



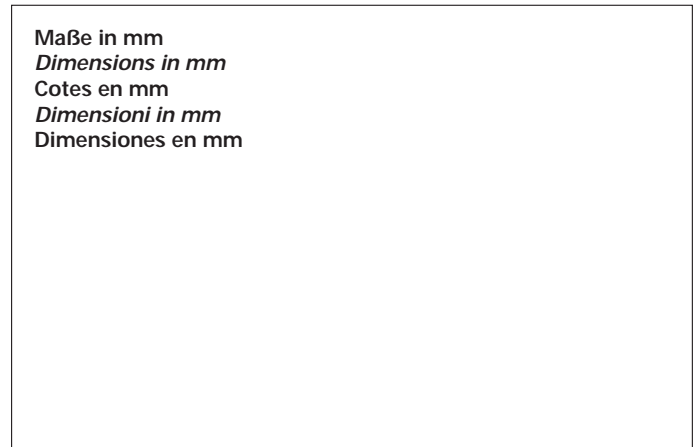
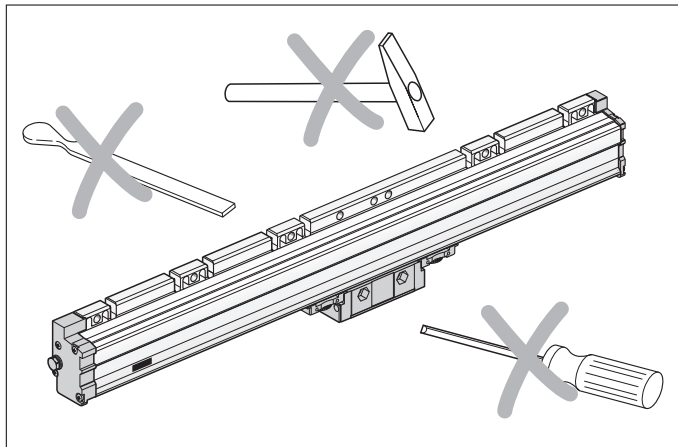
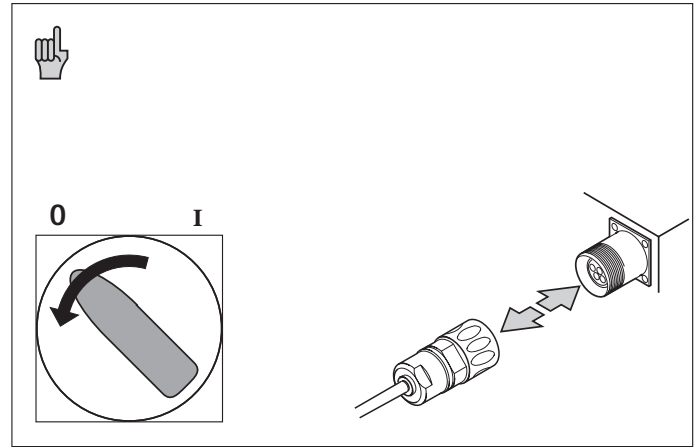
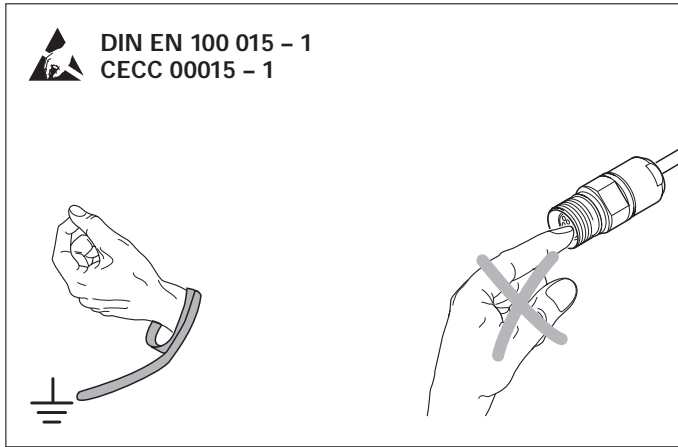
HEIDENHAIN

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

LC 192 M
MITSUBISHI
High Speed Serial Interface

7/2004

Warnhinweise · Warnings · Recommendations · Avvertenze · Advertencias





Die Inbetriebnahme des LC 192 M erfordert eine richtige Parametrierung der MITSUBISHI-Steuerung (Gefahr von Sach- und Personenschäden). Zur richtigen Parametrierung nehmen Sie bitte Kontakt zum Hersteller der Maschine auf.

The MITSUBISHI control parameters for the LC 192 M must be correctly configured for proper function. Improper configuration may result in damage to the equipment or even personal injury. Please contact the machine manufacture for the correct parameter configuration.

La mise en route du LC 192 M nécessite un paramétrage correct de la commande MITSUBISHI (risque matériels et corporels). Pour effectuer le paramétrage correctement, prenez S.V.P. contact avec le constructeur de la machine.

La messa in funzione della LC 192 M richiede una corretta parametrizzazione del controllo MITSUBISHI (rischio di danni alle cose e alle persone). Per una corretta parametrizzazione mettersi in contatto con il costruttore della macchina.

La puesta en marcha de la LC 192 M requiere una parametrización correcta del sistema de medida MITSUBISHI (peligro de daños en cosas y personas). Para la parametrización correcta contacten con el constructor de la máquina.



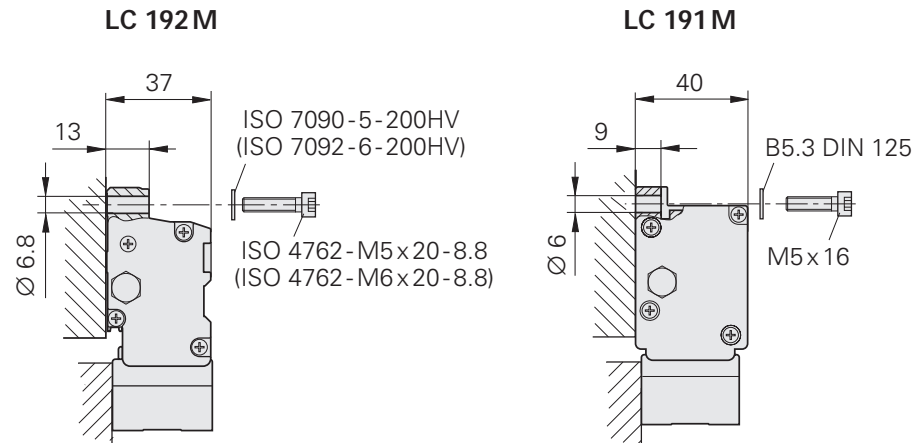
LC 192M als Ersatzgerät für LC 191 M

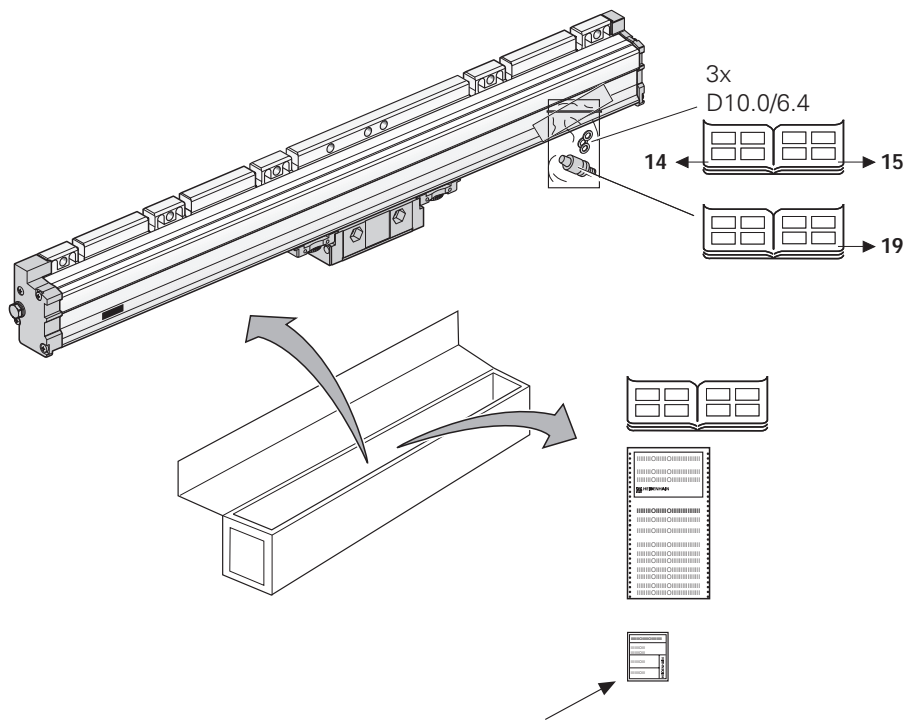
LC 192M as replacement encoder for LC 191 M

LC 192M en remplacement du LC 191 M

LC 192M come apparecchio sostitutivo per la LC 191 M

LC 192M como aparato de repuesto para la LC 191 M





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

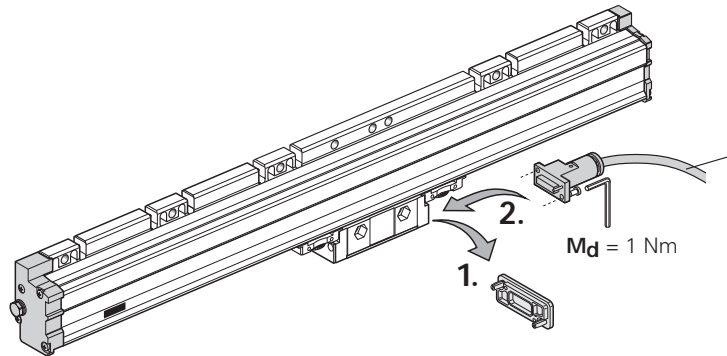
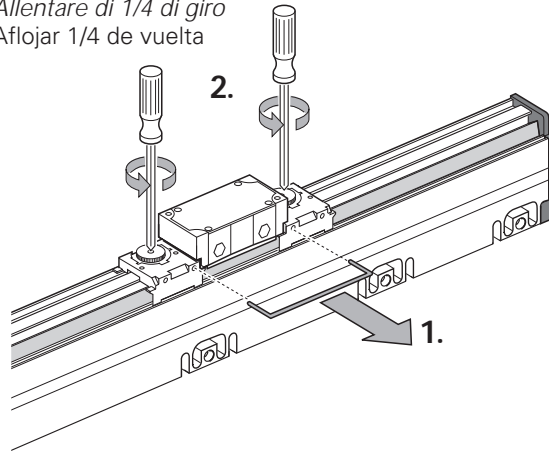
Apply the encoder ID label to an appropriate surface, e.g. the electrical cabinet or machine manual

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)

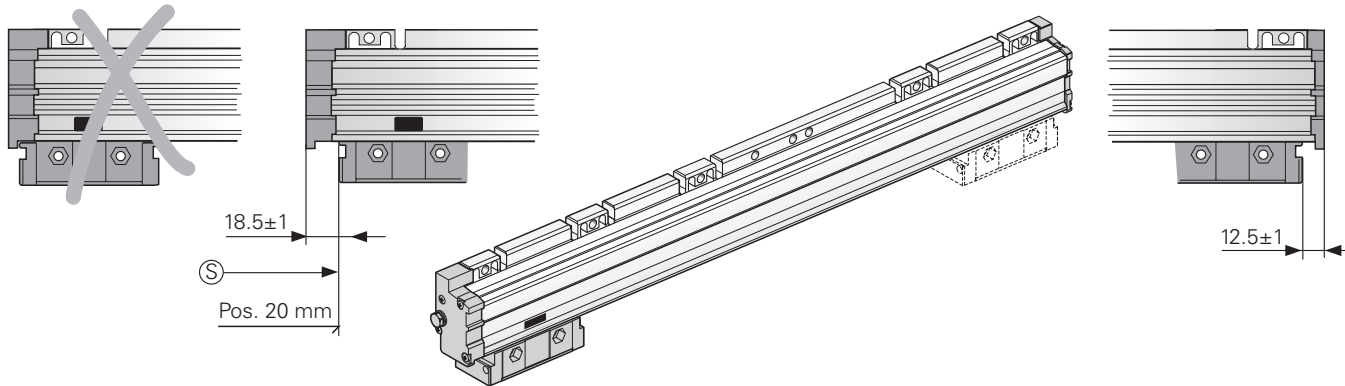
Por favor, durante el montaje, colocar el adhesivo del letrero del aparato (armario eléctrico, modo de empleo de la máquina, etc.)

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

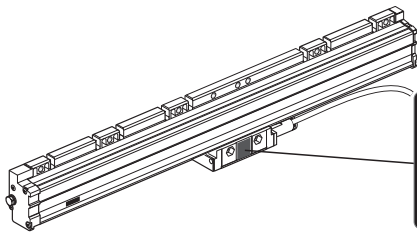


Separat bestellen
Order Separately
Commander séparément
Ordinare separatamente
Pedir por separado

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

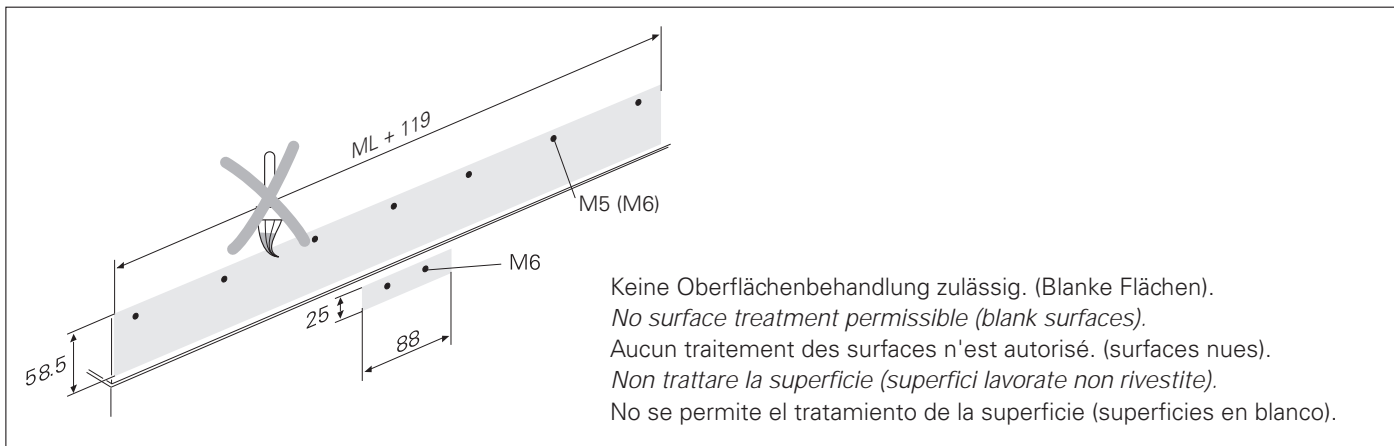
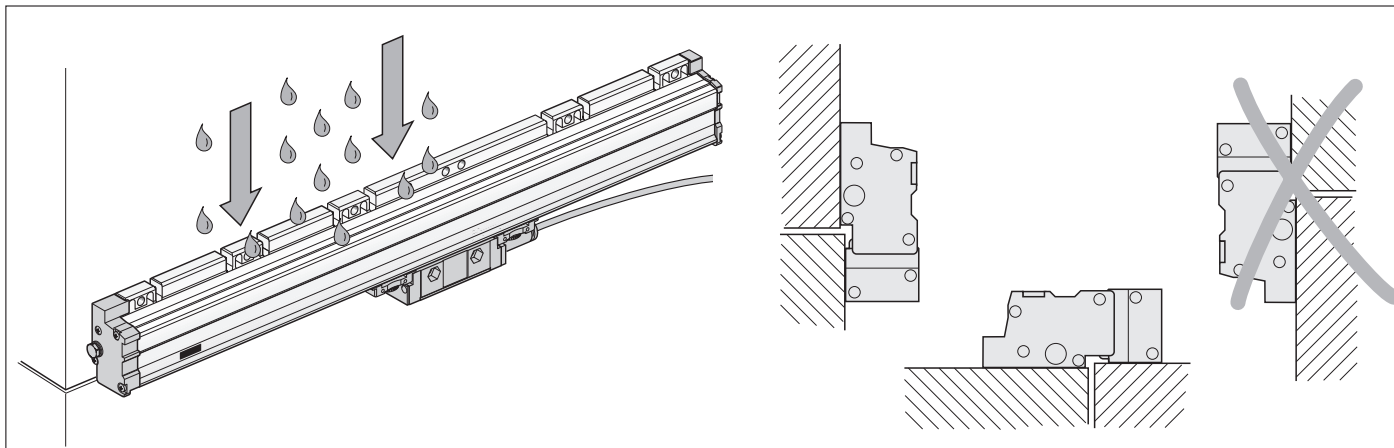


- S = Der Absolutwert beim Beginn der Messlängen beträgt 20 mm. Je nach Auflösung errechnet sich der Positionswert.
At the beginning of the measuring lengths, the absolute value is 20 mm. The calculated position value depends on the resolution.
 La valeur absolue au début des longueurs de mesure est de 20 mm. La valeur de position est calculée en fonction de la résolution.
All'inizio della corsa utile, il valore assoluto della posizione è di 20 mm. Il calcolo del valore di posizione dipende dalla risoluzione.
 Al comienzo del curso útil, el valor absoluto es de 20 mm de los extremos. El valor de posición se calcula en función de la resolución.

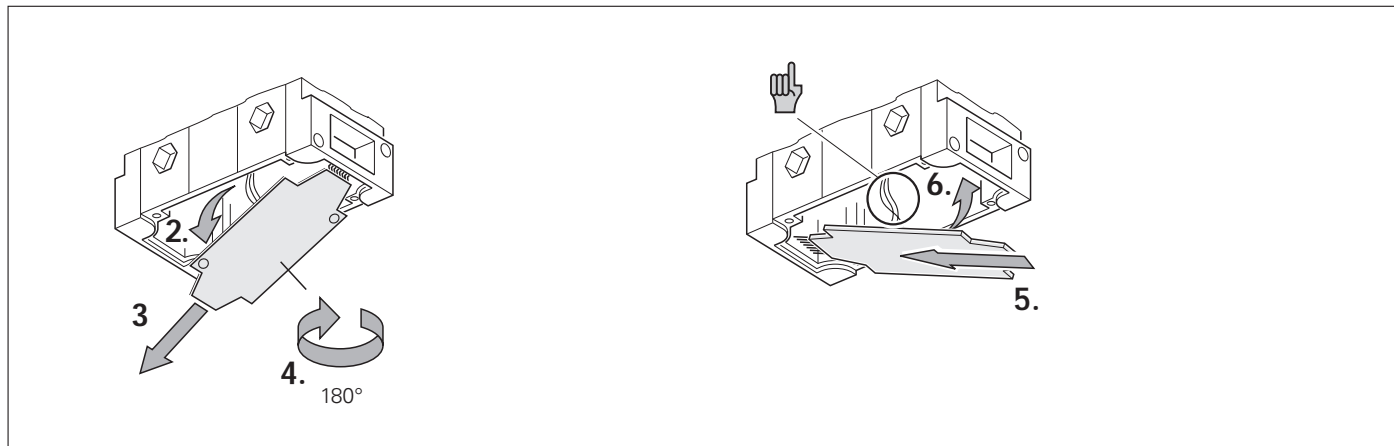
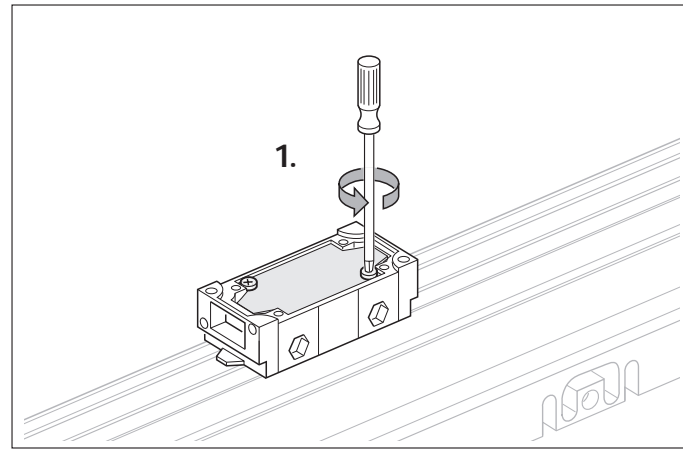
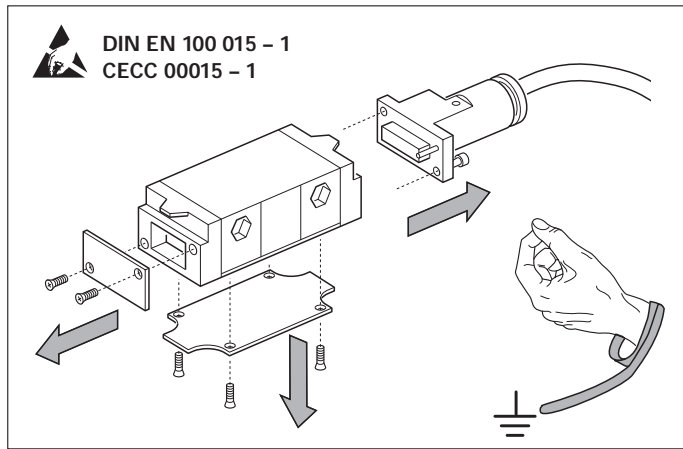


Messschritt z.B. 50 nm oder 0 = programmierbar für Service
Measuring step e.g. 50 nm or 0 = programmable for Service
 Pas de mesure ex. 50 nm ou 0 = programmable pour SAV
Passo di misura ad. es. 50 nm oppure 0 = programmabile per assistenza tecnica
 Paso de medición p.ej. 50 nm ó 0 = programable para servicio

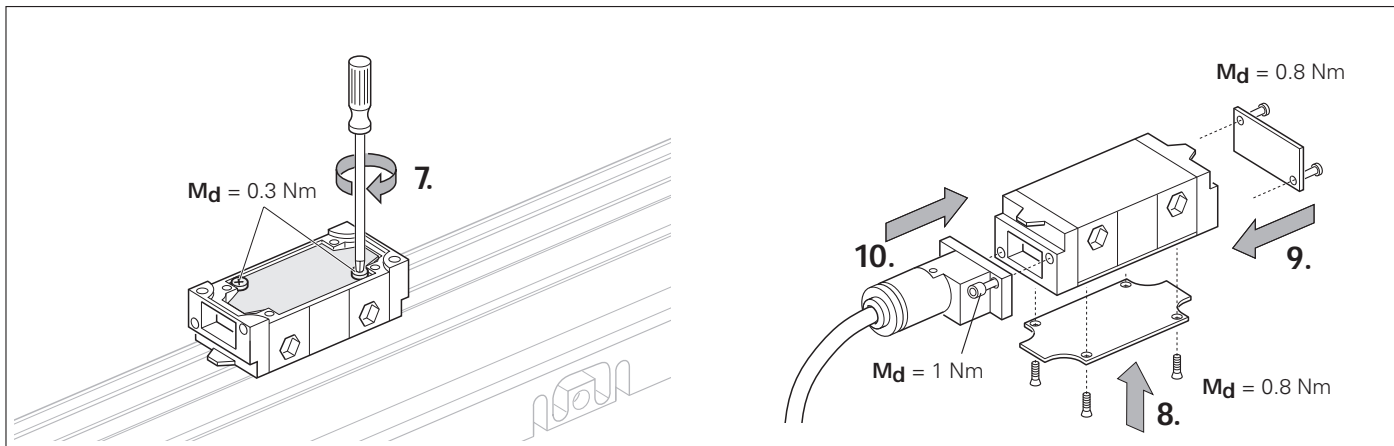
Avvertenze per il montaggio · Indicaciones para el montaje



Kabelausgang verlegen · *Changing the Cable Outlet* · Poser la sortie du câble



Configurazione dell'uscita del cavo · Colocar cable de salida



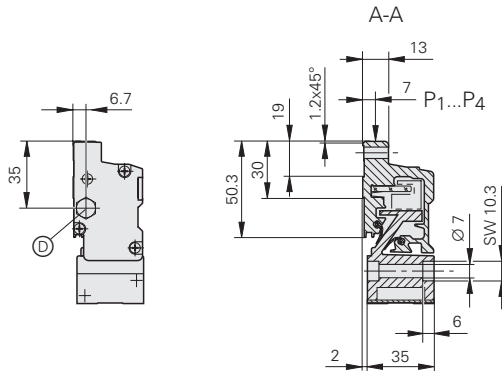
F = Maschinenführung
Machine guideway
guidage de la machine
guida della macchina
guía de la máquina

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

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

P = Messpunkte zum Ausrichten
Gauging points for alignment
points de mesure pour dé gauchissage
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

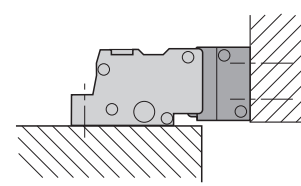
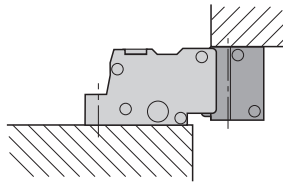
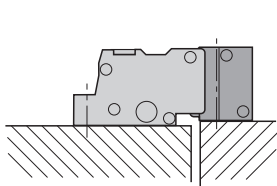
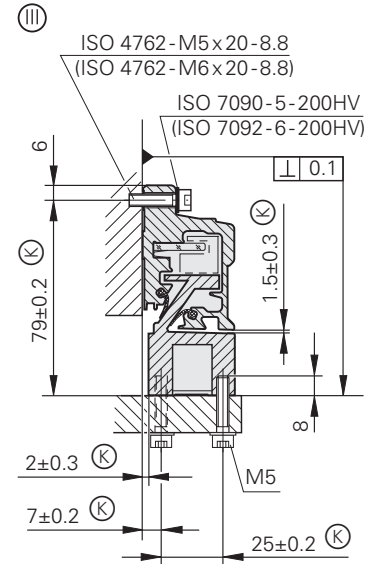
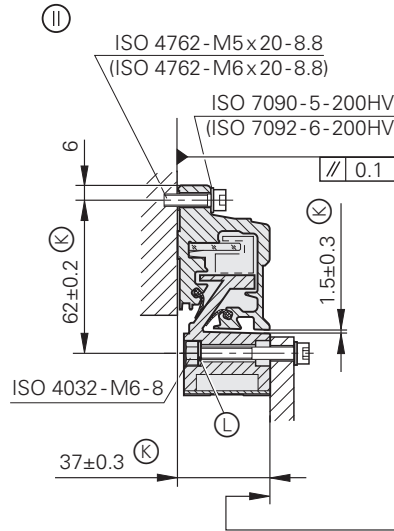
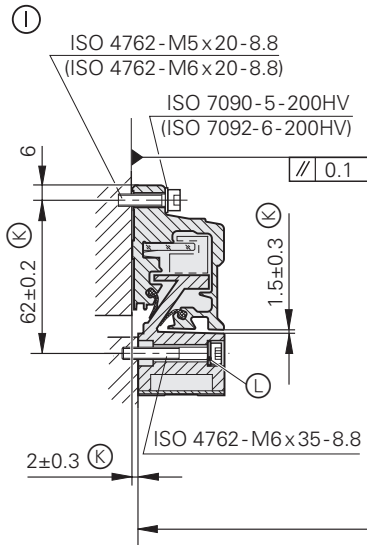


Anbaumaße · Mounting Dimensions · Cote d'encombrement · Dimensioni di montaggio · Medidas para el montaje

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

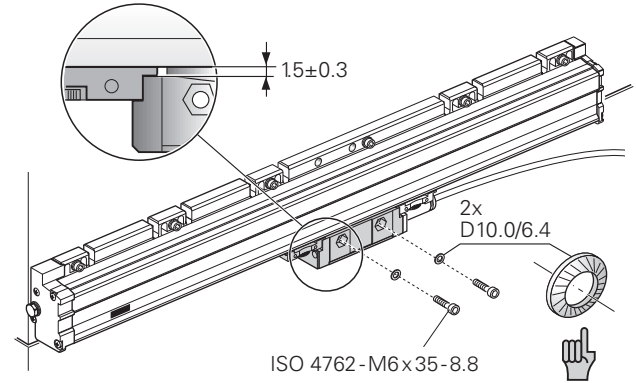
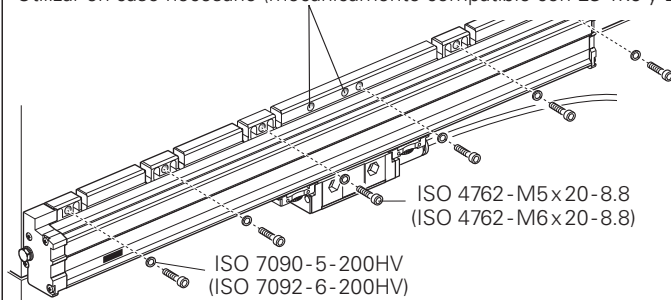
Ⓚ = Kundenseitige Anschlussmaße
 Required mating dimensions
 Conditions requises pour le montage
 Dimensioni di collegamento lato cliente
 Cotas de montaje requeridas

Ⓛ = Rippenscheibe D10.0/6.4 (Zubehör)
 Ribbed look 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)

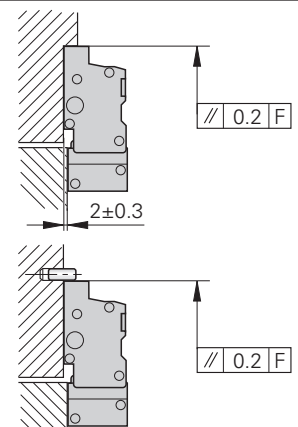
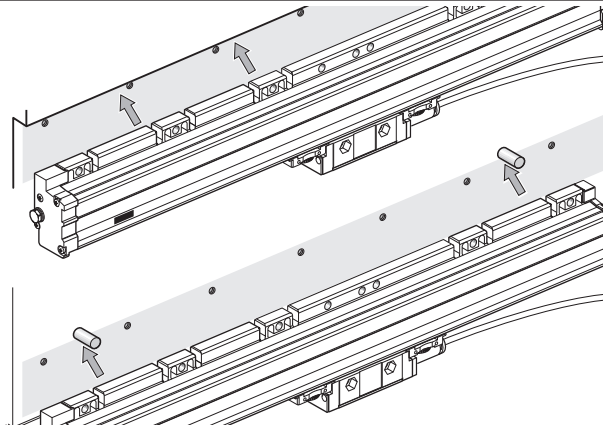


Anbau des Maßstabs · *Mounting the scale* · Montage de la règle de mesure · *Montaggio della riga* · Montaje de la regla

bei Bedarf verwenden (Anbaukompatibel zu LS 1x6 und LC 1x1).
Use if necessary (mechanically compatible to LS 1x6 and LC 1x1).
 Utiliser en cas de besoin (montage compatible LS 1x6 et LC 1x1).
Utilizzare secondo necessità (montaggio compatibile con LS 1x6 e LC 1x1).
 Utilizar en caso necesario (mecánicamente compatible con LS 1x6 y LC 1x1).

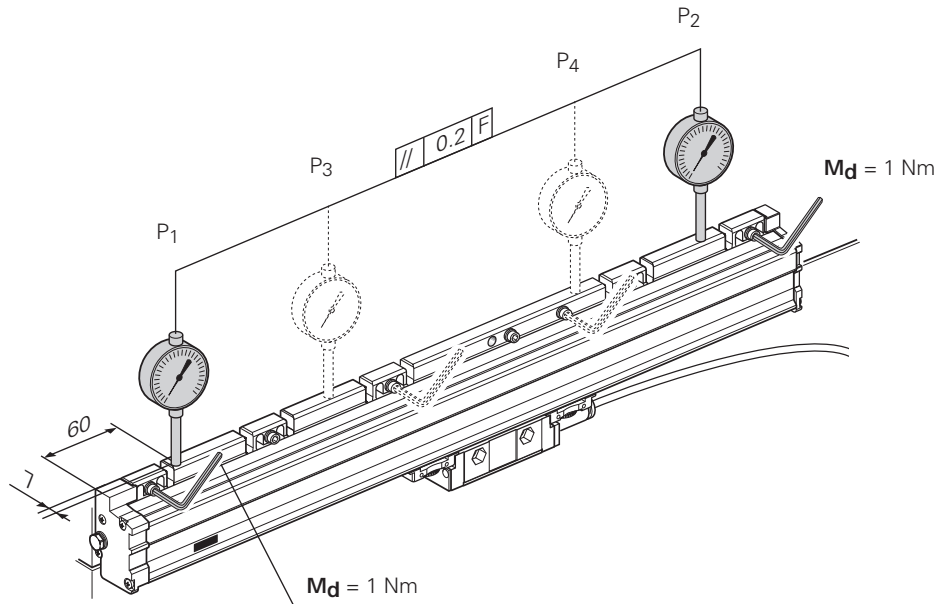



zusätzliche Anbaumöglichkeiten
Additional mounting options
 Possibilités de montage supplémentaires
Altre possibilità di montaggio
 Posibilidades de montaje adicionales



Ausrichten · Alignment · Alignement · Allineamento · Alinear

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



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

Befestigungsreihenfolge beachten
Mittlere Befestigung zwingend notwendig („Thermischer Fixpunkt“)

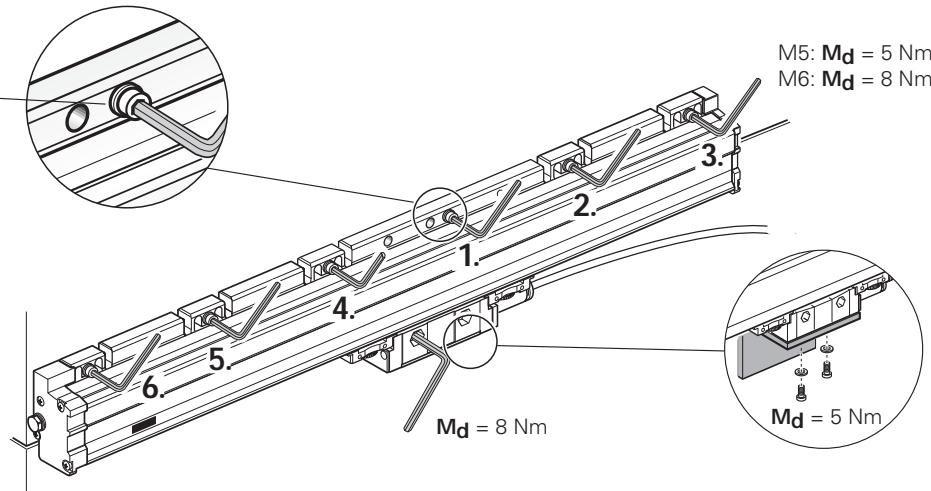
*Use the correct sequence when fastening
Mid-point must be fastened (“thermal fixpoint”)*

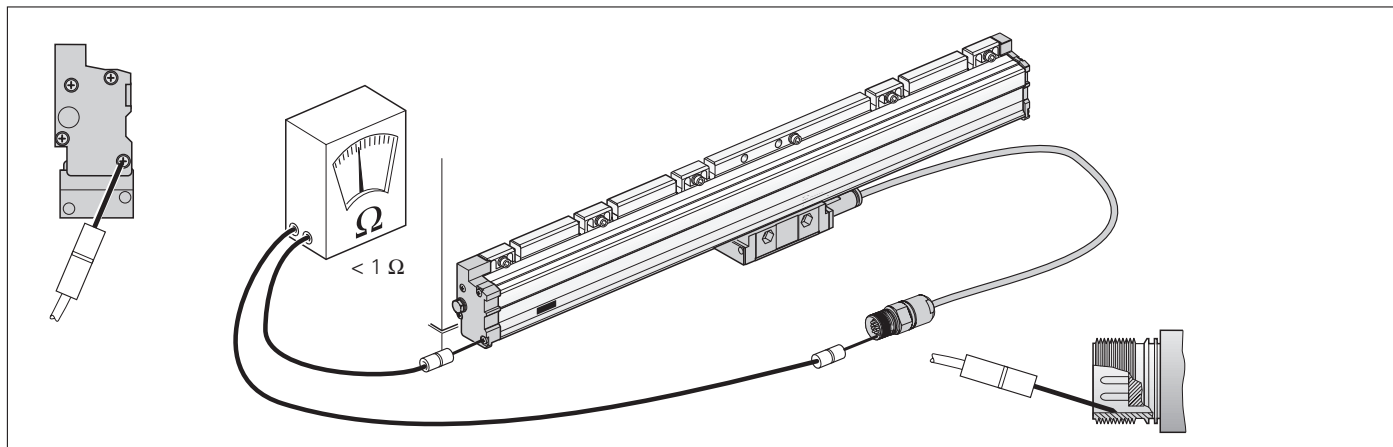
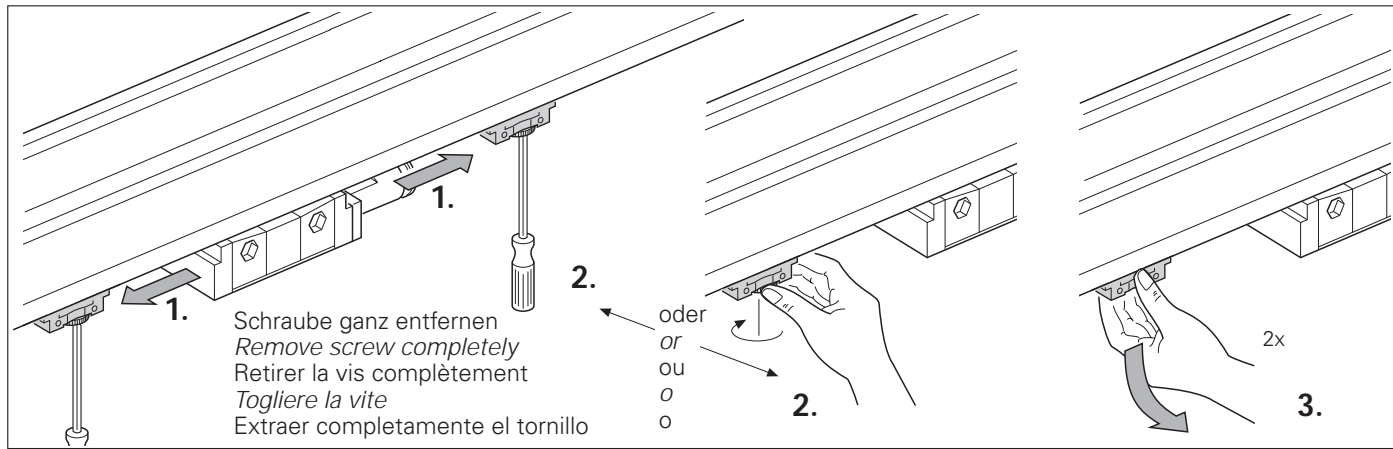
Respecter l'ordre chronologique de la fixation
Fixation centrale impérative („point fixe thermique“)

*Attenzione alla sequenza per il fissaggio
Il punto di fissaggio centrale è obbligatorio („punto di fissaggio termico“)*

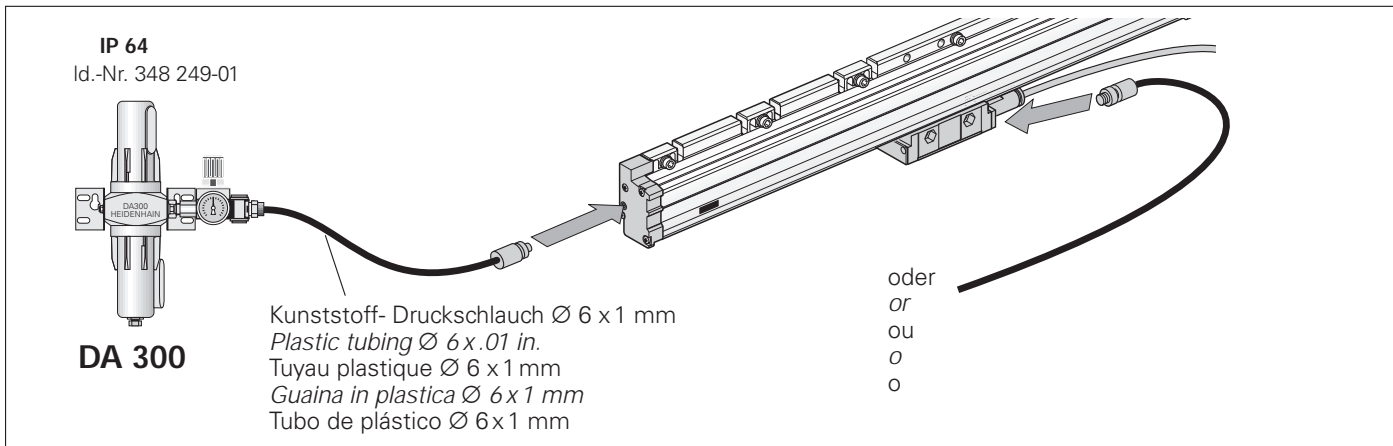
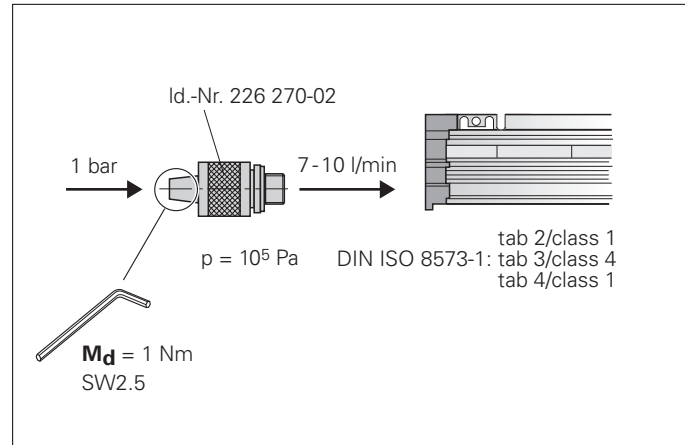
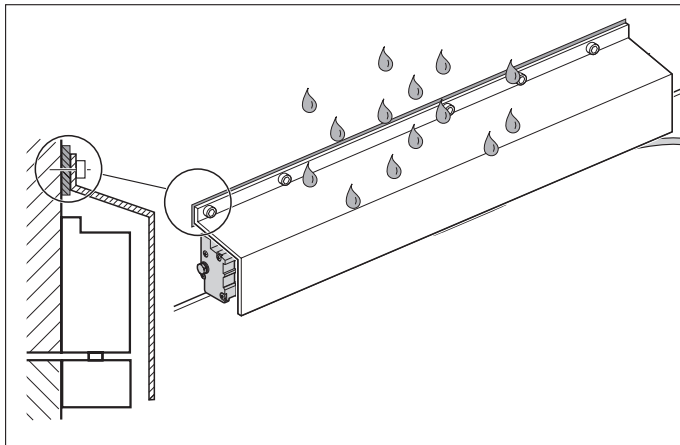
Tener en cuenta la secuencia de sujeción
Sujeción central necesariamente obligatoria („Punto de fijación térmico“)

„Thermischer-Fixpunkt“
„Thermal fixpoint“
„Point fixe thermique“
„Punto di fissaggio termico“
„Punto de fijación térmico“

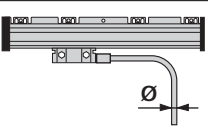
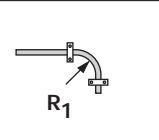
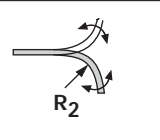



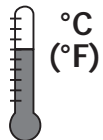
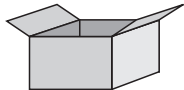


Schutzmaßnahmen · Protective Measures · Mesures préventives · Precauzioni · Medidas de protección

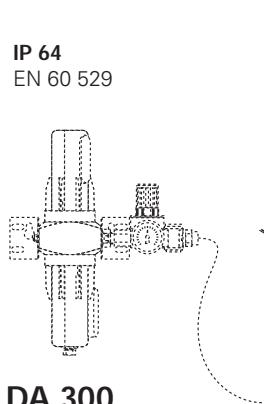


Technische Kennwerte · Specifications · Caractéristiques techniques · Dati tecnici · Datos técnicos

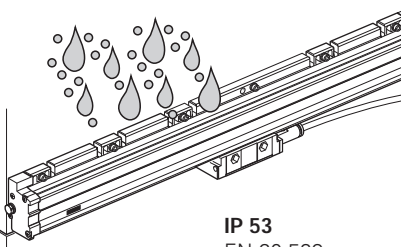
		
Ø 6 mm	$R_1 \geq 20 \text{ mm}$	$R_2 \geq 75 \text{ mm}$
Ø 10 mm	$R_1 \geq 35 \text{ mm}$	$R_2 \geq 75 \text{ mm}$
 Ø 8 mm	$R_1 \geq 40 \text{ mm}$	$R_2 \geq 100 \text{ mm}$

	 <p>-20 ... 70 °C (- 4 ... 158 °F)</p> <p>ML > 3040 mm: -10 ... 50 °C (- 14 ... 122 °F)</p>
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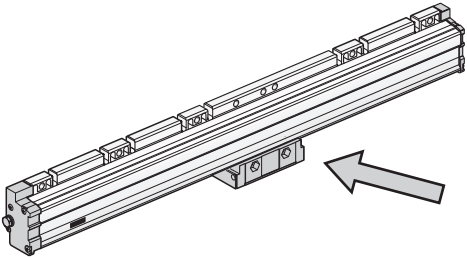
IP 64
EN 60 529







IP 53
EN 60 529

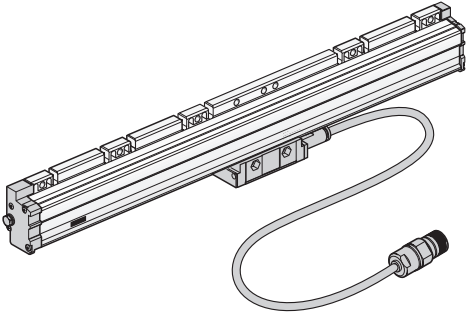



DA 300



 RS-485
 Request Frame
 Request Frame

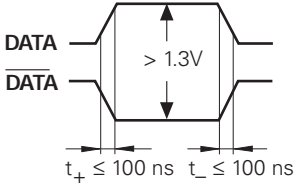
$$U_p = 5V \pm 5\%$$
 (max. 300 mA)
 EN 50 178/4.98; 5.2.9.5
 IEC 364-4-41: 1992; 411(PELV/SELV)
 (siehe, see, voir, vedi, véase
 HEIDENHAIN D 231 929)



 RS-485

$$t_+ \leq 100 \text{ ns}$$

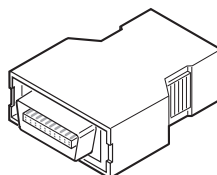
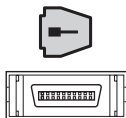
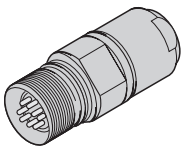
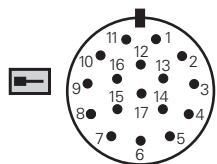
$$t_- \leq 100 \text{ ns}$$



RS-485
 DATA
 DATA

$$> 1.3V$$

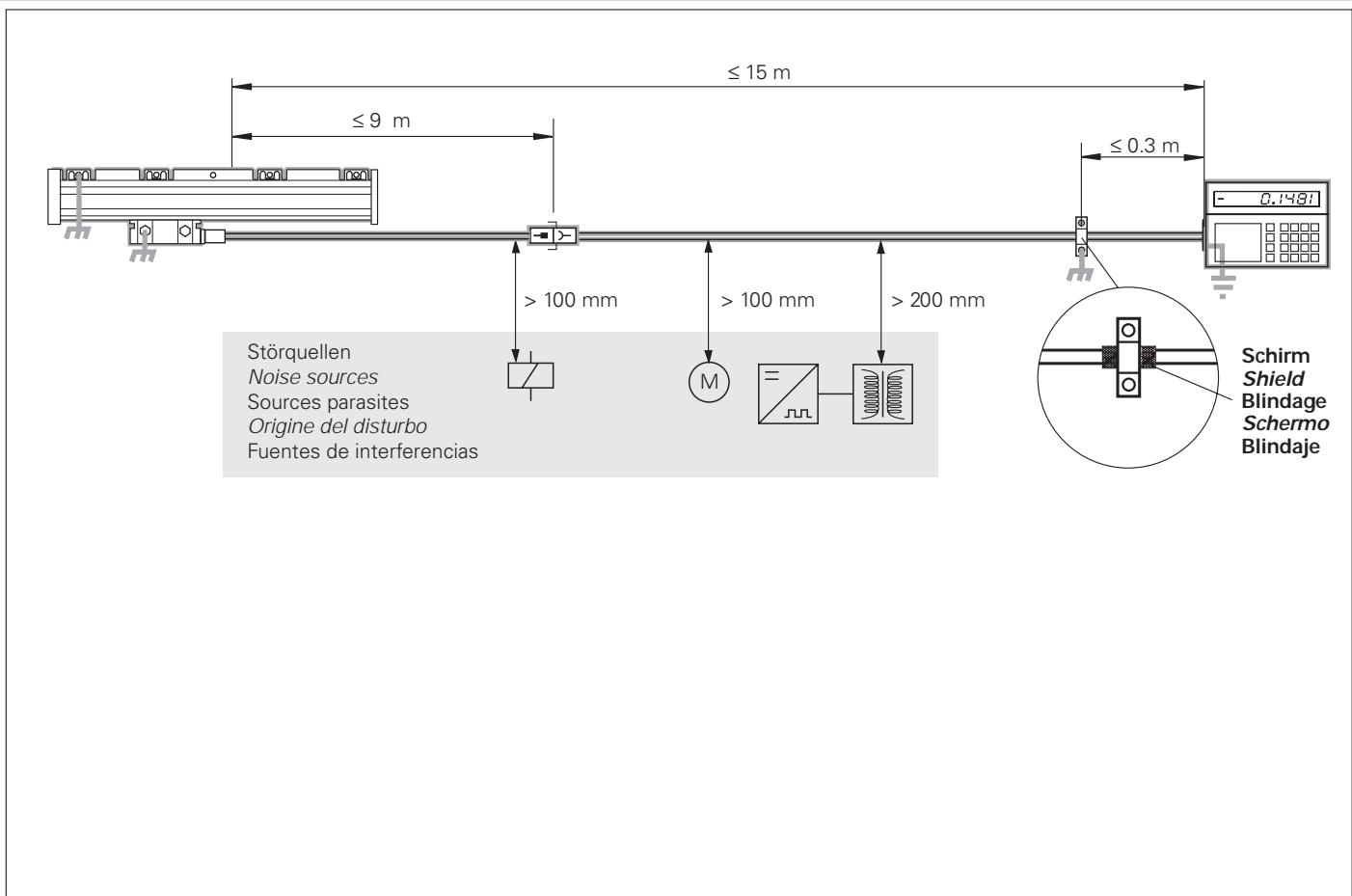
Elektrischer Anschluss · *Electrical connection* · Raccordement électrique · *Collegamento elettrico* · Conexión eléctrica



Außenschirm Gehäuse
External shield on housing
 Blindage externe sur le boîtier
Schermo esterno sulla carcassa
 Blindaje externo a carcasa

	14	17	8	9	7 ● — ● 1	10 ● — ● 4		
	6	16	7	17	20	19	1	11
	DATA	DATA	Request Frame	Request Frame	5 V Up	5 V sensor	0 V U_N	0 V sensor
	grau <i>gray</i> gris <i>grigio</i> gris	rosa <i>pink</i> rose <i>rosa</i> rosa	violett <i>violet</i> violet <i>viola</i> violeta	gelb <i>yellow</i> jaune <i>giallo</i> amarillo	braun/grün <i>brown/green</i> brun/vert <i>marrone/verde</i> marron/verde	blau <i>blue</i> bleu <i>azzurro</i> azul	weiß/grün <i>white/green</i> blanc/vert <i>bianco/verde</i> blanco/verde	weiß <i>white</i> blanc <i>bianco</i> blanco

Die Sensorleitung ist intern mit der Versorgungsleitung verbunden.
The sensor line is connected internally with the power supply.
 La ligne de palpeur est reliée de manière interne à la ligne d'alimentation.
La linea del sensore è collegata internamente con la linea di alimentazione.
 La línea de sensor está unida internamente con la línea de alimentación.



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NC programming ☎ +49 (8669) 31-31 03

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PLC programming ☎ +49 (8669) 31-31 02

e-mail: service.plc@heidenhain.de

Lathe controls ☎ +49 (7 11) 95 28 03-0

e-mail: service.hsf@heidenhain.de

www.heidenhain.de