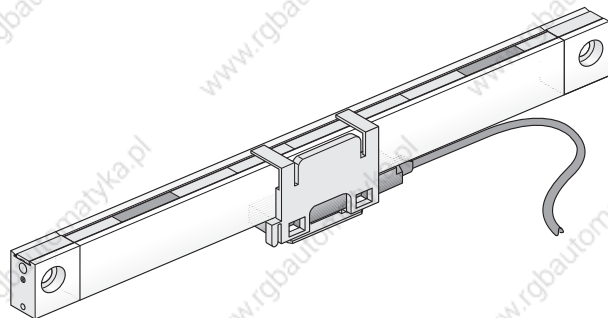
| ML | m |
|---------------|---|
| 70 ... 520 | 0 |
| 570 ... 920 | 1 |
| 1020 ... 1340 | 2 |
| 1440 ... 1740 | 3 |
| 1840 ... 2040 | 4 |



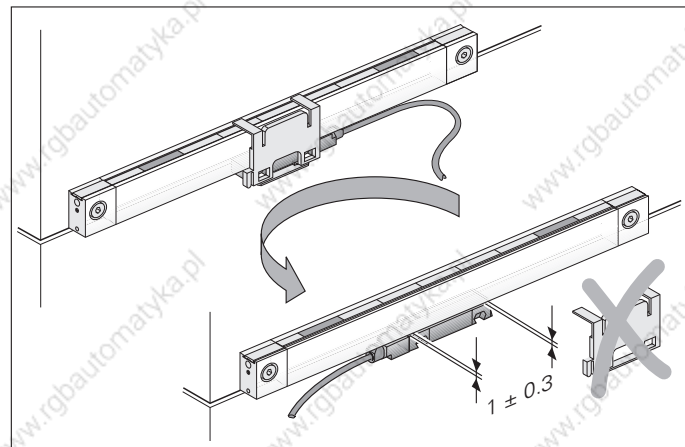
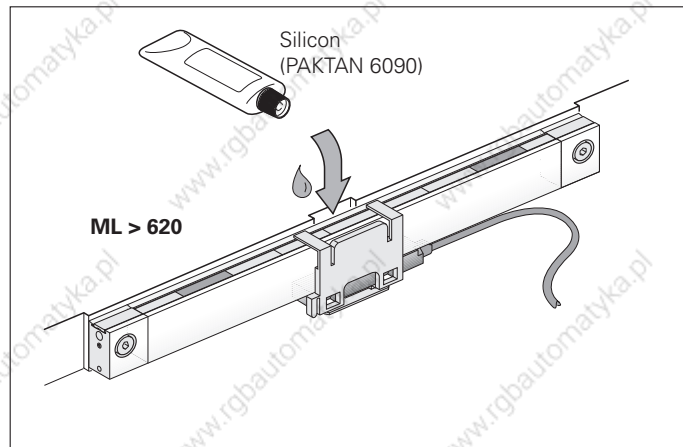
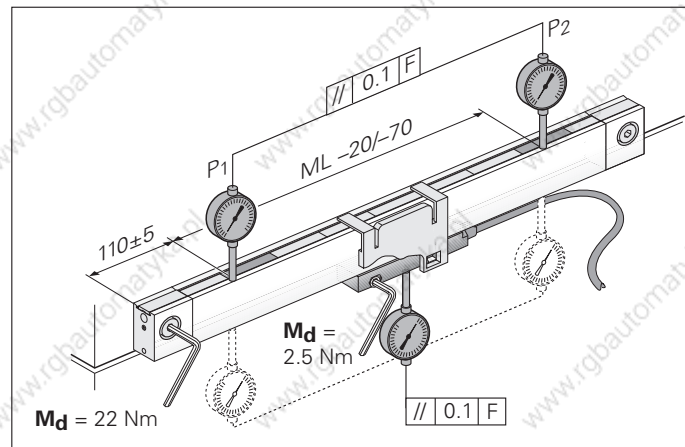
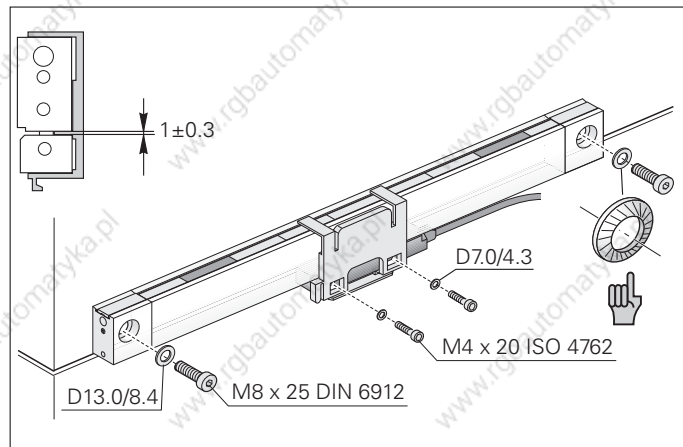
Ⓢ = Druckluftanschluss
Compressed air inlet
raccordement d'air comprimé
ingresso per pressurizzazione
conexión de aire comprimido



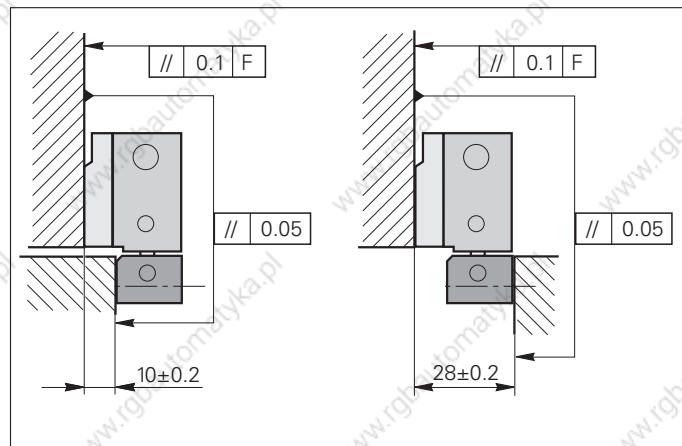
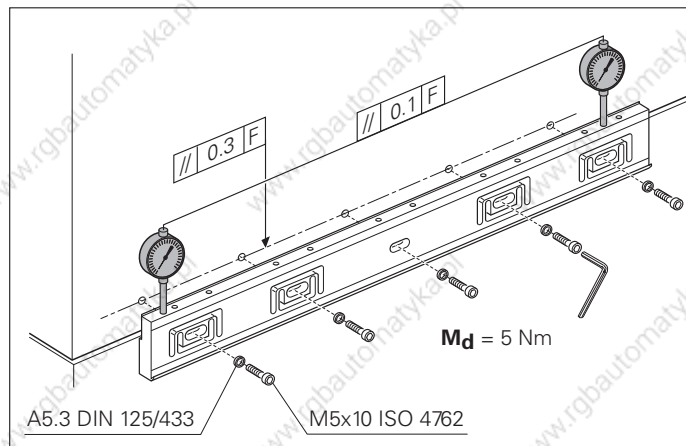
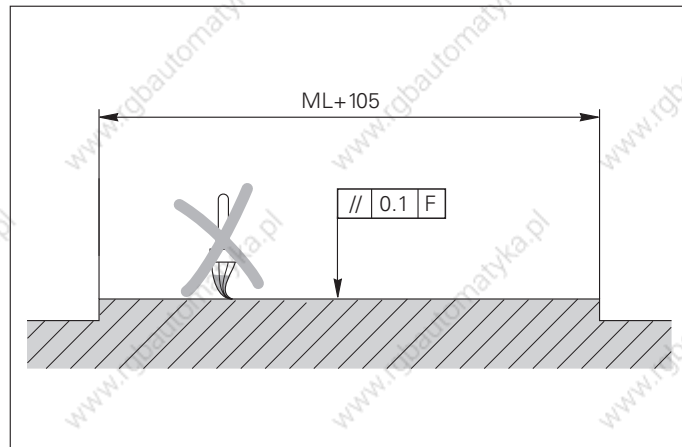
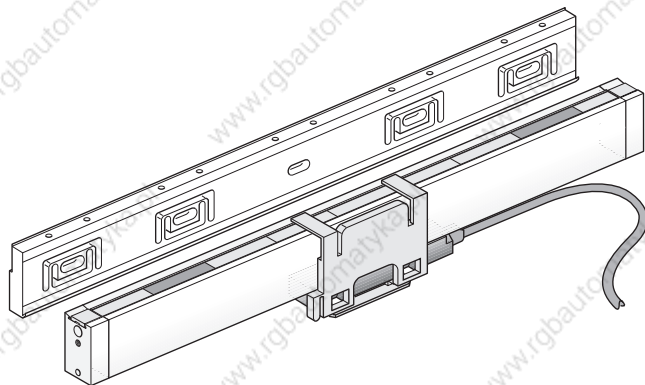
Anbau ohne Montageschiene · Mounting without Mounting Spar · Montage sans rail de guidage



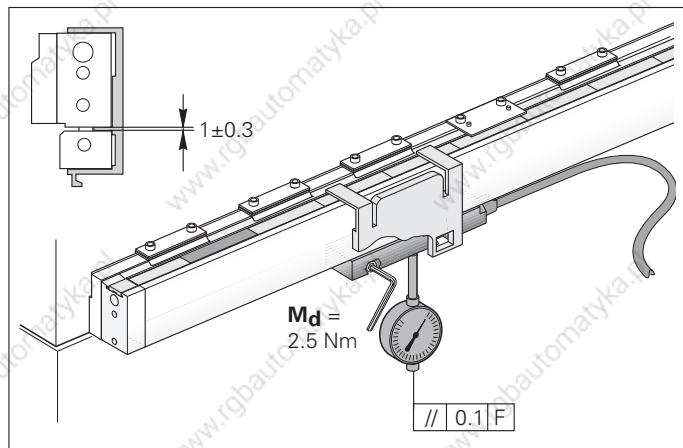
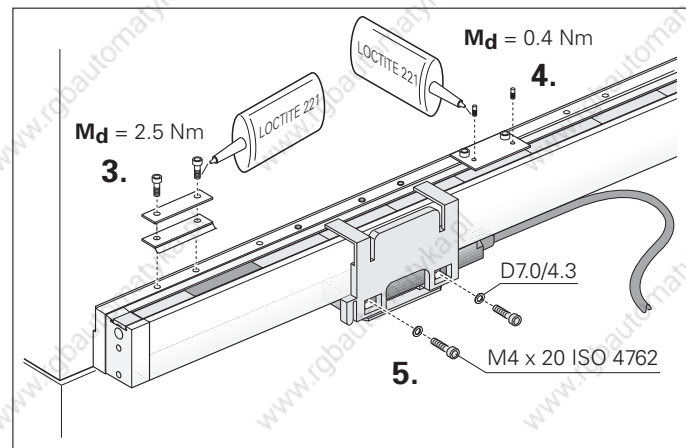
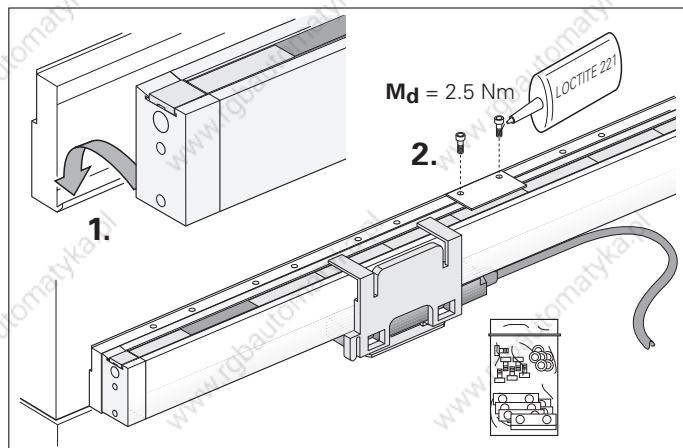
Montaggio senza guida · Instalación sin guía de montaje



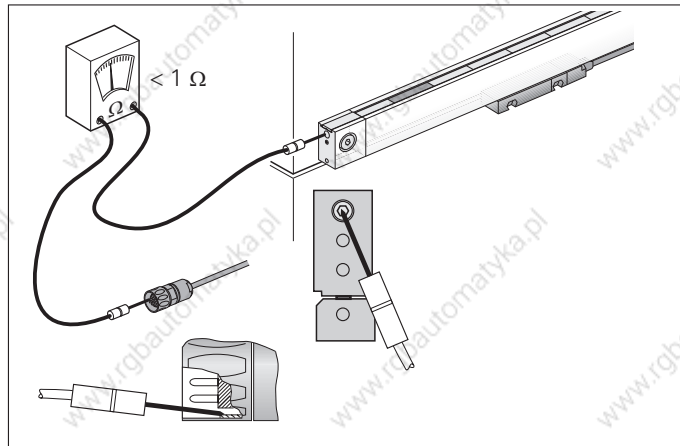
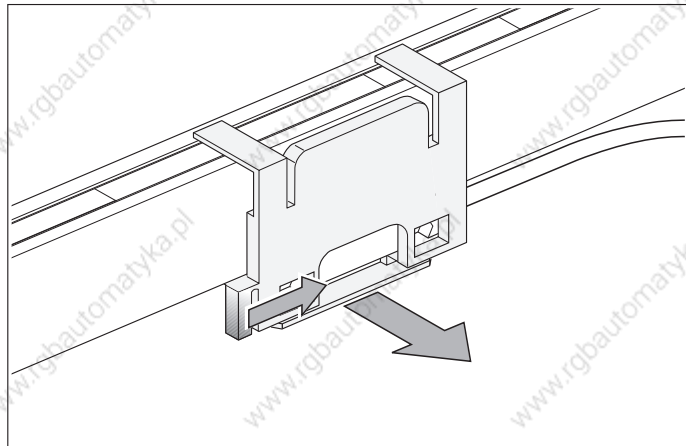
Anbau mit Montageschiene · Mounting with Mounting Spar · Montage avec rail de guidage



Montaggio con guida · Instalación con guía de montaje



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



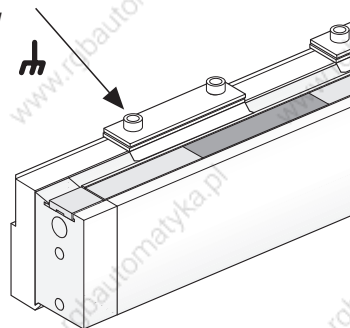
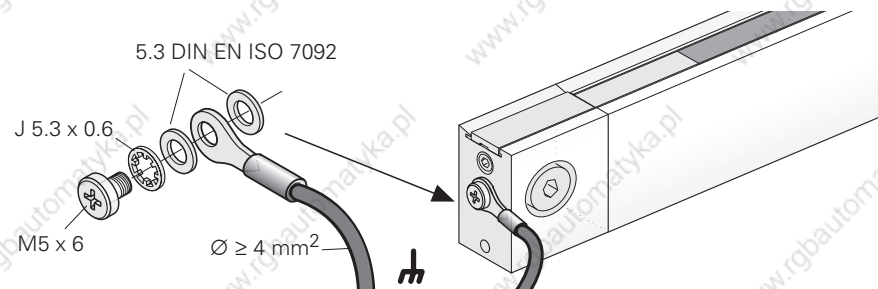
Bei Erdungsproblemen zusätzlich Endstück oder Montageschiene erden!

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

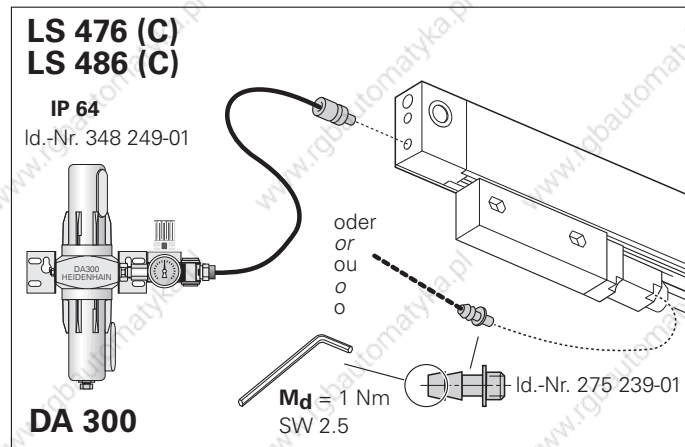
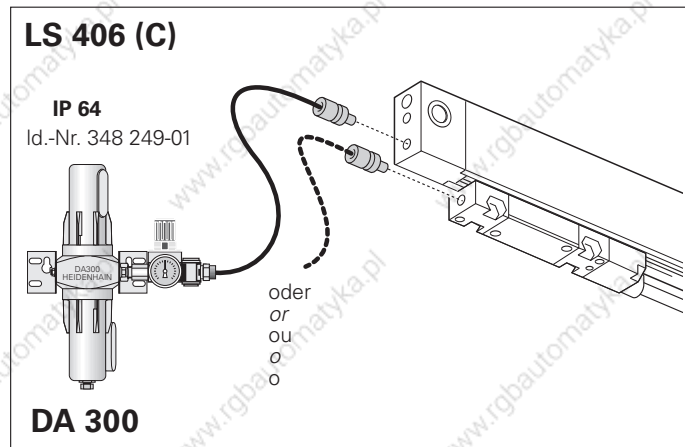
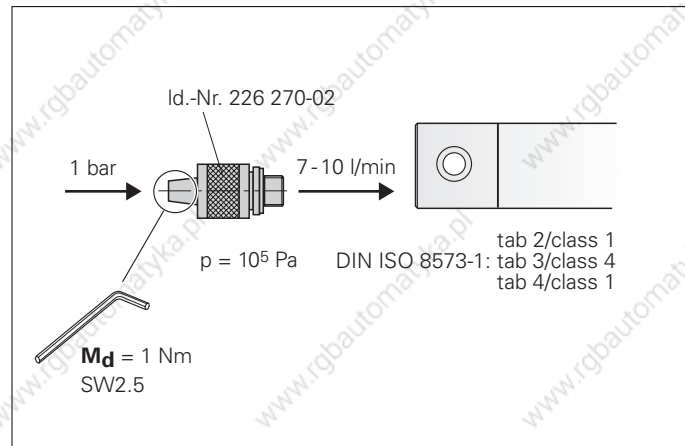
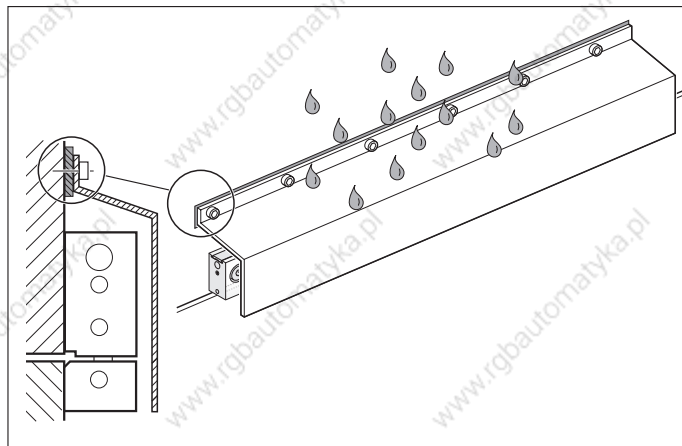
En cas de problèmes de mise à la terre, mettre aussi l'embout ou le rail de montage à la terre!

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

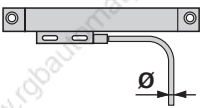

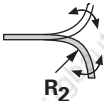

¡En caso de problemas de tierras, poner a tierra adicionalmente la pieza final o la guía de montaje!

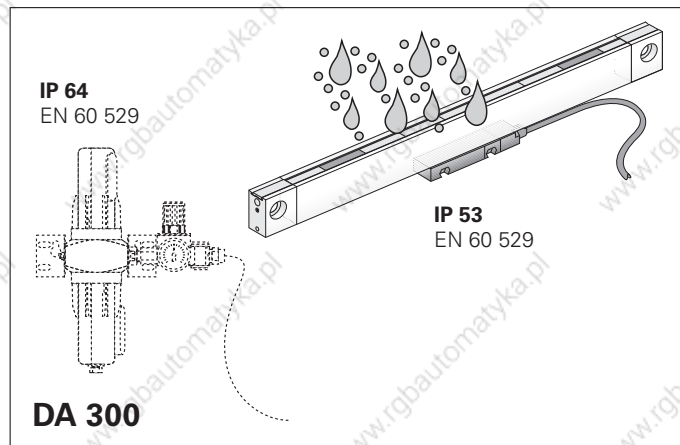
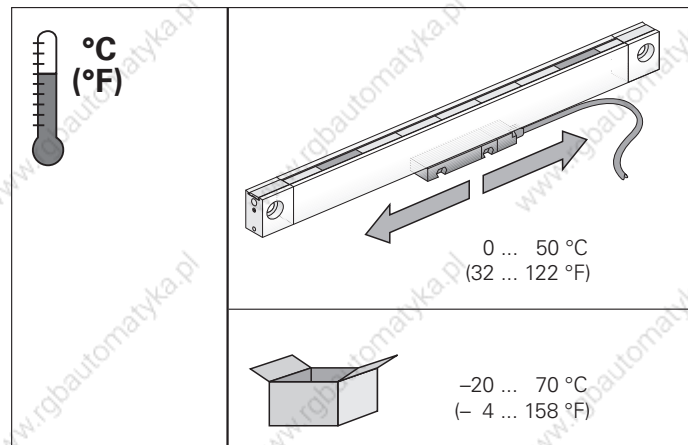
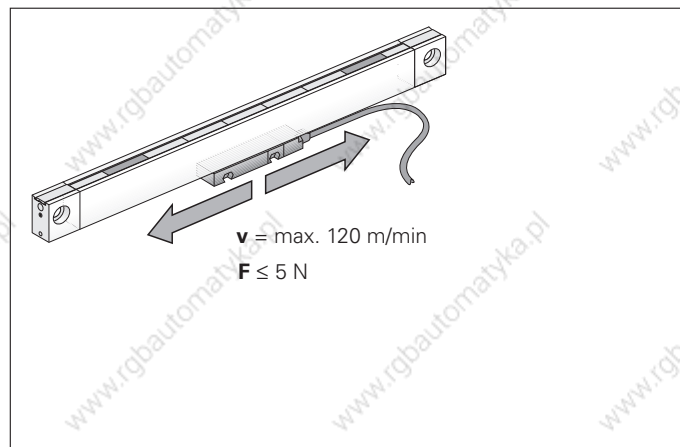


Schutzmaßnahmen · Protective Measures · Mesures préventives · Precauzioni · Medidas de protección

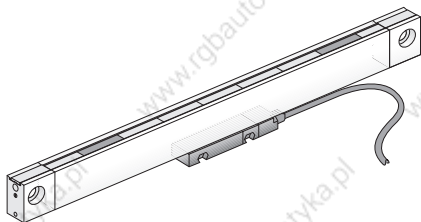


Technische Kennwerte · Specifications · Caractéristiques techniques · Dati tecnici · Datos técnicos

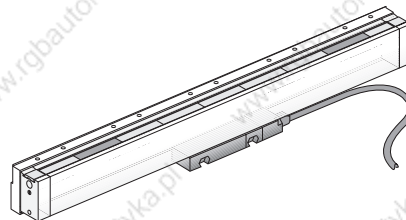
| | | |
|--|---|---|
|  |  |  |
| Ø 6 mm | $R_1 \geq 20 \text{ mm}$ | $R_2 \geq 75 \text{ mm}$ |
| Ø 10 mm | $R_1 \geq 35 \text{ mm}$ | $R_2 \geq 75 \text{ mm}$ |
|  | $R_1 \geq 40 \text{ mm}$ | $R_2 \geq 100 \text{ mm}$ |



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



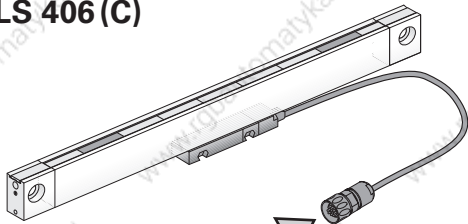
EN 60 068-2-6 (55 ... 2000 Hz): max. 100 m/s²
 EN 60 068-2-27 (11 ms): max. 300 m/s²



EN 60 068-2-6 (55 ... 2000 Hz): max. 200 m/s²
 EN 60 068-2-27 (11 ms): max. 300 m/s²

Elektrische Kennwerte · *Electrical Data* · Caractéristiques électriques · *Dati elettrici* · Datos eléctricos

LS 406 (C)

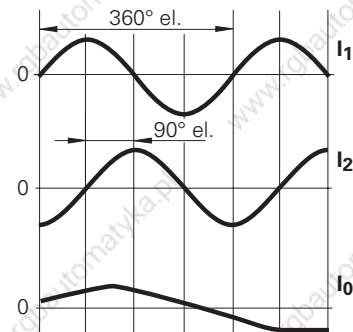
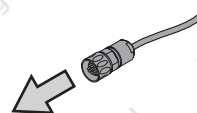


U_p = 5 V ± 5 %
 (max. 70 mA)

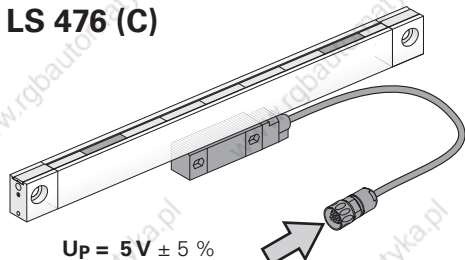


EN 50 178/4.98; 5.2.9.5
 IEC 364-4-41: 1992; 411 (PELV/SELV)
 (siehe, see, voir, vedi, véase
 HEIDENHAIN D 231 929)

I₁: 7 ... 16 µA_{SS}
I₂: 7 ... 16 µA_{SS}
I₀: 2 ... 8 µA



LS 476 (C)

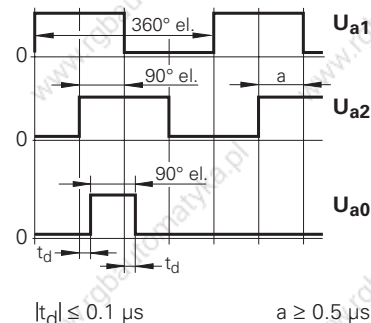
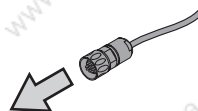


$U_P = 5V \pm 5\%$
(max. 140 mA)

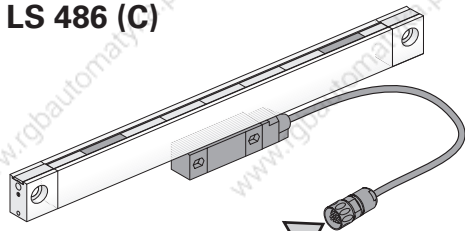


EN 50 178/4.98; 5.2.9.5
IEC 364-4-41: 1992; 411 (PELV/SELV)
(siehe, *see, voir, vedi, véase*
HEIDENHAIN D 231 929)

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



LS 486 (C)

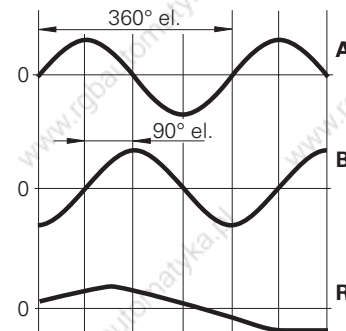
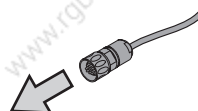


$U_P = 5V \pm 5\%$
(max. 150 mA)

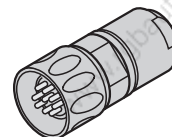
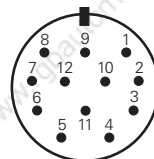
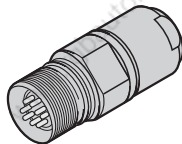
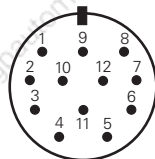


EN 50 178/4.98; 5.2.9.5
IEC 364-4-41: 1992; 411 (PELV/SELV)
(siehe, *see, voir, vedi, véase*
HEIDENHAIN D 231 929)

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

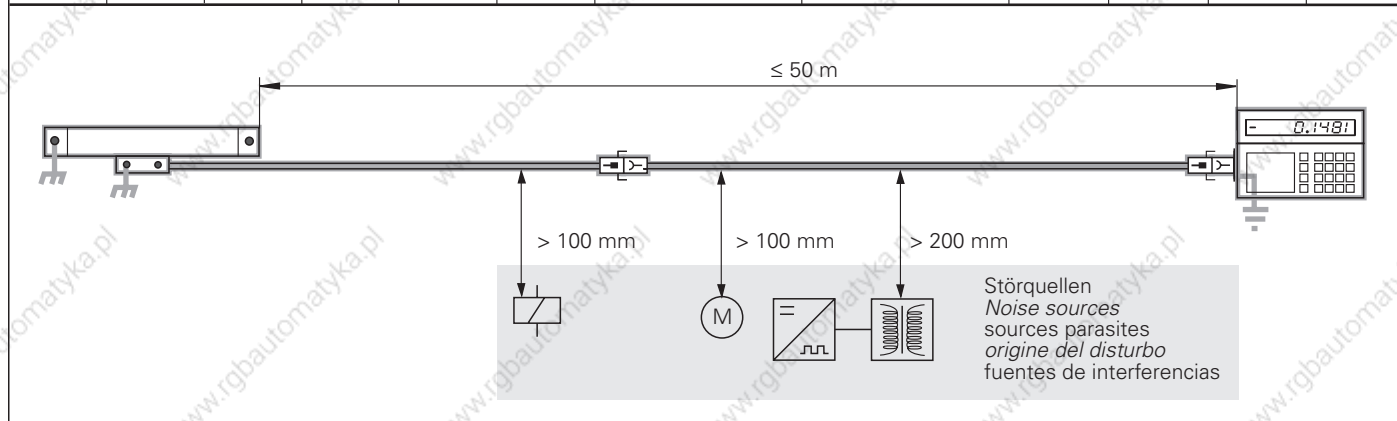


LS 476 (C)

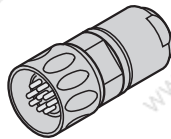
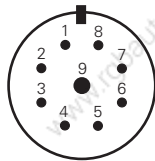
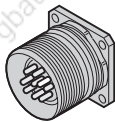
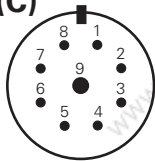


Schirm auf Gehäuse
Shield on housing
blindage sur boîtier
schermo sulla carcassa
blindaje a carcasa

| 5 | 6 | 8 | 1 | 3 | 4 | 12 | 10 | 2 | 11 | 7 | / |
|---|---|--|--|--|---|---|--|---|--|---|---|
| U_{a1} | $\overline{U_{a1}}$ | U_{a2} | $\overline{U_{a2}}$ | U_{a0} | $\overline{U_{a0}}$ | 5 V U_p | 0 V U_N | 5 V sensor | 0 V 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 |



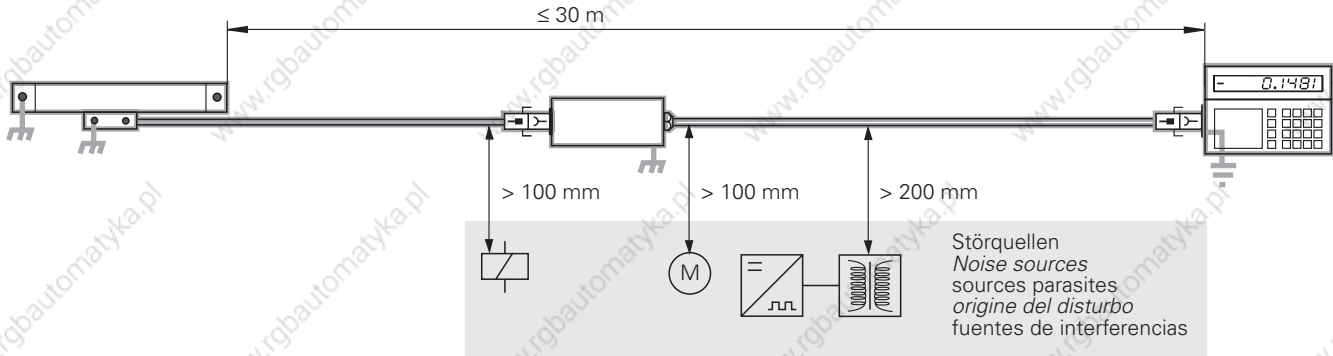
LS 406 (C)

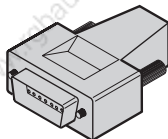
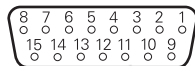


1) Außenschirm auf Gehäuse
External shield on housing
blindage externe sur boîtier
schermo esterno sulla carcassa
blindaje externo a carcasa

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 ₁ | | I ₂ | | I ₀ | | 5 V U _P | 0 V U _N | | 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> bianco/brun <i>bianco/marrone</i> blanco/marrón |





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

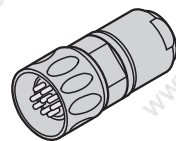
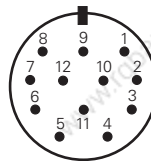
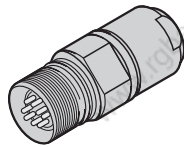
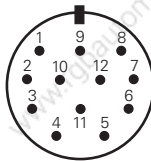
2) Innenschirm Pin 13
Internal shield pin 13
 blindage interne pin 13
 schermo interno pin 13
 blindaje interno pin 13

| 3 | 4 | 6 | 7 | 10 | 12 | 1 | 2 | 1) | 13 |
|--|--|--|---|---|---|--|---|----|---|
| I ₁ | | I ₂ | | I ₀ | | 5 V U _P | 0 V U _N | | 2) |
| + | – | + | – | + | – | | | | |
| grün <i>green</i> vert verde verde | gelb <i>yellow</i> jaune giallo amarillo | blau <i>blue</i> bleu azzurro azul | rot <i>red</i> rouge rosso rojo | grau <i>gray</i> gris grigio gris | rosa <i>pink</i> rose rosa rosa | braun <i>brown</i> brun marrone marrón | weiß <i>white</i> blanc bianco blanco | | weiß/braun <i>white/brown</i> blanc/brun bianco/marrone blanco/marrón |



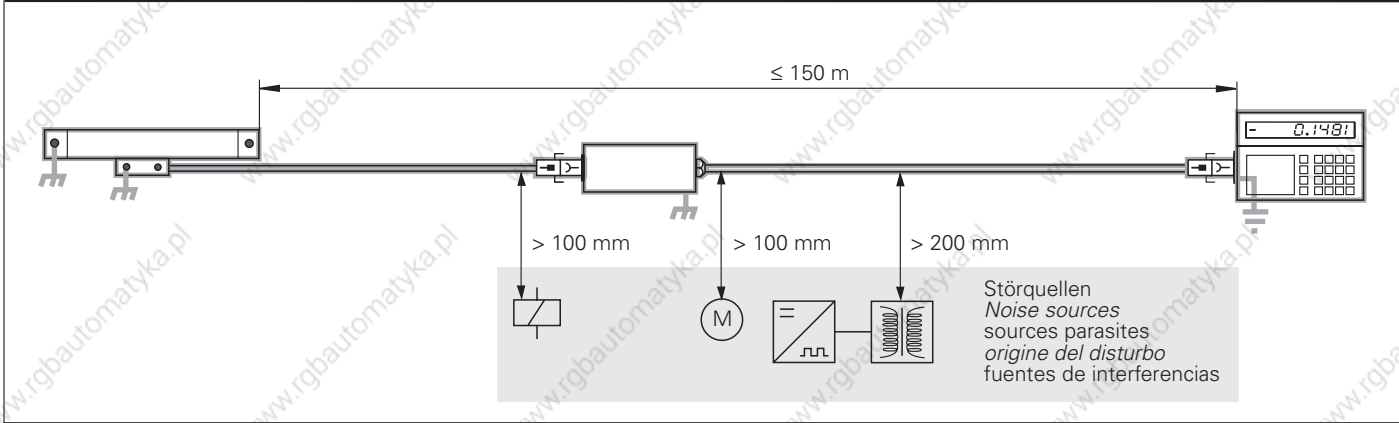
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TNC

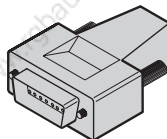
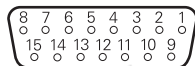
LS 486 (C)



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 _P | 0V U _N | 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 _P | 0V U _N | 5V sensor | 0V sensor | / | / |
| + | – | + | – | + | – | | | | | | |
| braun brown brun marrone marrón | grün green vert verde verde | grau gray gris grigio gris | rosa pink rose rosa rosa | rot red rouge rosso rojo | schwarz black noir nero negro | braun/grün brown/green brun/vert marrone/verde marron/verde | weiß/grün white/green blanc/vert bianco/verde blanco/verde | blau blue bleu azzurro azul | weiß white blanc bianco blanco | violett violet violet viola violeta | gelb yellow jaune giallo amarillo |



IK 220
 TNC

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