HEIDENHAIN

Betriebsanleitung
Operating Instructions
Mode d´emploi
Manuale operativo
Modo de empleo

IBV 6072
IBV 6172
IBV 6272
EXE 6072

12/2014

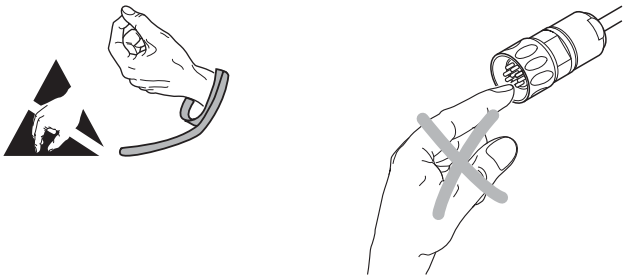
Achtung: Die Montage und Inbetriebnahme ist von einer qualifizierten Fachkraft unter Beachtung der örtlichen Sicherheitsvorschriften vorzunehmen.
Die Steckverbindung darf nur spannungsfrei verbunden oder gelöst werden.

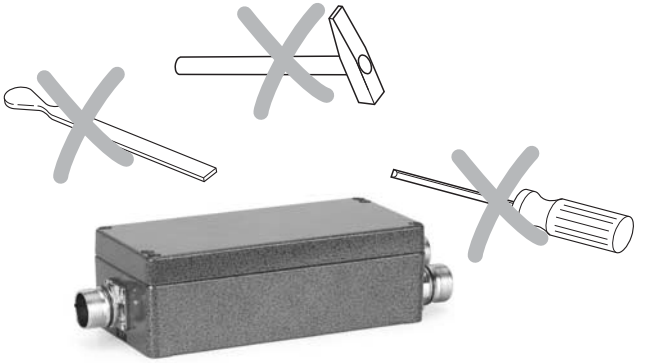
Note: *Mounting and commissioning is to be conducted by a qualified specialist under compliance with local safety regulations.*
Do not engage or disengage any connections while under power.

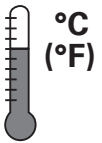
Attention: Le montage et la mise en service doivent être assurés par un personnel qualifié dans le respect des consignes de sécurité locales.
Le connecteur ne doit être connecté ou déconnecté qu'hors potentiel.

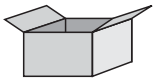
Attenzione: *Il montaggio e la messa in funzione devono essere eseguite da personale qualifucato nel rispetto delle norme di sicurezza locali.*
I cavi posso essere collegati o scollegati solo in assenza di tensione.

Atención: El montaje y la puesta en marcha deben ser realizados por un especialista cualificado, observando las prescripciones locales de seguridad.
Conectar o desconectar el conector sólo en ausencia de tensión.





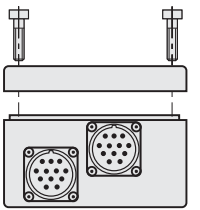




–30 ... 80 °C
(–22 ... 176 °F)

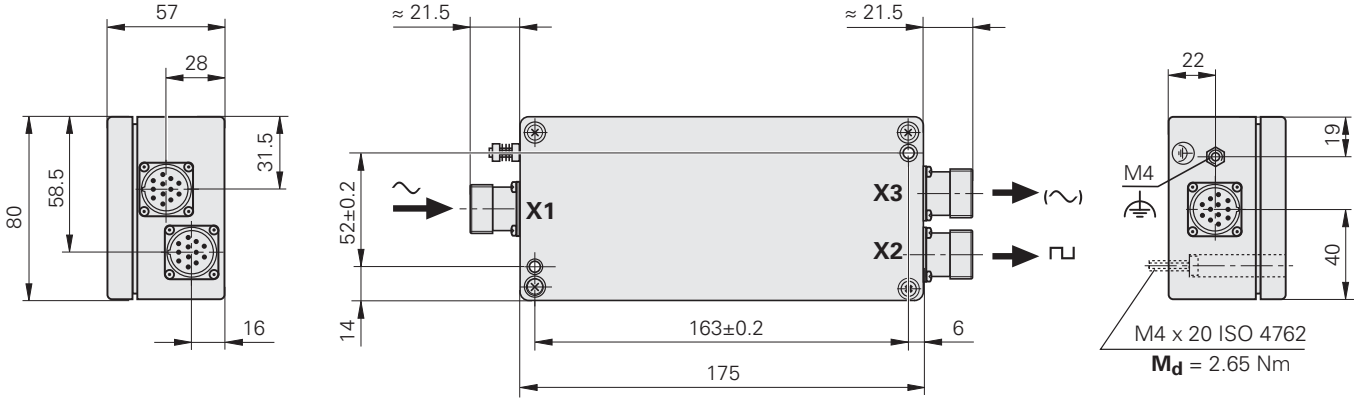
Lagertemperatur
Storage temperature
Température de stockage
Temperatura di immagazzinaggio
Temperatura en almacén

IP 65
EN 60 529



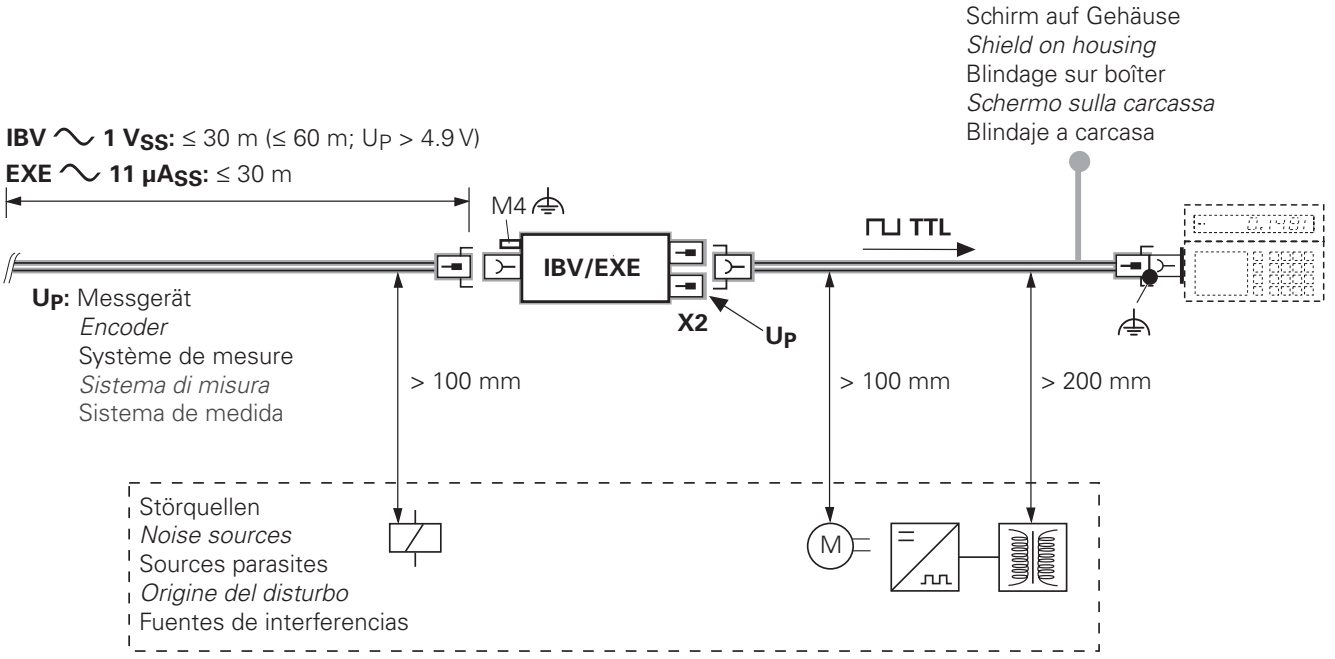
mm

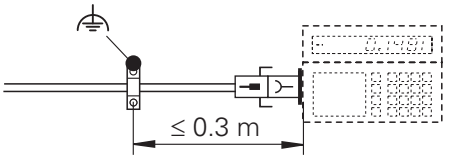
Tolerancing ISO 8015
ISO 2768 - m H
< 6 mm: ±0.2 mm



U_P = Spannungsversorgung
Power supply
Tension d'alimentation
Alimentazione tensione
Tensión de alimentación

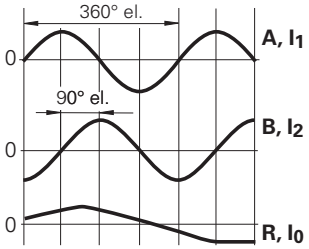
U_P = 5 V ± 5 %
IBV 6072: (max. 60 mA)
IBV 6172: (max. 90 mA)
IBV 6272: (max. 130 mA)
EXE 6072: (max. 60 mA)





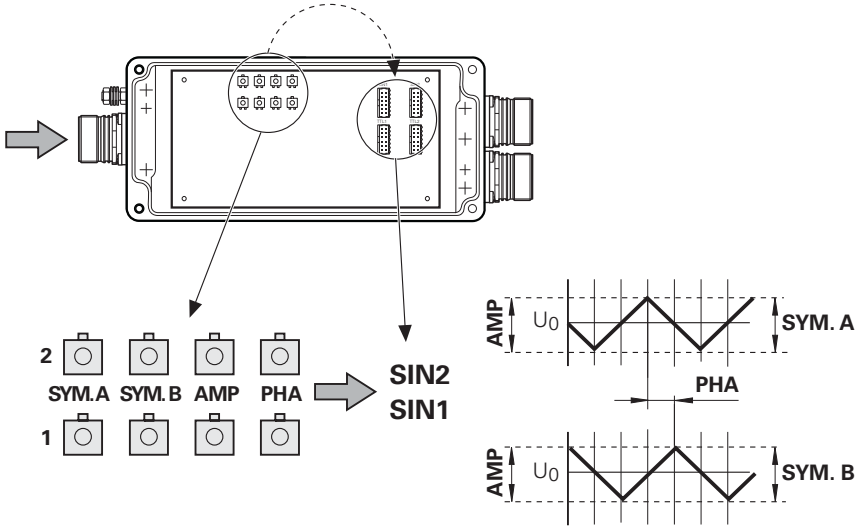
Ersatzweise mit Schirmschelle
Shield clamp as substitute
Collier de blindage en alternative
Schermatura alternativa con clip
Modo de sustitución con abrazadera apantallada

Eingangssignale
Input signals
Signaux en entrée
Segnali in ingresso
Señales de entrada



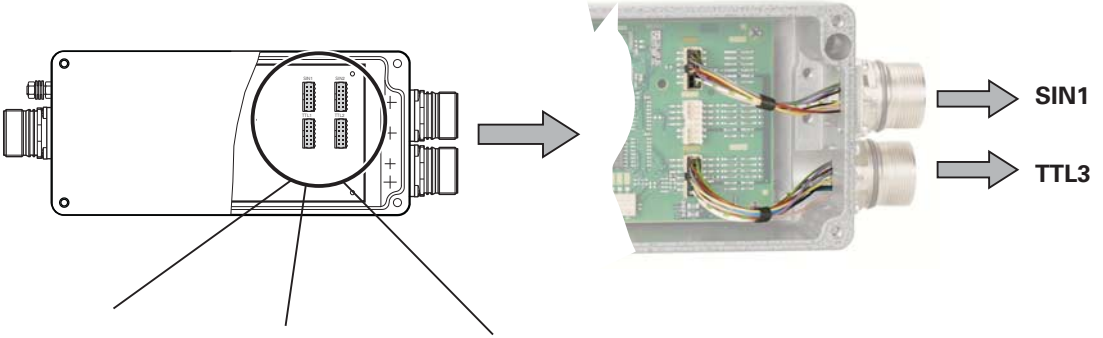
IBV
A: 0.6 ... 1.2 V_{SS}
B: 0.6 ... 1.2 V_{SS}
R: 0.2 ... 0.85 V

EXE
I_1: 7 ... 16 μA_{SS}
I_2: 7 ... 16 μA_{SS}
I_0: 2 ... 8.5 µA

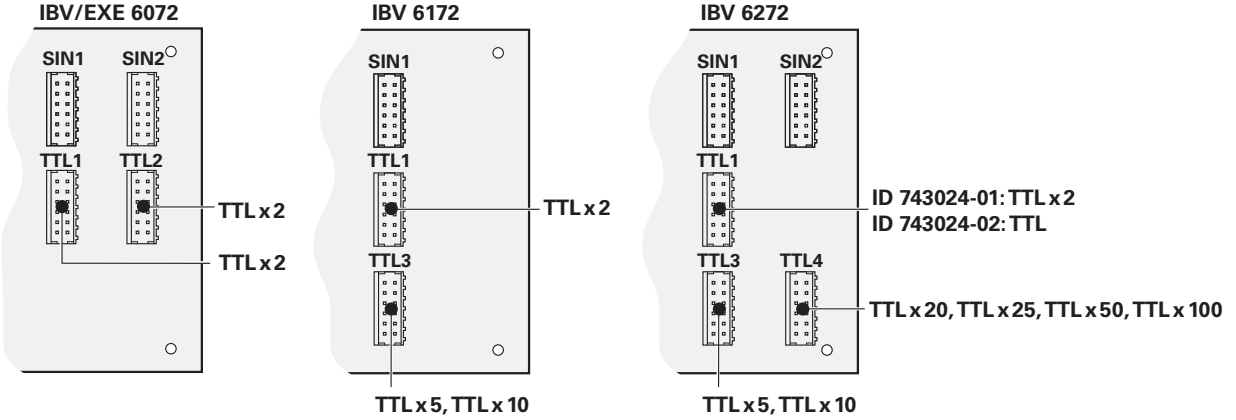


Ausgangssignale
Output signals
Signaux de sortie
Segnali in uscita
Señales de salida

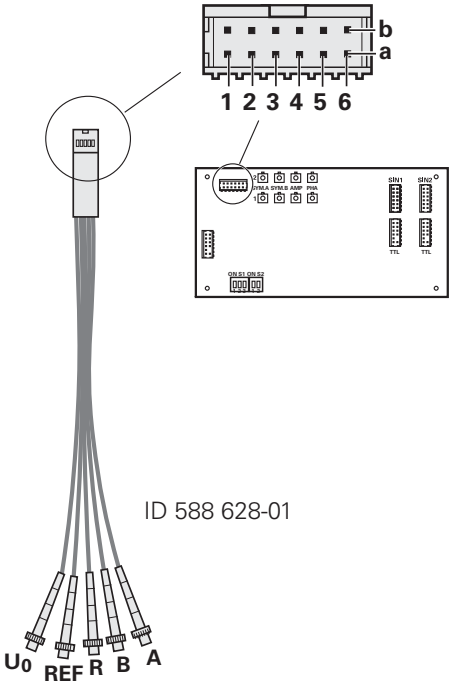
Beispiel, *Example*, Exemple, *Esempio*, Ejemplo:

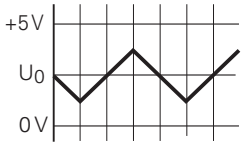
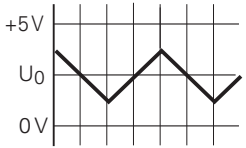
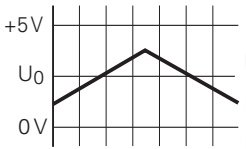
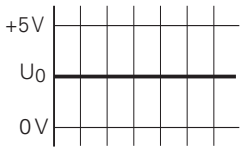
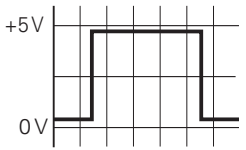


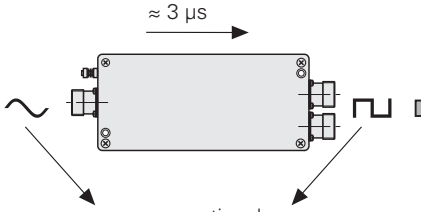
SIN1, SIN2
IBV 6x72: typ. 1V/V
EXE 6072: typ. 91mV/µA



Eingangssignale prüfen
Check the input signals
Vérifier les signaux d'entrée
Verificare impulsi in ingresso
Comprobar las señales de entrada



4a		**A (0° el.)**	IBV/EXE 6x72: 1.6 V_{SS} ... 4 V_{SS} IBV/EXE 6x72: 1.6 V_{PP} ... 4 V_{PP} IBV/EXE 6x72: 1.6 V_{CC} ... 4 V_{CC}
5a		**B (90° el.)**	IBV/EXE 6x72: 1.6 V_{SS} ... 4 V_{SS} IBV/EXE 6x72: 1.6 V_{PP} ... 4 V_{PP} IBV/EXE 6x72: 1.6 V_{CC} ... 4 V_{CC}
6a		**R (REF)** Nutzanteil *Usable component* Partie utile *Componente utilizzabile* Parte utilizable	IBV/EXE 6x72: 0.5 V_{SS} ... 2.8 V_{SS} IBV/EXE 6x72: 0.5 V_{PP} ... 2.8 V_{PP} IBV/EXE 6x72: 0.5 V_{CC} ... 2.8 V_{CC}
2b		**U_0**	IBV/EXE 6x72: ≈ 2.5 V ($\frac{U_P}{2}$)
3a		**REF**	Referenzimpuls getriggert *Reference pulse triggered* Impulsion de référence déclenchée *Impulso di riferimento triggerato* Impulso de referencia disparado
3b		**0 V**	

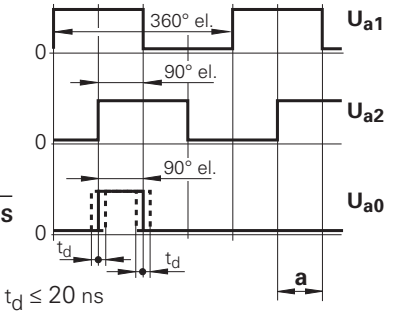


wegproportional
Distance-proportional signals
Proportionnel à la course
Convertitore
Período proporcional

TTL

U_{a1}, U_{a2}, U_{a0}

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



$t_d \leq 20$ ns

$U_H \geq 2.5$ V ($-I_H \leq 20$ mA)
$U_L \leq 0.5$ V ($I_L \leq 20$ mA)

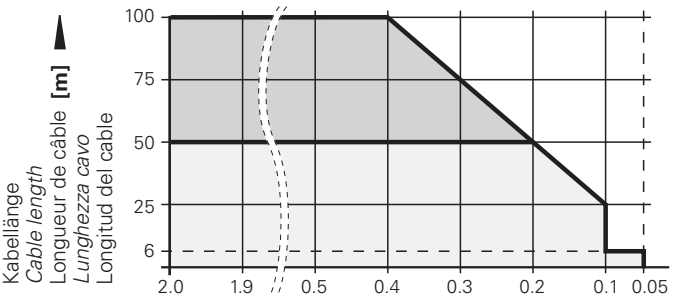
$\overline{U_{aS}}$: Störungssignal
Fault detection signal
Signal de perturbation
Segnale di malfunzionamento
Señal de avería

$\overline{U_{aS}}$ = High: ✓

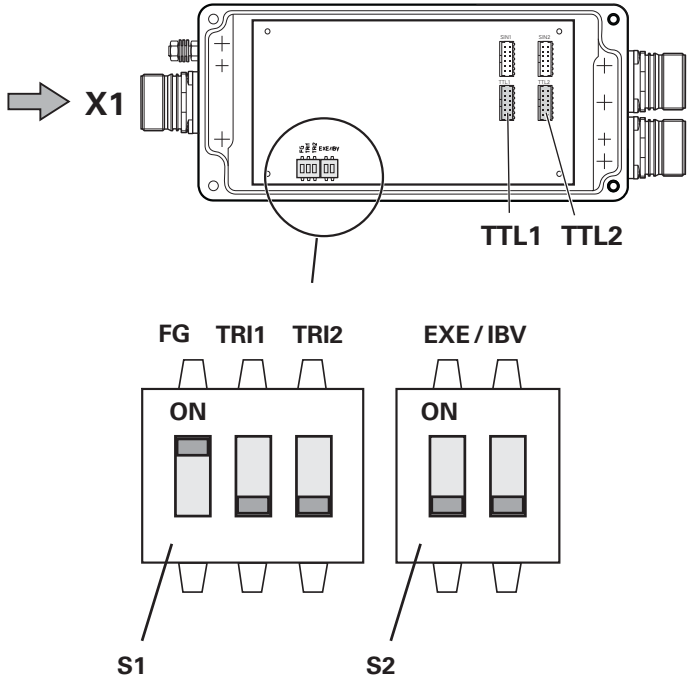
$\overline{U_{aS}}$ = Low: ⚠

ohne $\overline{U_{aS}}$
***Without* $\overline{U_{aS}}$**
sans $\overline{U_{aS}}$
***senza* $\overline{U_{aS}}$**
sin $\overline{U_{aS}}$

mit $\overline{U_{aS}}$
***With* $\overline{U_{aS}}$**
avec $\overline{U_{aS}}$
***con* $\overline{U_{aS}}$**
con $\overline{U_{aS}}$



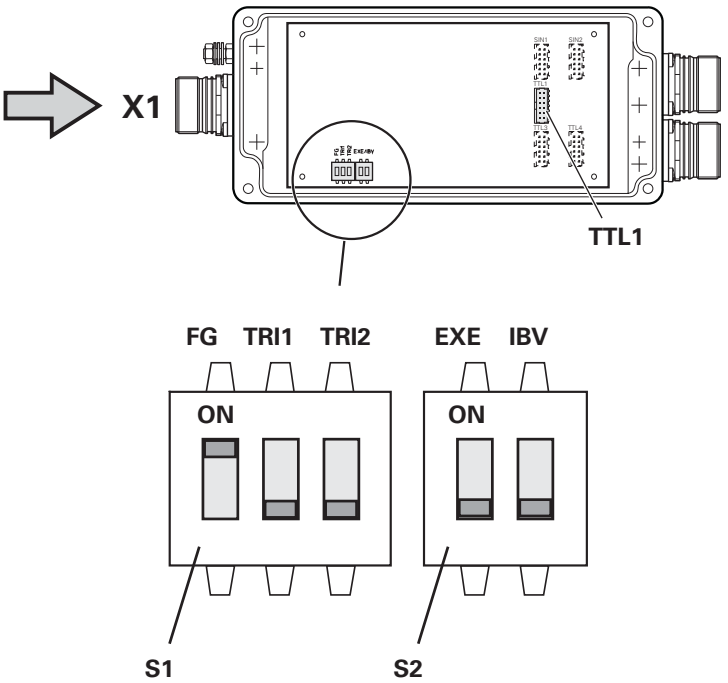
IBV 6072
EXE 6072



S1	**FG** Eingangs-Frequenz *Input frequency* Fréquence d'entrée *Frequenza ingresso* Frecuencia de entrada	**TRI1 ➤ TTL1** **U_{a1}, $\overline{U_{a1}}$, U_{a2}, $\overline{U_{a2}}$, ➤ $\overline{U_{aS}}$ = low**	**TRI2 ➤ TTL2** **U_{a1}, $\overline{U_{a1}}$, U_{a2}, $\overline{U_{a2}}$, ➤ $\overline{U_{aS}}$ = low**
on	50 kHz (EXE 6072)	hochohmig *High impedance* à haute impédance *alta impendenza* alta impedancia	hochohmig *High impedance* à haute impédance *alta impendenza* alta impedancia
off	500 kHz (IBV 6072)	nicht hochohmig *Low impedance* à basse impédance *bassa impendenza* sin alta impedancia	nicht hochohmig *Low impedance* à basse impédance *bassa impendenza* sin alta impedancia

	S2
EXE	**on** (2x) 
IBV	**off** (2x) 

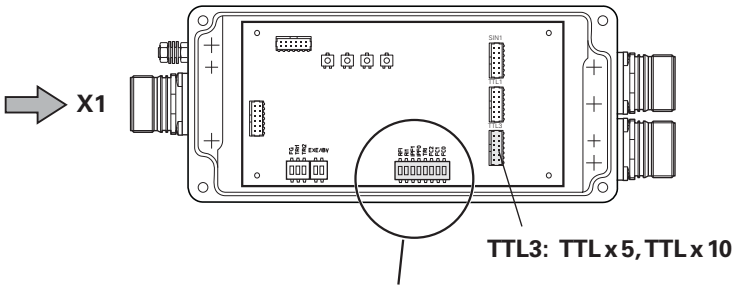
IBV 6172
IBV 6272

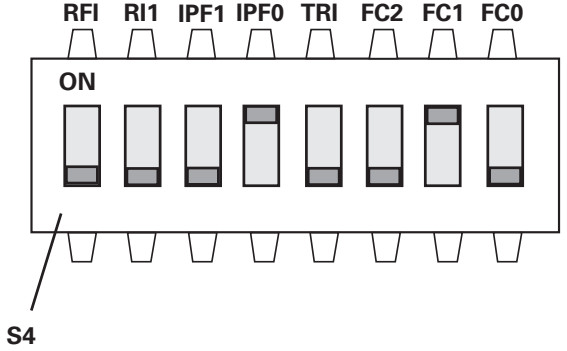


S1	**FG** Eingangs-Frequenz *Input frequency* Fréquence d'entrée *Frequenza ingresso* Frecuencia de entrada	**TRI1 ➤ TTL1** **U_{a1}, $\overline{U_{a1}}$, U_{a2}, $\overline{U_{a2}}$, ➤ $\overline{U_{aS}}$ = low**	**TRI2**
on	/	hochohmig *High impedance* à haute impédance *alta impendenza* alta impedancia	/
off	500 kHz	nicht hochohmig *Low impedance* à basse impédance *bassa impendenza* sin alta impedancia	/

S2
off (2x) 

IBV 6172





RFI = reserviert (immer auf off)
Reserved (always set to off)
Réservé (toujours sur off)
Riservato (sempre su off)
Reservado (siempre en off)

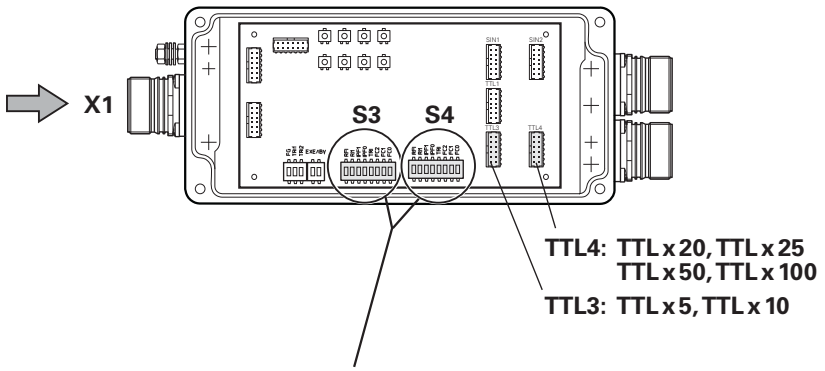
Referenzimpuls-Breite *Reference pulse width* Largeur impulsion de référence *Ampiezza impulso di riferimento* Ancho del impulso de referencia	**RI1**
270°	on
90°	off

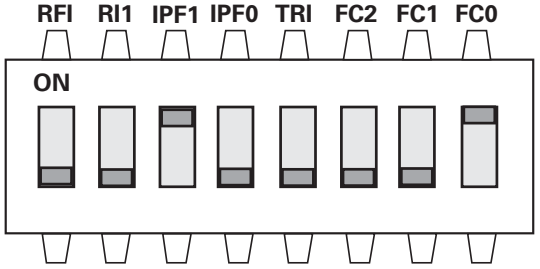
Interpolation *Interpolation* Interpolation *Interpolazione* Interpolación	**IPF1**	**IPF0**
TTL x 5	off	off
TTL x 10	off	on

U_{a1}, $\overline{U_{a1}}$, U_{a2}, $\overline{U_{a2}}$, ➤ $\overline{U_{aS}}$ = low	TRI
hochohmig (Three State) *High impedance (three-state)* à haute impédance (tristate) *alta impendenza (tristate)* alta impedancia (Three State)	on
nicht hochohmig *Low impedance* à basse impédance *bassa impendenza* sin alta impedancia	off

min. Flankenabstand *Min. edge separation* écart min. entre les fronts *min. distanza tra i fronti* distancia mín. entre flancos				max. Eingangs-Frequenz, Toleranz ±5 % *Max. input frequency, tolerance ±5%* fréquence d'entrée max., tolérance ±5 % *max frequenza ingresso, Tolleranza ±5 %* frecuencia máx. de entrada, tolerancia ±5 %	
	FC2	**FC1**	**FC0**	**TTL x 5**	**TTL x 10**
0.100 µs	off	off	on	200 kHz	200 kHz
0.220 µs	off	on	off	200 kHz	100 kHz
0.345 µs	off	on	on	133 kHz	66 kHz
0.465 µs	on	off	off	100 kHz	50 kHz
0.585 µs	on	off	on	80 kHz	40 kHz
0.950 µs	on	on	off	50 kHz	25 kHz
1.925 µs	on	on	on	25 kHz	12.5 kHz

IBV 6272





S3, S4	**RFI** = reserviert (immer auf off) *Reserved (always set to off)* Réservé (toujours sur off) *Riservato (sempre su off)* Reservado (siempre en off)

S3, S4	Referenzimpuls-Breite *Reference pulse width* Largeur impulsion de référence *Ampiezza impulso di riferimento* Ancho del impulso de referencia	**RI1**
	270°	on
	90°	off

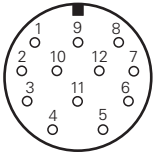
Interpolation *Interpolation* Interpolation *Interpolazione* Interpolación	**S3**		**S4**	
	IPF1	**IPF0**	**IPF1**	**IPF0**
TTL x 5	/	/	off	off
TTL x 10	/	/	off	on
TTL x 20	off	off	/	/
TTL x 25	off	on	/	/
TTL x 50	on	off	/	/
TTL x 100	on	on	/	/

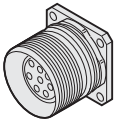
S3, S4	U_{a1}, $\overline{U_{a1}}$, U_{a2}, $\overline{U_{a2}}$, ➤ $\overline{U_{aS}}$ = low	TRI
	hochohmig (Three State) *High impedance (three-state)* à haute impédance (tristate) *alta impendenza (tristate)* alta impedancia (Three State)	on
	nicht hochohmig *Low impedance* à basse impédance *bassa impendenza* sin alta impedancia	off

min. Flankenabstand *Min. edge separation* écart min. entre les fronts *min. distanza tra i fronti* distancia mín. entre flancos				max. Eingangs-Frequenz, Toleranz ±5 % *Max. input frequency, tolerance ±5%* fréquence d'entrée max., tolérance ±5 % *max frequenza ingresso, Tolleranza ±5 %* frecuencia máx. de entrada, tolerancia ±5 %					
				S4		S3			
	FC2	FC1	FC0	TTL x 5	TTL x 10	TTL x 20	TTL x 25	TTL x 50	TTL x 100
0.100 µs	off	off	on	200 kHz	200 kHz	100 kHz	80 kHz	40 kHz	20 kHz
0.220 µs	off	on	off	200 kHz	100 kHz	50 kHz	40 kHz	20 kHz	10 kHz
0.345 µs	off	on	on	133 kHz	66 kHz	33 kHz	26 kHz	13 kHz	6.6 kHz
0.465 µs	on	off	off	100 kHz	50 kHz	25 kHz	20 kHz	10 kHz	5 kHz
0.585 µs	on	off	on	80 kHz	40 kHz	20 kHz	16 kHz	8 kHz	4 kHz
0.950 µs	on	on	off	50 kHz	25 kHz	12.5 kHz	10 kHz	5 kHz	2.5 kHz
1.925 µs	on	on	on	25 kHz	12.5 kHz	6.25 kHz	5 kHz	2.5 kHz	1.25 kHz

IBV 6x72

Eingangssignale 1 V_{SS}
Input signals 1 V_{PP}
Signaux d'entrée 1 V_{CC}
Segnali in ingresso 1 V_{PP}
Señales de entrada 1 V_{PP}

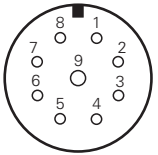


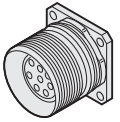


12	2	10	11	5	6	8	1	3	4	7	9
5 V U_P	**Sensor** U_P	**0 V**	**Sensor** 0 V	**A+**	**A–**	**B+**	**B–**	**R+**	**R–**	**/**	**/**
BNGN	BU	WHGN	WH	BN	GN	GY	PK	RD	BK	VT	/

EXE 6x72

Eingangssignale 11 μA_{SS}
Input signals 11 μA_{PP}
Signaux d'entrée 11 μA_{CC}
Segnali in ingresso 11 μA_{PP}
Señales de entrada 11μA_{PP}





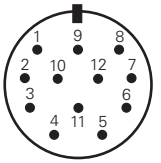
1) Außenschirm auf Gehäuse
External shield on housing
Blindage externe sur boîtier
Schermo esterno sulla carcassa
Blindaje externo a carcasa

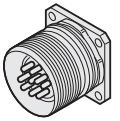
2) Innenschirm
Internal shield
Blindage interne
Schermo interno
Blindaje interno

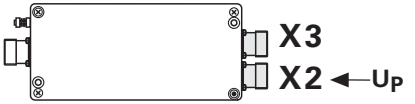
3	4		9	1	2	5	6	7	8
5 V U_P	**0 V**	**1)**	**2)**	**I_1+**	**I_1–**	**I_2+**	**I_2–**	**I_0+**	**I_0–**
BN	WH	/	WHBN	GN	YE	BU	RD	GY	PK

IBV/EXE 6x72

Ausgangssignale TTL (1 V_{SS})
Output signals TTL (1 V_{PP})
Signaux de sortie TTL (1 V_{CC})
Segnali in uscita TTL (1 V_{PP})
Señales de salida TTL (1 V_{PP})







X2

	12	2	10	11	5	6	8	1	3	4	7	9
TTL	**5 V** **U_P**	**Sensor** U_P	**0 V**	**Sensor** 0 V	**U_{a1}**	**$\overline{U_{a1}}$**	**U_{a2}**	**$\overline{U_{a2}}$**	**U_{a0}**	**$\overline{U_{a0}}$**	**$\overline{U_{aS}}$**	**/**
1 V_{SS} **1 V_{PP}** **1 V_{CC}**	**5 V** **U_P**	**Sensor** U_P	**0 V**	**Sensor** 0 V	**A+**	**A–**	**B+**	**B–**	**R+**	**R–**	**/**	**/**
	BNGN	BU	WHGN	WH	BN	GN	GY	PK	RD	BK	VT	/

X3

	12	2	10	11	5	6	8	1	3	4	7	9
TTL	**/**	**/**	**0 V**	**/**	**U_{a1}**	**$\overline{U_{a1}}$**	**U_{a2}**	**$\overline{U_{a2}}$**	**U_{a0}**	**$\overline{U_{a0}}$**	**$\overline{U_{aS}}$**	**/**
1 V_{SS} **1 V_{PP}** **1 V_{CC}**	**/**	**/**	**0 V**	**/**	**A+**	**A–**	**B+**	**B–**	**R+**	**R–**	**/**	**/**
	/	/	WHGN	/	BN	GN	GY	PK	RD	BK	VT	/

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