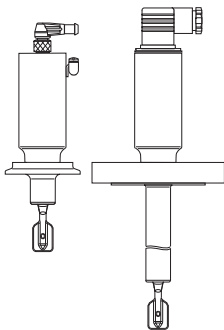


Operating Instructions

Liquiphant M FTL5x (H)-# ### ## # #3



- DE**- Grenzscharter mit Kompaktgehäuse
- EN**- Point Level Switch with compact housing
- FR**- Détecteur de niveau en boîtier compact
- ES**- Detector de nivel con cabezal compacto
- IT**- Interruttore di livello con testa compatta
- NL**- Niveauschakelaar met compacte behuizing

DE- Inhalt

Sicherheitshinweise	4
Geräte-Identifikation FTL50, FTL51	6
Geräte-Identifikation FTL50H, FTL51H	12
Behandlung	18
Verwendung	20
Messeinrichtung	21
Einbau	24
Anschluss	31
Test mit Prüfmagnet	48
Reinigung	50
Technische Daten	51
Zubehör, Ersatzteile	54
Fehlersuche	57
Ergänzende Dokumentation	63

en - Contents

Notes on Safety	4
Device Identification FTL50, FTL51	6
Device Identification FTL50H, FTL51H	12
Handling	18
Application	20
Measuring system	21
Mounting	24
Connection	31
Test with test magnet	48
Cleaning	50
Technical Data	51
Accessories, Spare parts	54
Trouble-shooting	58
Supplementary Documentation	63

FR - Sommaire

Conseils de sécurité	4
Dénomination FTL50, FTL51	6
Dénomination FTL50H, FTL51H	12
Manipulation	18
Utilisation	20
Ensemble de détection de niveau	21
Montage	24
Raccordement	31
Test avec aimant de contrôle	48
Nettoyage	50
Caractéristiques techniques	51
Accessoires, Pièces de rechange	54
Recherche de défauts	59
Documentation complémentaire	63



Achtung!

= verboten;
führt zu fehlerhaftem Betrieb
oder Zerstörung.



Caution!

= forbidden;
leads to incorrect operation
or destruction.



Attention!

= interdit; peut provoquer
des dysfonctionnements
ou la destruction.

ES - Índice

Notas sobre seguridad	5
Identificación del equipo FTL50, FTL51	6
Identificación del equipo FTL50H, FTL51H	12
Modo de empleo	18
Aplicación	20
Sistema de medida	21
Montaje	24
Conexiones	31
Test con imán de control	48
Limpieza	50
Datos técnicos	51
Accesorios, Repuestos	54
Identificación de fallos	60
Documentación adicional	63

IT - Índice

Note sulla sicurezza	5
Identificazione dello strumento FTL50, FTL51	6
Identificazione dello strumento FTL50H, FTL51H	12
Impiego	18
Applicazione	20
Sistema di misura	21
Montaggio	24
Collegamento	31
Test con magneti di prova	48
Pulizia	50
Dati tecnici	51
Accessori, Ricambi	54
Individuazione e eliminazione delle anomalie	61
Documentazione supplementare	63

NL- Inhoud

Veiligheidsinstructies	5
Instrument-identificatie FTL50, FTL51	6
Instrument-identificatie FTL50H, FTL51H	12
Behandeling	18
Toepassing	20
Meetopstelling	21
Inbouw	24
Aansluiting	31
Test met testmagneet	48
Reiniging	50
Technische gegevens	51
Toebehoren, Reserve-onderdelen	54
Foutzoeken	62
Aanvullende documentatie	63



Atención!

= Prohibido; peligro de mal funcionamiento o de destrucción.



Attenzione!

= Vietato; pericolo di malfunzionamento o di distruzione.



Opgelet!

= verboden; leidt tot foutieve werking of storing.

DE- Sicherheitshinweise

Der Liquiphant M FTL50, FTL51, FTL 50H, FTL51H mit Kompaktgehäuse darf nur als Füllstandgrenzschalter für Flüssigkeiten verwendet werden.

Bei unsachgemäßem Einsatz können Gefahren von ihm ausgehen.

Das Gerät darf **nur von qualifiziertem und autorisiertem Fachpersonal**

unter strenger Beachtung dieser Betriebsanleitung, der einschlägigen Normen, der gesetzlichen Vorschriften und der Zertifikate (je nach Anwendung) eingebaut, angeschlossen, in Betrieb genommen und gewartet werden.

In der Gebäudeinstallation ist ein Netzschalter für das Gerät leicht erreichbar in dessen Nähe zu installieren.

Er ist als Trennvorrichtung für das Gerät zu kennzeichnen.

EN- Notes on Safety

The Liquiphant M FTL50, FTL51, FTL50H, FTL51H with compact housing is designed for level limit detection in liquids.

If used incorrectly it is possible that application-related dangers may arise.

The device may be installed, connected, commissioned, operated and maintained **by qualified and authorised personnel only**, under strict observance of these operating instructions, any relevant standards, legal requirements, and, where appropriate, the certificates.

Install an easily accessible power switch in the proximity of the device.

Mark the power switch as a disconnecter for the device.

FR- Conseils de sécurité

Le Liquiphant M FTL50, FTL51, FTL50H, FTL51H en boîtier compact doit être exclusivement utilisé comme détecteur de niveau pour liquides.

Il peut être source de danger en cas d'utilisation non conforme aux prescriptions.

L'appareil ne doit être installé, raccordé, mis en service et entretenu **que par un personnel qualifié et autorisé**, qui tiendra compte des indications contenues dans les instructions de service présentes, des normes en vigueur et des certificats disponibles (selon l'application).

Installer un commutateur réseau à proximité immédiate de l'appareil, en veillant à ce qu'il soit facilement accessible.

Repérer ce commutateur comme sectionneur de l'appareil.

ES - Notas sobre seguridad

El detector de nivel Liquiphant M FTL50, FTL51, FTL50H, FTL51H con cabezal compacto sólo debe utilizarse para la detección de límite en fluidos.

Su empleo inapropiado puede resultar peligroso.

El equipo deberá ser montado, conectado, instalado y mantenido

única y exclusivamente por personal cualificado y autorizado,

bajo rigurosa observación de las presentes instrucciones de servicio, de las normativas y legislaciones vigentes, así como de los certificados (dependiendo de la aplicación). Instalar un interruptor de fácil acceso en las proximidades del equipo.

Este interruptor se utilizará para desconectar el equipo.

IT - Note sulla sicurezza

Il Liquiphant M FTL50, FTL51, FTL50H, FTL51H con testa compatta è particolarmente studiato per l'impiego come soglia di livello in liquidi.

Un'installazione non corretta può determinare pericolo.

Lo strumento può essere montato **solamente da personale qualificato ed autorizzato.**

Il montaggio, il collegamento, la messa in esercizio e la manutenzione devono rispettare le presenti istruzioni, le norme vigenti e i certificati (a seconda dell'applicazione). Installare un interruttore di alimentazione di facile accesso nelle vicinanze dello strumento.

Contrassegnare l'interruttore di alimentazione come interruttore di disattivazione dello strumento.

NL- Veiligheidsinstructies

Gebruik de Liquiphant M FTL50, FTL51, FTL50H, FTL51H met compacte behuizing alleen als niveauschakelaar voor vloeistoffen. Indien niet correct gebruikt kunnen gevaarlijke situaties ontstaan.

Het instrument **alleen door gekwalificeerd en geautoriseerd personeel** laten inbouwen, aansluiten, in bedrijf nemen en onderhouden. Neem de instructies in deze Inbedrijfstellingsvoorschriften, de desbetreffende normen, de wettelijke voorschriften en eventuele certificaten in acht. Installeer een makkelijk bereikbare voedingschakelaar in de nabijheid van het instrument. Kenmerk de voedingschakelaar specifiek voor het instrument.

DE- Geräte-Identifikation

FTL50, FTL51

EN- Device Identification

FTL50, FTL51

FR- Dénomination

FTL50, FTL51

ES - Identificación del equipo

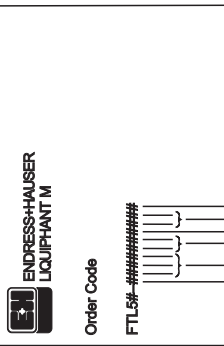
FTL50, FTL51

IT - Identificazione

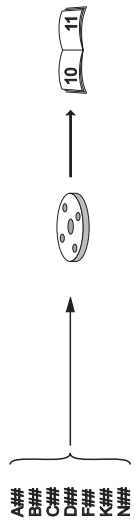
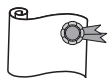
FTL50, FTL51

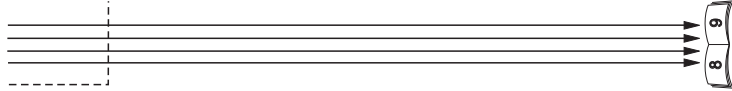
NL- Instrument-identificatie

FTL50, FTL51



A *1, WHG
 D ATEX II 3 G EEx nA II T6, WHG
 C ATEX II 3 D T85°C,*3
 F ATEX II 1/2 G EEx Ia IIC T6, WHG
 G ATEX II 1/2 D T80°C,*3
 H ATEX II 1/2 G EEx Ia IIC T6
 J ATEX II 1/2 D T80°C,*3
 M ATEX II 1 G EEx Ia IIC T6
 P NEPSI Ex Ia IIC T6
 R FM, IS, Cl. I, II, III, Div. 1, Gr. A-G
 S FM, NI, Cl. I, Div. 2, Gr. A-D
 U CSA, IS, Cl. I, II, III, Div. 1, Gr. A-G
 Y CSA, General purpose *2





GE2 R ¾, DIN 2999, 316L
 GE5 R ¾, DIN 2999, AlloyC4
 GF2 R 1, DIN 2999, 316L
 GF5 R 1, DIN 2999, AlloyC4
 GM2 NPT ¾, ANSI, 316L
 GM5 NPT ¾, ANSI, AlloyC4
 GN2 NPT 1, ANSI, 316L
 GN5 NPT 1, ANSI, AlloyC4
 GQ2 G ¾, ISO 228, 316L
 GQ5 G ¾, ISO 228, AlloyC4
 GR2 G 1, ISO 228, 316L
 GR5 G 1, ISO 228, AlloyC4



max. 100 bar, 150 °C



max. 100 bar, 150 °C



max. 40 bar, 100 °C
 max. 25 bar, 160 °C



max. 16 bar, 120 °C
 max. 2 bar, 150 °C

GW2 G 1, ISO 228, 316L

TC2 DN 25-38 (1...1½"), ISO 2852, 316L

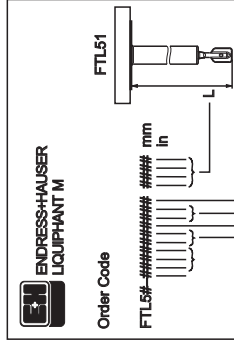
Tri-Clamp

TE2 DN 40-51 (2"), ISO 2852, 316L

Tri-Clamp

YY9 *2

- *1 ohne / without / sans / sin / senza / zonder
- *2 andere / others / autres / otros / altri / andere
- *3 nicht gültig für PBT / not valid for PBT / non valable pour PBT / no es válido para PBT / non valido per PBT / niet geldig voor PBT



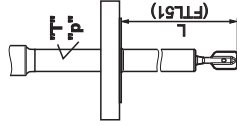
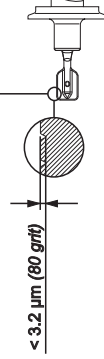
ENDRESS+HAUSER
LIQUIPHANT M

Order Code

FTL5#-##### mm
in

FTL51

AA	#2		Ra < 3.2 µm/80 grit (FTL50)
BB	..... mm, 316L,		Ra < 3.2 µm/80 grit
BE	..... mm, AlloyC4,		Ra < 3.2 µm/80 grit
CB	..... in, 316L,		Ra < 3.2 µm/80 grit
CE	..... in, AlloyC4,		Ra < 3.2 µm/80 grit
DB	"L II", 316L,		Ra < 3.2 µm/80 grit
DE	"L II", AlloyC4,		Ra < 3.2 µm/80 grit



IA	#2	+ "T" (FTL50)
JB	..... mm, 316L	+ "T"
JE	..... mm, AlloyC4	+ "T"
KB	..... in, 316L	+ "T"
KE	..... in, AlloyC4	+ "T"
LB	"L II", 316L	+ "T"
LE	"L II", AlloyC4	+ "T"
OA	#2	+ "p" (FTL50)
RB	..... mm, 316L	+ "p"
RE	..... mm, AlloyC4	+ "p"
SB	..... in, 316L	+ "p"
SE	..... in, AlloyC4	+ "p"
TB	"L II", 316L	+ "p"
TE	"L II", AlloyC4	+ "p"
YY	#2	

FEL51, 19...253 V AC
 FEL52, 10... 55 V DC, PNP
 FEL58, NAMUR, H-L
 *2

316L, IP66/68, 5 m
 316L, IP65, Pg11, ISO 4400
 316L, NEMA 4x, NPT 1/2, ISO 4400
 316L, IP66/68, M12
 *2

*1
 EN 10204-3.1, 316L
 EN 10204-3.1, NACE MR0175, 316L
 100 bar (FTL51)
 100 bar, EN 10204-3.1, NACE MR0175 (FTL51)
 GL/ABS marine certificate (FTL51: max. 1600 mm)
 *2

*1 ohne / without / sans / sin / senza / zonder
 *2 andere / others / autres / otros / altri / andere

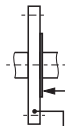
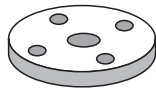
"L II" Schaltpunkt / Switchpoint / Point de commutation /
 Punto de commutación / Punto di commutazione / Schakelpunt

Liquiphant II FTL360/365, FDL30/35

"T" Temperaturstanzstück / Temperature spacer /
 Élément de refroidissement / Tramo disipador detemperatura /
 Distanziale per temperatura / Temperatuurreductiestük

"p" Druckdichte Durchführung / Pressure sealed bushing /
 Entrée résistant à la pression / Extensión resistente a la presión /
 Passacavo a tenuta di pressione / Gasdichte doorvoering

DE- Flansche
 EN- Flanges
 FR- Brides
 ES- Brida
 IT - Flangia
 NL- Flens



ANSI B 16.5

AA2	1/4"	150 lbs, RF, 316/316L
AB2	1/2"	300 lbs, RF, 316/316L (FTL51)
AC2	1/2"	150 lbs, RF, 316/316L
AD2	1/2"	300 lbs, RF, 316/316L (FTL51)
AE2	2"	150 lbs, RF, 316/316L
AE5	2"	150 lbs, AlloyC4 >316/316L
AF2	2"	300 lbs, RF, 316/316L
AG2	2"	600 lbs, RF, 316/316L (FTL51)
AJ2	2 1/2"	300 lbs, RF, 316/316L (FTL51)
AL2	3"	150 lbs, RF, 316/316L
AM2	3"	300 lbs, RF, 316/316L (FTL51)
AN2	3"	600 lbs, RF, 316/316L (FTL51)
AP2	4"	150 lbs, RF, 316/316L
AQ2	4"	300 lbs, RF, 316/316L (FTL51)
AR2	4"	600 lbs, RF, 316/316L (FTL51)
A82	1"	150 lbs, RF, 316/316L

EN 1092-1

BA2	DN32,	PN6 A,	316L
BB2	DN32,	PN25/40 A,	316L
BC2	DN40,	PN6 A,	316L
BD2	DN40,	PN25/40 A,	316L
BE2	DN50,	PN6 A,	316L
BG2	DN50,	PN25/40 A,	316L
BH2	DN65,	PN6 A,	316L
BJ2	DN50,	PN100 A,	316L (FTL51)
BK2	DN65,	PN25/40 A,	316L
BM2	DN80,	PN10/16 A,	316L
BN2	DN80,	PN25/40 A,	316L
BQ2	DN100,	PN10/16 A,	316L
BR2	DN100,	PN25/40 A,	316L
B12	DN80,	PN100 A,	316L (FTL51)
B82	DN25,	PN25/40 A,	316L

CA2	DN32,	PN6 B1,	316L
CA5	DN32,	PN6,	AlloyC4 >316L
CE2	DN50,	PN6 B1,	316L
CE5	DN50,	PN6,	AlloyC4 >316L
CG2	DN50,	PN25/40 B1, 316L	
CG5	DN50,	PN25/40,	AlloyC4 >316L
CJ2	DN50,	PN100 B2,	316L (FTL51)
CN2	DN80,	PN25/40 B1, 316L	
CN5	DN80,	PN25/40,	AlloyC4 >316L
CQ2	DN100,	PN10/16 B1, 316L	
CQ5	DN100,	PN10/16,	AlloyC4 >316L
C12	DN80,	PN100 B2,	316L (FTL51)
C85	DN25,	PN25/40 B1, 316L	
C85	DN25,	PN25/40,	AlloyC4 >316L
DG2	DN50,	PN40 B1,	316L
DN2	DN80,	PN40 B1,	316L
D82	DN25,	PN40 B1,	316L
FG2	DN50,	PN40 C,	316L
NG2	DN50,	PN40 D,	316L

JIS B2220

KA2	10K 25,	RF,	316L
KC2	10K 40,	RF,	316L
KE2	10K 50,	RF,	316L
KE5	10K 50,		AlloyC4 >316L
KL2	10K 80,	RF,	316L
KP2	10K 100,	RF,	316L

DE- Geräte-Identifikation
FTL50H, FTL51H

EN- Device Identification
FTL50H, FTL51H

FR- Dénomination
FTL50H, FTL51H

ES - Identificación del equipo
FTL50H, FTL51H

IT - Identificazione
FTL50H, FTL51H

NL- Instrument-identificatie
FTL50H, FTL51H



ENDRESS+HAUSER
LIQUIPHANT M

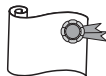
Order Code

FTL5#H-#####












A D C F G H J M P R S U Y

*1, WHG
ATEX II 3 G EEx nA II T6, WHG
ATEX II 3 D T85°C, *3
ATEX II 1/2 G EEx Ia IIC T6, WHG
ATEX II 1/2 D T80°C, *3
ATEX II 1/2 G EEx Ia IIC T6
ATEX II 1/2 D T80°C, *3
ATEX II 1 G EEx Ia IIC T6
NEPSI Ex Ia IIC T6
FM, IS, Cl. I, II, III, Div. 1, Gr. A-G
FM, NI, Cl. I, Div. 2, Gr. A-D
CSA, IS, Cl. I, II, III, Div. 1, Gr. A-G
CSA, General purpose
*2



A##
B##
C##
K##



EE2	1", 316L		max. 40 bar, 100 °C max. 25 bar, 150 °C
GQ2	G ¾, ISO 228, 316L (FTL50H)		max. 100 bar, 150 °C
GW2	G 1, ISO 228, 316L		max. 40 bar, 100 °C max. 25 bar, 150 °C
HE2	DIN 11864-1 A, DN50, 316L		max. 25 bar, 140 °C
MA2	DIN 11851, DN32 PN25, 316L		DN32/40: max. 40 bar, 100 °C DN32/40, DN50: max. 25 bar, 140 °C
MC2	DIN 11851, DN40 PN25, 316L		
ME2	DIN 11851, DN50 PN25, 316L		
PE2	DRD, 65 mm, 316L		max. 40 bar, 100 °C max. 25 bar, 150 °C
TC2	DN25-38 (1...1½"), ISO 2852, 316L Tri-Clamp		max. 16 bar, 120 °C max. 2 bar, 150 °C
TE2	DN40-51 (2"), ISO 2852, 316L Tri-Clamp		
UE2	SMS 2", PN25, 316L		max. 25 bar, 140 °C
WE2	Varivent®, DN65-162 PN10, 316L		max. 64 bar, 150 °C
YY9	*2		



- *1 ohne / without / sans / sin / senza / zonder
- *2 andere / others / autres / otros / altri / andere
- *3 nicht gültig für PBT / not valid for PBT / non valable pour PBT / no es válido para PBT / non valido per PBT / niet geldig voor PBT

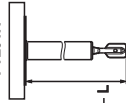


ENDRESS+HAUSER
LIQUIPHANT M

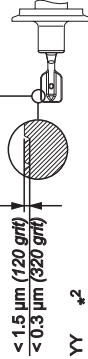
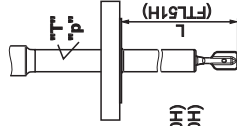
Order Code

FTL5#H-##### mm
in

FTL51H



AC	#2	Ra < 1.5 µm/120 grit	(FTL50H)
AD	#2	Ra < 0.3 µm/320 grit 3A	(FTL50H)
BC	..... mm,	Ra < 1.5 µm/120 grit	
BD	..... mm,	Ra < 0.3 µm/320 grit 3A	
CC	..... in,	Ra < 1.5 µm/120 grit	
CD	..... in,	Ra < 0.3 µm/320 grit 3A	
DC	"L II",	Ra < 1.5 µm/120 grit	
DD	"L II",	Ra < 0.3 µm/320 grit 3A	
IC	#2	Ra < 1.5 µm/120 grit	+ "T" (FTL50H)
ID	#2	Ra < 0.3 µm/320 grit 3A	+ "T" (FTL50H)
JC	..... mm,	Ra < 1.5 µm/120 grit	
JD	..... mm,	Ra < 0.3 µm/320 grit	
KC	..... in,	Ra < 1.5 µm/120 grit	
KD	..... in,	Ra < 0.3 µm/320 grit	
LC	"L II",	Ra < 1.5 µm/120 grit	
LD	"L II",	Ra < 0.3 µm/320 grit	
QC	#2	Ra < 1.5 µm/120 grit	+ "p" (FTL50H)
QD	#2	Ra < 0.3 µm/320 grit 3A	+ "p" (FTL50H)
RC	..... mm,	Ra < 1.5 µm/120 grit	
RD	..... mm,	Ra < 0.3 µm/320 grit	
SC	..... in,	Ra < 1.5 µm/120 grit	
SD	..... in,	Ra < 0.3 µm/320 grit	
TC	"L II",	Ra < 1.5 µm/120 grit	
TD	"L II",	Ra < 0.3 µm/320 grit	



FEL51, 19...253 V AC
 FEL52, 10... 55 V DC, PNP
 FEL56, NAMUR, H-L
 *2

316L, IP66/68, 5 m
 316L, IP65, Pg11, ISO 4400
 316L, NEMA 4x, NPT 1/2, ISO 4400
 316L, IP66/68, M12
 *2

A *1
 B EN 10204-3.1, CoC
 C EN 10204-3.1, 316L
 S GL/ABS marine certificate (FTL51H: max. 1600 mm)
 Y *2

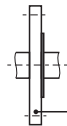
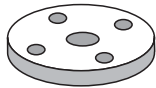
*1 ohne / without / sans / sin / senza / zonder
 *2 andere / others / autres / otros / altri / andere

"L II" Schaltpunkt / Switchpoint / Point de commutation /
 Punto de conmutación / Punto di commutazione / Schakelpunt
 Liquiphant II FTL360/365, FDL30/35

"T" Temperaturdistanzstück / Temperature spacer /
 Élément de refroidissement / Tramo disipador de temperatura /
 Distanziale per temperatura / Temperatuurreductiestuk

"p" Druckdichte Durchführung / Pressure sealed bushing /
 Entrée résistante à la pression / Extensión resistente a la presión /
 Passacavo a tenuta di pressione / Gasdichte doorvoering

DE- Prozessanschlüsse
EN- Process connections
FR- Raccords process
ES- Conexiones a proceso
IT- Attacchi al processo
NL- Procesaanluiting



ANSI B 16.5

AA2 1¼", 150 lbs, RF, 316/316L
 AC2 1½", 150 lbs, RF, 316/316L
 AE2 2", 150 lbs, RF, 316/316L
 AF2 2", 300 lbs, RF, 316/316L
 AJ2 2½", 300 lbs, RF, 316/316L (FTL51H)
 AL2 3", 150 lbs, RF, 316/316L
 AM2 3", 300 lbs, RF, 316/316L (FTL51H)
 AP2 4", 150 lbs, RF, 316/316L
 AQ2 4", 300 lbs, RF, 316/316L (FTL51H)
 A82 1", 150 lbs, RF, 316/316L

EN 1092-1

BA2 DN32, PN6 A, 316L
 BB2 DN32, PN25/40 A, 316L
 BC2 DN40, PN6 A, 316L
 BD2 DN40, PN25/40 A, 316L
 BE2 DN50, PN6 A, 316L
 BG2 DN50, PN25/40 A, 316L
 BH2 DN65, PN6 A, 316L
 BK2 DN65, PN25/40 A, 316L
 BM2 DN80, PN10/16 A, 316L
 BN2 DN80, PN25/40 A, 316L
 BQ2 DN100, PN10/16 A, 316L
 BR2 DN100, PN25/40 A, 316L
 B82 DN25, PN25/40 A, 316L
 CG2 DN50, PN25/40 B1, 316L
 CN2 DN80, PN25/40 B1, 316L
 CQ2 DN100, PN10/16 B1, 316L

JIS B2220

KA2 10K 25, RF,
KC2 10K 40, RF,
KE2 10K 50, RF,
KL2 10K 80, RF,
KP2 10K 100, RF,

316L
316L
316L
316L
316L

DE- Behandlung

Am Gehäuse, Flansch oder Verlängerungsrohr anfassen

EN- Handling

Hold by housing, flange or extension tube

FR- Manipulation

Tenir par le boîtier, la bride ou le tube prolongateur

ES - Modo de empleo

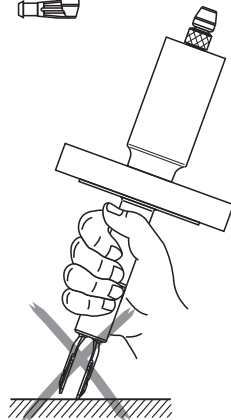
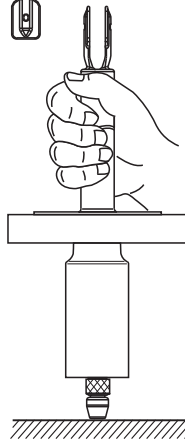
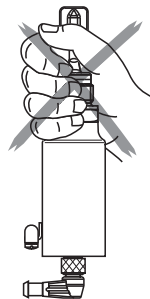
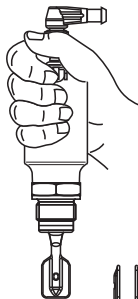
Coger por el cabezal, brida o tubo de extensión

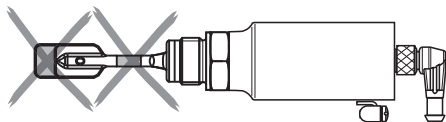
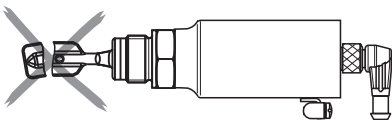
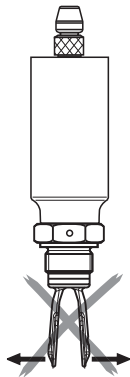
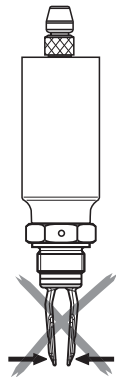
IT - Come maneggiare

Afferrare la custodia, per la flangia o per il tubo di estensione

NL- Behandeling

Vastpakken via behuizing, flens of verlengbuis





DE- Nicht verbiegen
Nicht kürzen
Nicht verlängern

EN- Do not bend
Do not shorten
Do not lengthen

FR- Ne pas déformer
Ne pas raccourcir
Ne pas rallonger

ES- No torcer
No acortar
No alargar

IT - Non stringere o allargare
Non accorciare o allungare
Non piegare

NL- Niet verbuigen
Niet inkorten
Niet verlengen

DE- Verwendung

Grenzstanddetektion in
Flüssigkeiten

EN- Application

Point level detection in fluids

FR- Utilisation

Détection de niveau dans les
liquids

ES - Aplicación

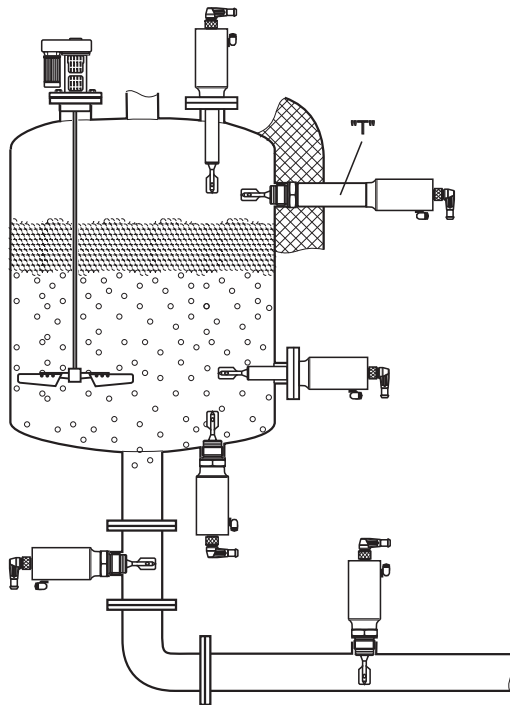
Detección de nivel en líquidos agua

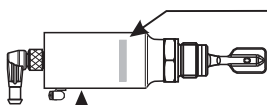
IT - Applicazione

Controllo livello nei liquidi

NL- Toepassing

Niveaudetectie in vloeistoffen

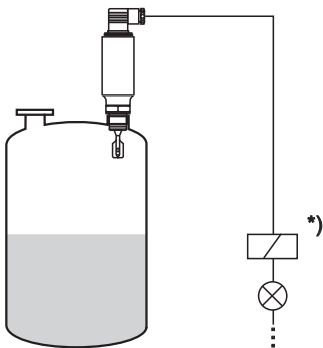




Order code:
FTL5#(H) - # ### # # # #

Elektronik
Electronic
Electronique
Electrónica
Elektronici
Elektronica

FEL51
FEL52
FEL58



*) Externe Last
External load
Charge externe
Carga externa
Carico esterno
Externe belasting

DE- Messeinrichtung
für direkten Anschluss

EN- Measuring system
for direct connection

**FR- Ensemble de détection
de niveau**
pour raccordement direct

ES - Sistema de medida
para conexión directa

IT - Sistema di misura
per connessione diretta

NL- Meetopstelling
voor directe aansluiting

DE- Messeinrichtung

für Anschluss über Schaltgerät

EN- Measuring system

for connection via switching unit

FR- Ensemble de détection de niveau

pour raccordement via détecteur

ES - Sistema de medida

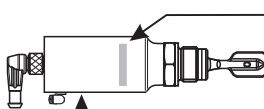
para conexión vía interruptores

IT - Sistema di misura

per connessione mediante unità di commutazione

NL- Meetopstelling

voor aansluiting aan een schakelversterker



**Elektronik
Electronic
Electronique
Electrónica
Elektronici
Elektronika**

Order code:

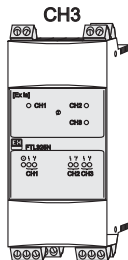
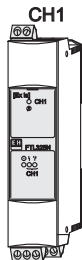
FTL5#(H) - # ### # # # #

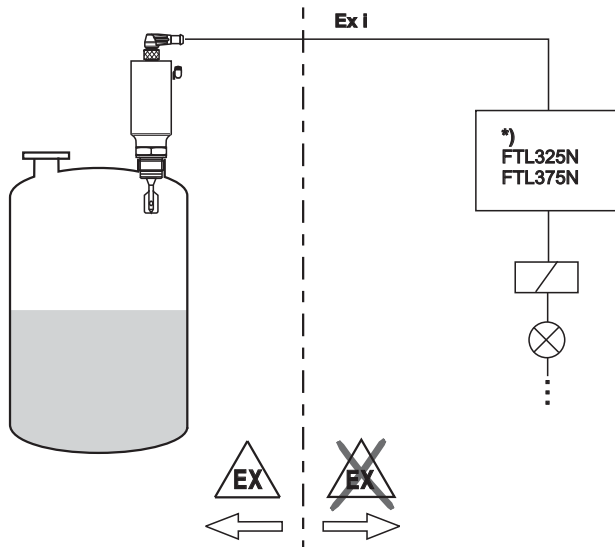
FEL58



FTL325N

FTL375N





- *) Schaltgerät, SPS, Trennverstärker
 Switching unit, PLC, isolating amplifier
 Détecteur, API, convertisseur/séparateur
 Interruptor, PLC, amplificador aislado
 Unità di commutazione, PLC, barriera di separazione
 Schakelverstärker, PLC, scheidingsverstärker

DE- Einbau

Schaltpunkt in Abhängigkeit vom Einbau

EN- Installation

Switchpoint depends on mounting position

FR- Montage

Point de commutation en fonction de l'implantation

ES- Montaje

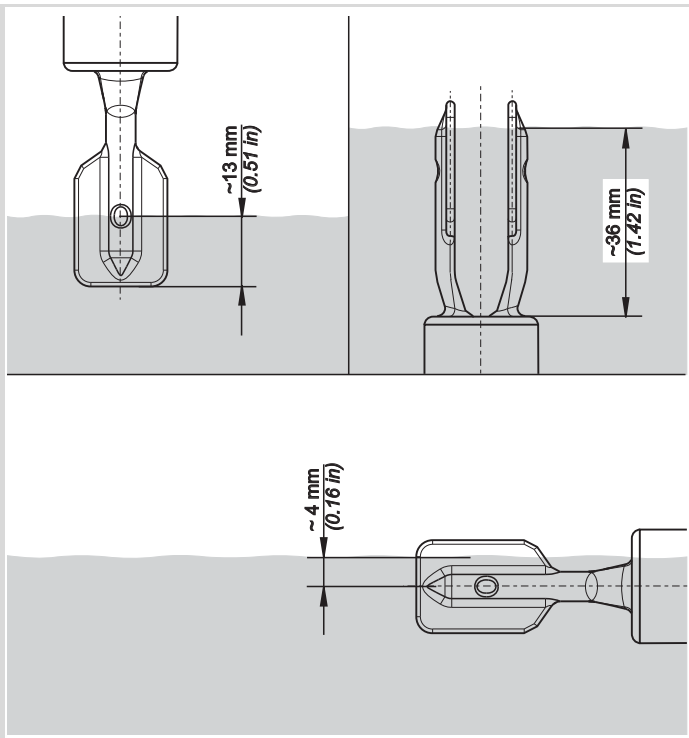
Punto de conmutación dependiendo de la posición de montaje

IT - Montaggio

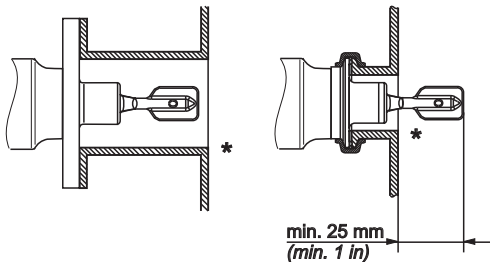
Punto di commutazione in funzione della posizione di montaggio

NL- Inbouw

Schakelpunt afhankelijk van inbouw

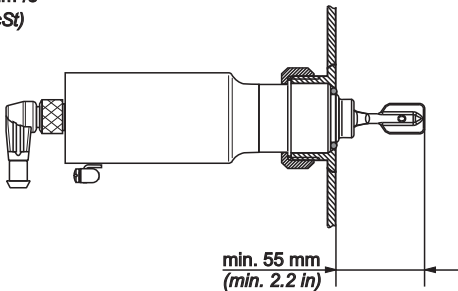


$v = 0 \dots 2000 \text{ mm}^2/\text{s}$
($v = 0 \dots 2000 \text{ cSt}$)



* entgraten / deburr / ébarber / libre / sbavare / ontbramen

$v = 0 \dots 10000 \text{ mm}^2/\text{s}$
($v = 0 \dots 10000 \text{ cSt}$)



DE- Einbaubeispiele
in Abhängigkeit von der
Viskosität v der Flüssigkeit

EN- Mounting examples
as a function of liquid viscosity v

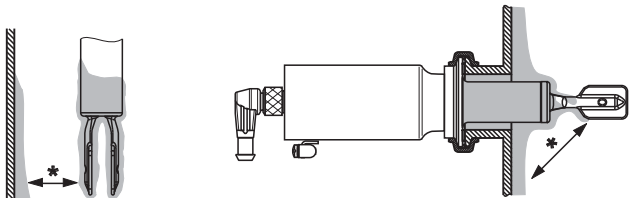
FR- Exemples d'implantation
dépendant de la viscosité v
du liquide

ES- Ejemplos de montaje
dependiendo de la viscosidad v
del líquido

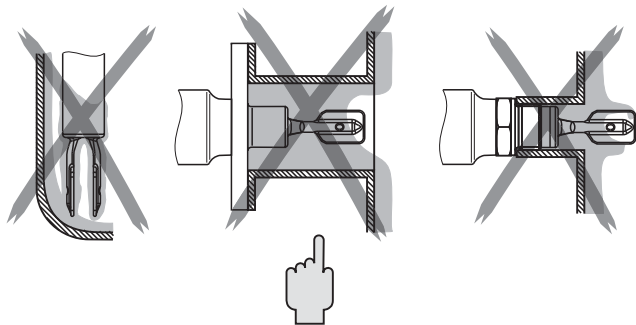
IT- Esempi di montaggio
come funzione di viscosità v
del liquido

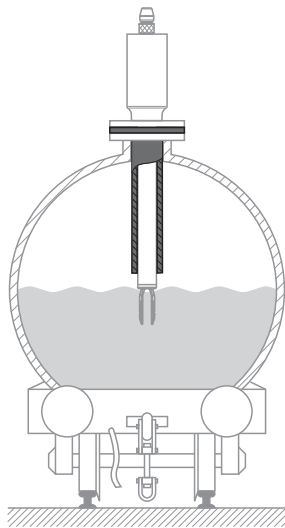
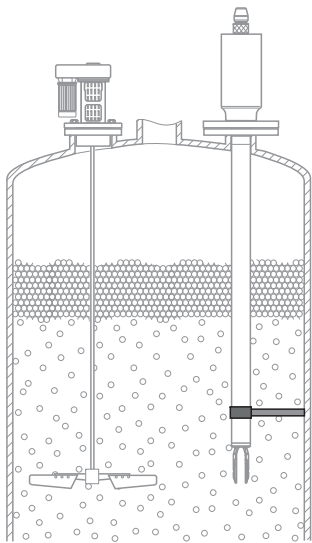
NL- Inbouwvoorbeelden
afhankelijk van de viscositeit v
van de vloeistof

- DE-** Ansatzbildung berücksichtigen.
Schwinggabel darf Ansatz nicht berühren
- EN-** Consider build-up.
Fork may not contact the build-up
- FR-** Tenir compte du colmatage.
Fourche ne doit pas entrer en contact avec le dépôt
- ES-** Tener en cuenta las adherencias.
Las horquillas no deben estar en contacto con las adherencias
- IT-** Tenere conto dei depositi.
La forcella non deve entrare in contatto con i depositi
- NL-** Rekening houden met aangroei.
Trilvork mag de aangroei niet aanraken



*** Abstand! / Distancel / Distance! / ¡Distancia! / Distanza! / Afstand!**





DE- Bei dynamischer Belastung abstützen

EN- In cases of dynamic forces support

FR- En cas de contraintes dynamiques, étayer le tube

ES- En caso de cargas dinámicas altas debe ser apoyado

IT- In caso di carichi dinamici, rinforzare con un supporto meccanico

NL- Bij mechanische belasting verstevigen

DE- Freiraum vorsehen

EN- Allow clearance

FR- Prévoir un espace libre

ES - Prever espacio

IT - Lasciare spazio per estrazione

NL- Ruimte vrijhouden

"T" = mit Temperaturdistanzstück für isolierten Tank

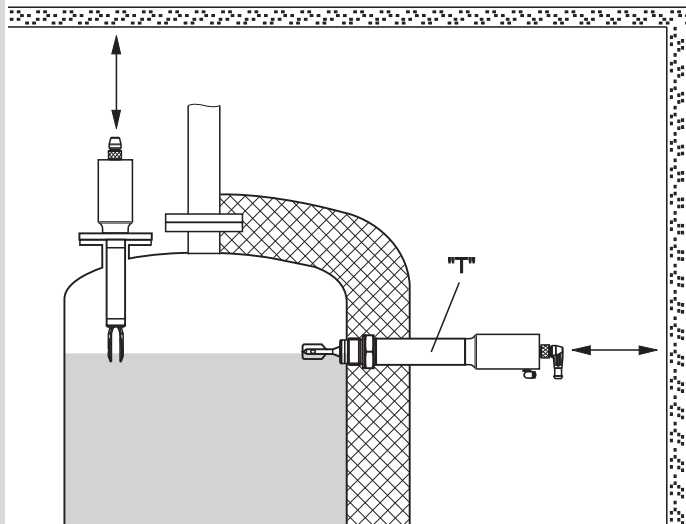
"T" = with temperature spacer for insulated tanks

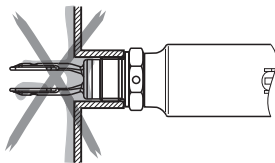
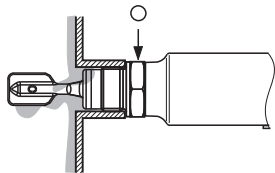
"T" = avec élément de refroidissement pour réservoir isolé

"T" = con tramo dissipador de temperatura para tanques aislados

"T" = con distanziale di temperatura per serbatoi isolati

"T" = met temperatuurreductiestuk voor geïsoleerde tanks





DE- Schwinggabel ausrichten:
 Markierung oben oder unten
 Ausrichten in Rohrleitungen:
 Markierung in Fließrichtung

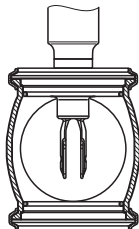
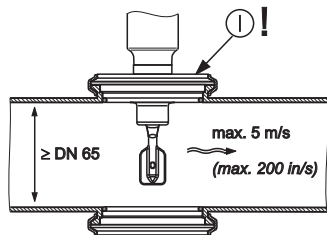
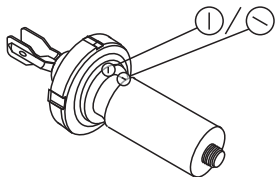
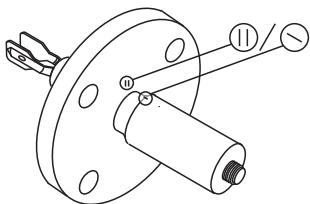
EN- Orientation of fork tines:
 Marking above or below
 Orientation in pipes:
 Marking in direction of flow

FR- Orientation des lames vibrantes:
 Repères en haut ou en bas
 Orientation dans une conduite:
 Dans le sens de l'écoulement

ES- Orientación de la horquilla:
 Marca arriba o abajo
 Orientación dentro de tuberías:
 Marca en dirección del caudal

IT - Allineamento della forcella:
 Marcatura in alto o in basso
 Allineamento in tubazioni:
 Nella direzione del flusso

NL- Vork uitrichten:
 Markering boven of onder
 Opstelling in leidingen:
 stroomrichting



DE- Liquiphant einschrauben.
Nicht am Gehäuse drehen.

EN- Screw Liquiphant into
process connection.
Don't use housing to turn.

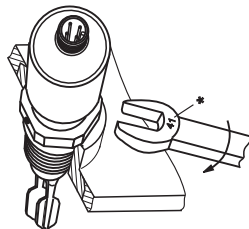
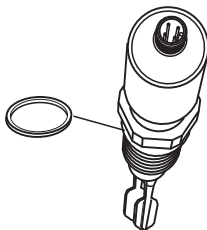
FR- Visser le Liquiphant.
Ne pas se servir du boîtier.

ES - Roscar el Liquiphant a la conexión
a proceso.
No girar el cabezal.

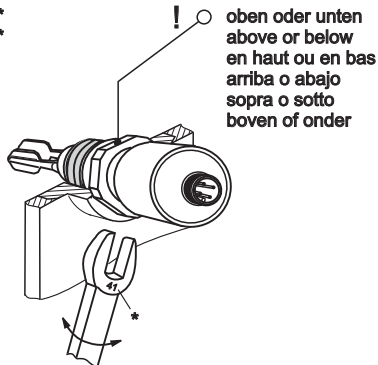
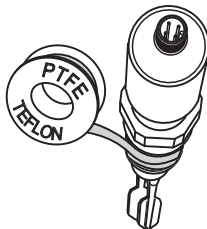
IT - Avvitare il Liquiphant all'attacco
di processo.
Allo scopo **non** utilizzare la
custodia.

NL- Schroef de Liquiphant in
de procesaansluiting.
Draai hierbij **niet** aan de behuizing.

G ¾, 32 mm (1¼")*
G 1, 41 mm (1⅝")*



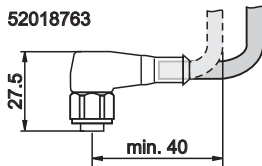
NPT ¾, R ¾, G ¾, 32 mm (1¼")*
NPT 1, R 1, G 1, 41 mm (1⅝")*



de - Nummer = Farbe
en - Number = Colour
fr - Numéro = Couleur

es - Número = Color
it - Numero = Colore
nl - Nummer = Kleur

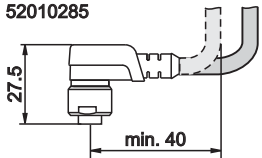
52018763



- 1 = BN
- 2 = WT
- 3 = BU
- 4 = BK

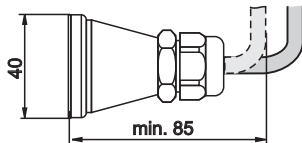
FTL5#(H) #####N3# (M12x1)

52010285



- 1 = BN
- 2 = WT
- 3 = BU
- 4 = BK

FTL5#(H) - #####C3#



- 1 = BU
- 2 = BK
- 3 = BN
- 4 = GNYE

DE- Anschluss

Abmessungen in mm

EN- Connections

Dimensions in mm

FR- Raccordement

Dimensions en mm

ES- Conexiones

Dimensiones en mm

IT- Collegamenti elettrici

Dimensioni in mm

NL- Aansluiting

Afmetingen in mm

FTL5#(H)-#####D3# (PG11)
FTL5#(H)-#####E3# (NPT1/2")



-30°C ≤ TA ≤ +70°C

100 mm = 3.94 in

DE- Anschluss M12x1
FEL52 DC-PNP

EN- Connections M12x1
FEL52 DC-PNP

FR- Raccordement M12x1
FEL52 DC-PNP

ES- Conexiones M12x1
FEL52 DC-PNP

IT- Collegamenti elettrici M12x1
FEL52 DC-PNP

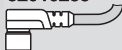
NL- Aansluiting M12x1
FEL52 DC-PNP

52018763



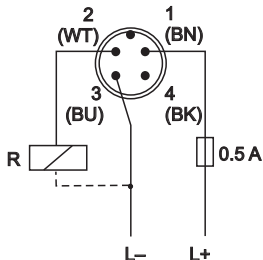
FTL5#(H)-#####N3# (M12x1)

52010285

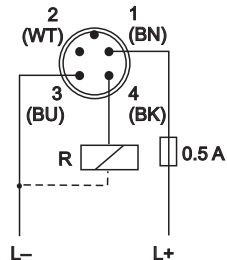


FTL5#(H)-#####N3# (M12x1)

MAX



MIN



R = externe Last / external load /
charge externe / carga exterior /
carico esterno / externe belasting

I_{max}. 350 mA
U = 10...55 V

Speisegerät mit galvanischer Trennung, z.B. nach EN 61558-1

Power supply with galvanic isolation acc. to e.g. EN 61558-1

Alimentation avec séparation galvanique, par ex. selon EN 61558-1

Fuente de alimentación con aislamiento galvanico de acuerdo con el ejemplo EN 61558-1

Alimentazione con isolamento galvanico in accordo a EN 61558-1

Voedingsunit met galvanische scheiding, bijv. conform EN 61558-1

	MAX		MIN			
					Störung Fault Défaut Fallo Guasto Storing	L1 L+ 0 V N L-
U _{DC} (DC)						
 (PNP)						

DE- Funktion
FEL52 DC-PNP

EN- Function
FEL52 DC-PNP

FR- Fonction
FEL52 DC-PNP

ES- Funcionamiento
FEL52 DC-PNP

IT - Funzione
FEL52 DC-PNP

NL- Functie
FEL52 DC-PNP

leuchtet / lights up /
allumé / iluminado /
acceso / aan

blinkt / flashes /
clignote / parpadea /
lampeggia / knippert

aus / off /
éteint / apagado /
spento / uit

DE- Anschluss M12x1
FEL58 NAMUR

EN- Connections M12x1
FEL58 NAMUR

FR- Raccordement M12x1
FEL58 NAMUR

ES- Conexiones M12x1
FEL58 NAMUR

IT - Collegamenti elettrici M12x1
FEL58 NAMUR

NL- Aansluiting M12x1
FEL58 NAMUR

Power supply

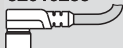
DC: 8.2 V +/- 20%

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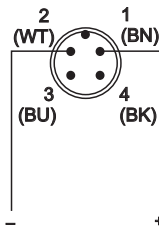
~~FTL5#(H)-#####N3# (M12x1)~~

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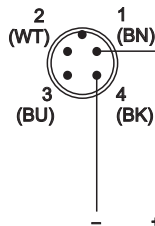


FTL5#(H)-#####N3# (M12x1)

MAX



MIN



H 2.2...3.5 mA

L 0.6...1.0 mA



z. B. / e. g. / p. e. / por ej. / p. e. / bijv.
FXN421, FXN422, SIN100, SIN110,
FTL325N, FTL375N

Multiplexer: Taktzeit min. 3 s
Multiplexer: duty pulse cycle min. 3 s
Multiplexeur: cycle d'impulsions min. 3 s
Multiplexer: ciclo de impulso mín. 3 s
Multiplexer: tempo di ciclo min. 3 s
Multiplexer: pulstijd min. 3 s

Trennverstärker nach
NAMUR (IEC 60947-5-6)

Isolating amplifier to
NAMUR (IEC 60947-5-6)

Convertisseur / séparateur
selon NAMUR (IEC 60947-5-6)

Amplificador aislado según
NAMUR (IEC 60947-5-6)

Barriera di separazione
secondo NAMUR (IEC 60947-5-6)

Scheidingsverstärker
conform NAMUR (IEC 60947-5-6)

	MAX		MIN		⚡	✕
					Störung Fault Défaut Fallo Guasto Storing	
NAMUR	H 2.2...3.5		H 2.2...3.5			
		0.6...1.0 L		0.6...1.0 L	< 1.0	
	1.0 Hz	1.0 Hz	1.0 Hz	1.0 Hz	0.3 Hz	
	= leuchtet / lights up / allumé / iluminado / acceso / aan = blinkt / flashes / clignote / parpadea / lampeggia / knippert = aus / off / éteint / apagado / spento / uit					

DE- Funktion
FEL58 NAMUR

EN- Function
FEL58 NAMUR

FR- Fonction
FEL58 NAMUR

ES- Funcionamiento
FEL58 NAMUR

IT - Funzione
FEL58 NAMUR

NL- Functie
FEL58 NAMUR

DE- Anschluss Ventilstecker
FEL51 AC

EN- Connection valve plug
FEL51 AC

FR- Raccordement connecteur EV
FEL51 AC

ES- Terminal de conexiones
FEL51 AC

IT- Collegamento connettore valvola
FEL51 AC

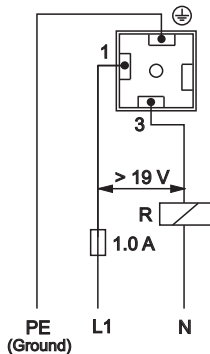
NL- Connector aansluiting
FEL51 AC

FTL5#(H)-#####D3# (PG11)
FTL5#(H)-#####E3# (NPT1/2")

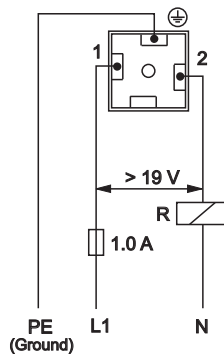


$-30^{\circ}\text{C} \leq \text{TA} \leq +70^{\circ}\text{C}$

MAX



MIN



R = externe Last / external load /
charge externe / carga exterior /
carico esterno / externe belasting

I max. 350 mA
U \approx 19...253 V AC

min. 2.5 VA / 253 V (10 mA)
min. 0.5 VA / 24 V (20 mA)

	MAX		MIN		⌋	⌋
					Störung Fault Défaut Fallo Guasto Storing	L1 L+ 0 V N L-
U~ (AC)						
	<p>☀ = leuchtet / lights up / allumé / iluminado / acceso / aan</p> <p>☼ = blinkt / flashes / clignote / parpadea / lampeggia / knippert</p> <p>● = aus / off / éteint / apagado / spento / uit</p>					

DE- Funktion
FEL51 AC

EN- Function
FEL51 AC

FR- Fonction
FEL51 AC

ES- Funcionamiento
FEL51 AC

IT - Funzione
FEL51 AC

NL- Functie
FEL51 AC

DE- Anschluss Ventilstecker
FEL52 DC-PNP

EN- Connection valve plug
FEL52 DC-PNP

FR- Raccordement connecteur EV
FEL52 DC-PNP

ES- Terminal de conexiones
FEL52 DC-PNP

IT- Collegamento connettore valvola
FEL52 DC-PNP

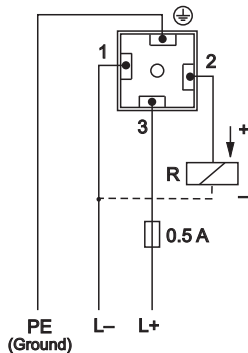
NL- Connector aansluiting
FEL52 DC-PNP

FTL5#(H)-#####D3# (PG11)
FTL5#(H)-#####E3# (NPT1/2")

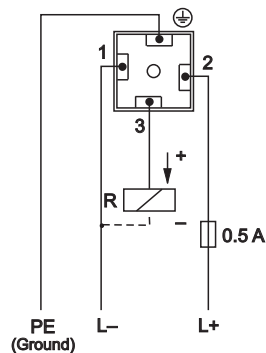


$-30^{\circ}\text{C} \leq \text{TA} \leq +70^{\circ}\text{C}$

MAX



MIN



R = externe Last / external load /
charge externe / carga exterior /
carico esterno / externe belasting

I_{max} 350 mA
U = 10...55 V

	MAX		MIN			
					Störung Fault Défaut Fallo Guasto Storing	L1 L+ 0 V N L-
U_{DC} (DC)						
(PNP)	3 L+	2 -	3 L+	2 -	2 L+	3 -
	<p> = leuchtet / lights up / allumé / iluminado / acceso / aan</p> <p> = blinkt / flashes / clignote / parpadea / lampeggia / knippert</p> <p> = aus / off / éteint / apagado / spento / uit</p>					

DE- Funktion
FEL52 DC-PNP

EN- Function
FEL52 DC-PNP

FR- Fonction
FEL52 DC-PNP

ES - Funcionamiento
FEL52 DC-PNP

IT - Funzione
FEL52 DC-PNP

NL- Functie
FEL52 DC-PNP

DE- Anschluss Ventilstecker
FEL58 NAMUR

EN- Connection valve plug
FEL58 NAMUR

FR- Raccordement connecteur EV
FEL58 NAMUR

ES- Terminal de conexiones
FEL58 NAMUR

IT- Collegamento connettore valvola
FEL58 NAMUR

NL- Connector aansluiting
FEL58 NAMUR

Power supply

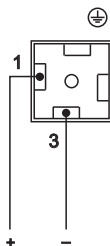
DC: 8.2 V +/- 20%

FTL5#(H)-#####D3# (PG11)
FTL5#(H)-#####E3# (NPT1/2")

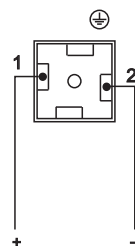


$-30^{\circ}\text{C} \leq \text{TA} \leq +70^{\circ}\text{C}$

MAX



MIN



H 2.2...3.5 mA
L 0.6...1.0 mA



z. B. / e. g. / p. e. / por ej. / p. e. / bijv.
FXN421, FXN422, SIN100, SIN110,
FTL325N, FTL375N

Multiplexer: Taktzeit min. 3 s
Multiplexer: duty pulse cycle min. 3 s
Multiplexeur: cycle d'impulsions min. 3 s
Multiplexer: ciclo de impulso mín. 3 s
Multiplexer: tempo di ciclo min. 3 s
Multiplexer: pulstijd min. 3 s

Trennverstärker nach
NAMUR (IEC 60947-5-6)

Isolating amplifier to
NAMUR (IEC 60947-5-6)

Convertisseur / séparateur
selon NAMUR (IEC 60947-5-6)

Amplificador aislado según
NAMUR (IEC 60947-5-6)

Barriera di separazione
secondo NAMUR (IEC 60947-5-6)

Scheidingsverstërker
conform NAMUR (IEC 60947-5-6)

	MAX		MIN		⚡	U
					Störung Fault Défaut Fallo Guasto Storing	
NAMUR	H 2.2...3.5	H 2.2...3.5	H 2.2...3.5	H 2.2...3.5	H 2.2...3.5	
		0.6...1.0 L	0.6...1.0 L	< 1.0		
	1.0 Hz	1.0 Hz	1.0 Hz	1.0 Hz	0.3 Hz	

DE- Funktion
FEL58 NAMUR

EN- Function
FEL58 NAMUR

FR- Fonction
FEL58 NAMUR

ES- Funcionamiento
FEL58 NAMUR

IT - Funzione
FEL58 NAMUR

NL- Functie
FEL58 NAMUR

- = leuchtet / lights up / allumé / iluminado / acceso / aan
 = blinkt / flashes / clignote / parpadea / lampeggia / knippert
 = aus / off / éteint / apagado / spento / uit

DE- Anschluss Kabelschwanz
FEL51 AC

EN- Connection
unconnected cable end
FEL51 AC

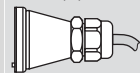
FR- Raccordement extrémité de câble
FEL51 AC

ES- Conexión del cable integrado
FEL51 AC

IT- Collegamento
cavo senza connettore
FEL51 AC

NL- Kabel/wartel aansluiting
FEL51 AC

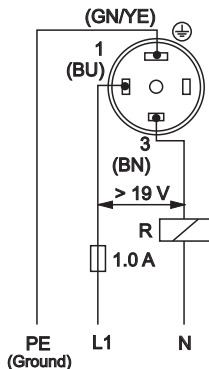
FTL5#(H)-#####C3#



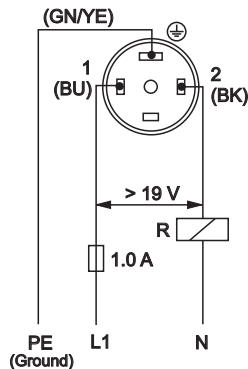
R = externe Last / external load /
charge externe / carga exterior /
carico esterno / externe belasting

min. 2.5 VA / 253 V (10 mA)
min. 0.5 VA / 24 V (20 mA)

MAX



MIN



I_{max} 350 mA
U ≈ 19...253 V AC

	MAX		MIN			
					Störung Fault Défaut Fallo Guasto Storing	L1 L+ 0 V N L-
U~ (AC)						

- = leuchtet / lights up / allumé / iluminado / acceso / aan
 = blinkt / flashes / clignote / parpadea / lampeggia / knippert
 = aus / off / éteint / apagado / spento / uit

DE- Funktion
FEL51 AC

EN- Function
FEL51 AC

FR- Fonction
FEL51 AC

ES- Funcionamiento
FEL51 AC

IT - Funzione
FEL51 AC

NL- Functie
FEL51 AC

DE- Anschluss Kabelschwanz
FEL52 DC-PNP

EN- Connection
unconnected cable end
FEL52 DC-PNP

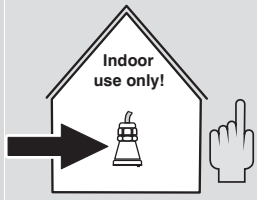
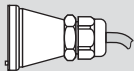
FR- Raccordement extrémité de câble
FEL52 DC-PNP

ES- Conexión del cable integrado
FEL52 DC-PNP

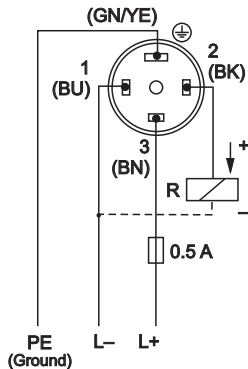
IT- Collegamento
cavo senza connettore
FEL52 DC-PNP

NL- Kabel/wartel aansluiting
FEL52 DC-PNP

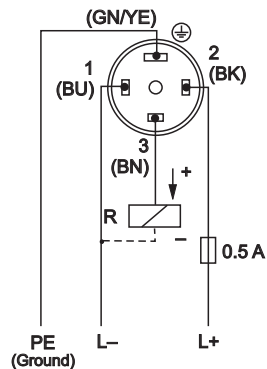
FTL5#(H)-#####C3#



MAX



MIN



R = externe Last / external load /
charge externe / carga exterior /
carico esterno / externe belasting

I_{max} 350 mA
 $U = 10...55$ V

	MAX		MIN		L	
					Störung Fault Défaut Fallo Guasto Storing	L1 L+ 0 V N L-
U _{...} (DC)						
(PNP)	3 L+	2 -	3 L+	2 -	3 L+	2 -

- = leuchtet / lights up / allumé / iluminado / acceso / aan
 = blinkt / flashes / clignote / parpadea / lampeggia / knippert
 = aus / off / éteint / apagado / spento / uit

DE- Funktion
 FEL52 DC-PNP
 EN- Function
 FEL52 DC-PNP
 FR- Fonction
 FEL52 DC-PNP
 ES - Funcionamiento
 FEL52 DC-PNP
 IT - Funzionamento
 FEL52 DC-PNP
 NL- Functie
 FEL52 DC-PNP

DE- Anschluss Kabelschwanz
FEL58 NAMUR

EN- Connection
unconnected cable end
FEL58 NAMUR

FR- Raccordement extrémité de câble
FEL58 NAMUR

ES- Conexión del cable integrado
FEL58 NAMUR

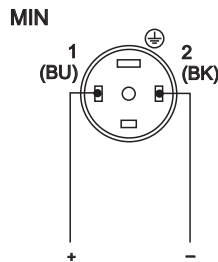
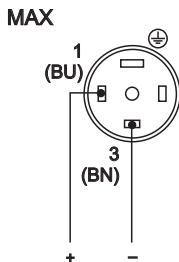
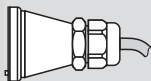
IT - Collegamento
cavo senza connettore
FEL58 NAMUR

NL- Kabel/wartel aansluiting
FEL58 NAMUR

Power supply

DC: 8.2 V +/- 20%

FTL5#(H) #####C3#



H 2.2...3.5 mA

L 0.6...1.0 mA



z. B. / e. g. / p. e. / por ej. / p. e. / bijv.
FXN421, FXN422, SIN100, SIN110,
FTL325N, FTL375N

Multiplexer: Taktzeit min. 3 s
Multiplexer: duty pulse cycle min. 3 s
Multiplexeur: cycle d'impulsions min. 3 s
Multiplexer: ciclo de impulso mín. 3 s
Multiplexer: tempo di ciclo min. 3 s
Multiplexer: pulstijd min. 3 s

Trennverstärker nach
NAMUR (IEC 60947-5-6)

Isolating amplifier to
NAMUR (IEC 60947-5-6)

Convertisseur / séparateur
selon NAMUR (IEC 60947-5-6)

Amplificador aislado según
NAMUR (IEC 60947-5-6)

Barriera di separazione
secondo NAMUR (IEC 60947-5-6)

Scheidingsverstërker
conform NAMUR (IEC 60947-5-6)

	MAX		MIN		⚡	U
					Störung Fault Défaut Fallo Guasto Storing	
NAMUR	H 2.2...3.5	H 2.2...3.5	H 2.2...3.5	H 2.2...3.5	H 2.2...3.5	
		0.6...1.0 L	0.6...1.0 L	< 1.0		
	1.0 Hz	1.0 Hz	1.0 Hz	1.0 Hz	0.3 Hz	
	= leuchtet / lights up / allumé / iluminado / acceso / aan = blinkt / flashes / clignote / parpadea / lampeggia / knippert = aus / off / éteint / apagado / spento / uit					

DE- Funktion
FEL58 NAMUR

EN- Function
FEL58 NAMUR

FR- Fonction
FEL58 NAMUR

ES- Funcionamiento
FEL58 NAMUR

IT - Funzione
FEL58 NAMUR

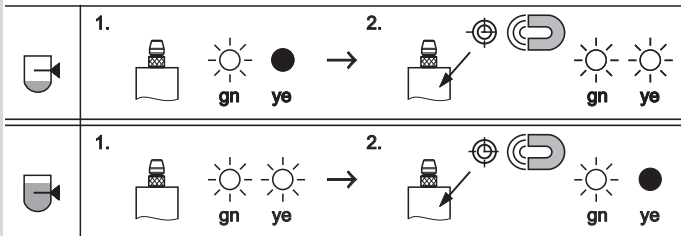
NL- Functie
FEL58 NAMUR

- DE- Test mit Prüfmagnet
- EN- Test with test magnet
- FR- Test avec aimant de contrôle
- ES- Test con imán de control
- IT - Test con magnete di prova
- NL- Test met testmagneet

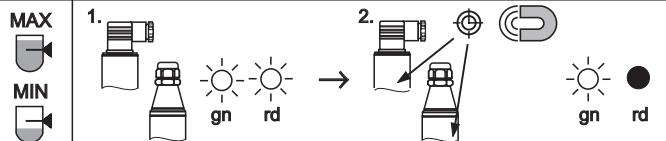
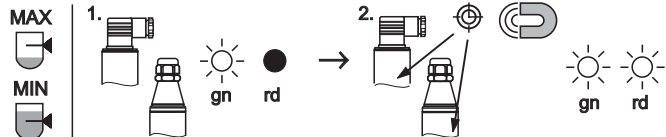


Sie müssen sicherstellen, dass keine gefährlichen Prozesse an der Anlage ausgelöst werden /
 You must ensure that no hazardous processes on the system are triggered /
 Vous devez vous assurer qu'aucun processus dangereux n'est déclenché sur l'installation /
 Deberá asegurarse de que no pueda activarse ningún proceso peligroso en la instalación /
 Assicurarsi che non si generino processi pericolosi nell'impianto /
 Zorg ervoor dat er geen gevaarlijke processen in de installatie worden gestart

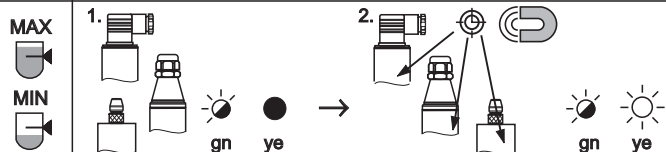
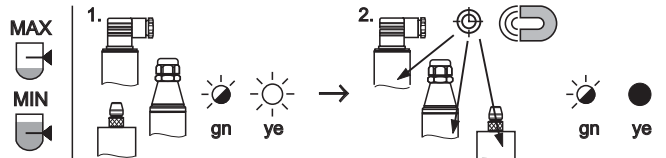
DC-PNP + M12x1



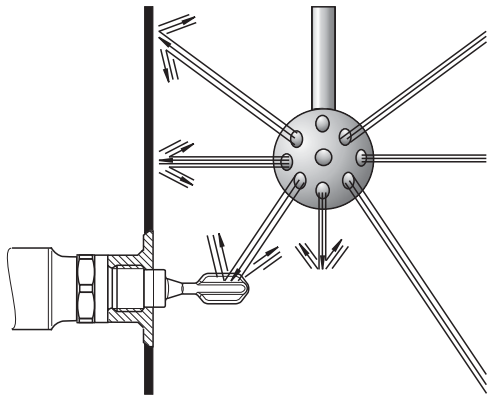
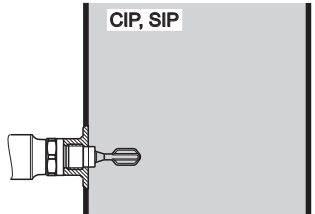
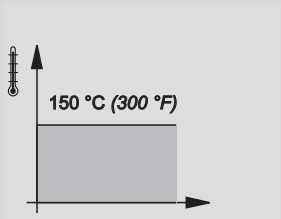
AC + DC-PNP

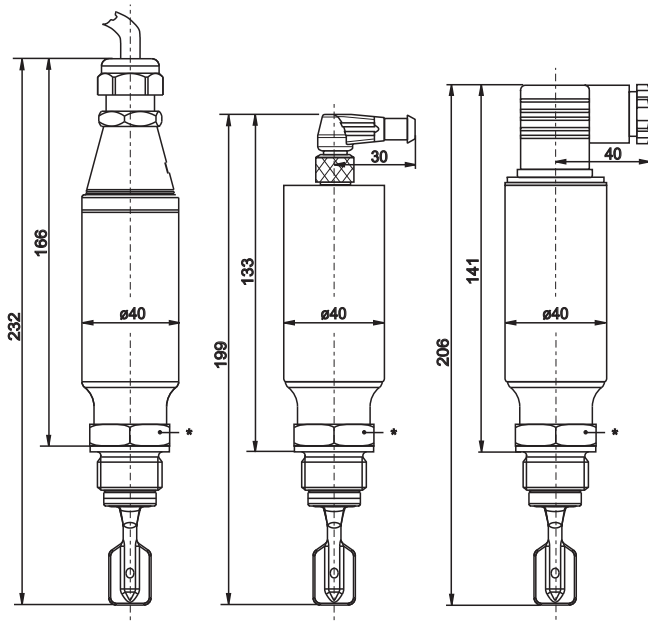


NAMUR



DE- Reinigung
EN- Cleaning
FR- Nettoyage
ES - Limpieza
IT - Pulizia
NL- Reiniging





* SW 32 / 32 AF

DE- Technische Daten
Abmessungen in mm

EN- Technical Data
Dimensions in mm

FR- Caractéristiques techniques
Dimensions en mm

ES- Datos técnicos
Dimensiones en mm

IT- Dati tecnici
Dimensioni in mm

NL- Technische gegevens
Afmetingen in mm

100 mm = 3.94 in

DE- Umgebungstemperatur T_a
Prozesstemperatur T_p

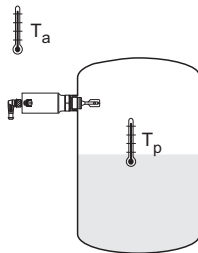
EN- Ambient temperature T_a
Process temperature T_p

FR- Température ambiante T_a
Température de process T_p

ES- Temperatura ambiente T_a
Temperatura del proceso T_p

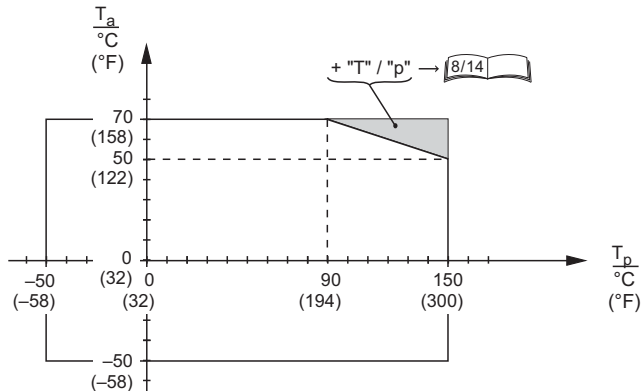
IT- Temperatura ambiente T_a
Temperatura di processo T_p

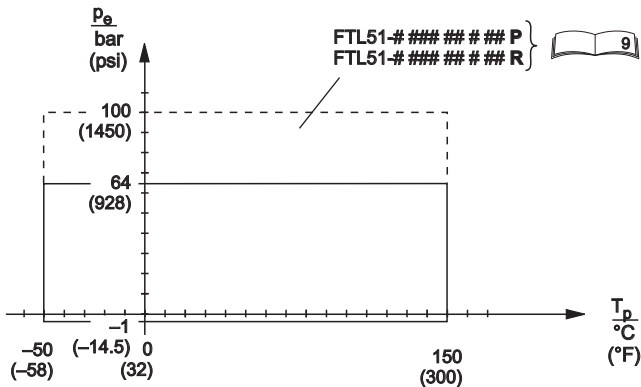
NL- Omgevingstemperatuur T_a
Procestemperatuur T_p



FTL5#(H)-#####D3# (PG11)
FTL5#(H)-#####E3# (NPT1/2")

$-30^{\circ}\text{C} \leq T_A \leq +70^{\circ}\text{C}$





DE- Prozessdruck p_e
 Prozesstemperatur T_p

EN- Process pressure p_e
 Process temperature T_p

FR- Pression de process p_e
 Température de process T_p

ES- Presión del proceso p_e
 Temperatura del proceso T_p

IT- Pressione di processo p_e
 Temperatura di processo T_p

NL- Procesdruk p_e
 Procestemperatuur T_p

DE- Zubehör, Ersatzteile

Abmessungen in mm

EN- Accessories, Spare parts

Dimensions in mm

**FR- Accessoires,
Pièces de rechange**

Dimensions en mm

ES - Accesorios, Repuestos

Dimensiones en mm

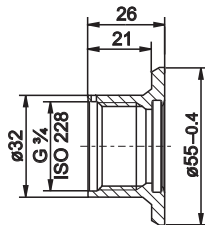
IT - Accessori, Pezzi di ricambio

Dimensioni in mm

**NL- Toebehoren,
Reserve-onderdelen**

Afmetingen in mm

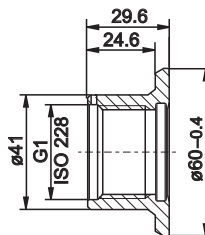
100 mm = 3.94 in



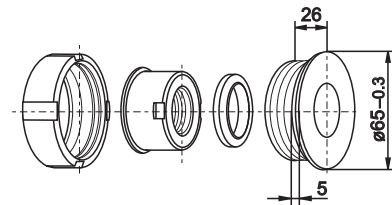
G 3/4
52001052



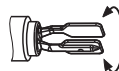
Einschweißmuffe
Weld-in socket
Manchon à souder
Manguito soldado
Attacco a saldare
Inlassok

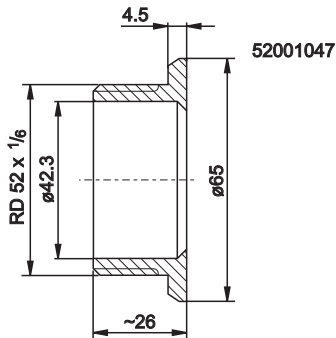


G 1
52001051



G 1
52001221



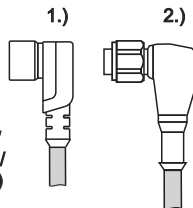


Einschweißadapter
Weld-in adapter
Adaptateur à souder
Adaptor soldado
Adattatore a saldare
Inlasadapter

DE- Abmessungen in mm
EN- Dimensions in mm
FR- Dimensions en mm
ES- Dimensiones en mm
IT- Dimensioni in mm
NL- Afmetingen in mm

Kabel / Cable / Câble / Cable / Cavo / Kabel
4 x 0.34

- 1.) M12 gewinkelt / M12, angled / M12 coudé / M12, acodado / ad angulo M12 / M12 haaks 52010285
- 2.) mit Dose M12 (+LED) / with M12 socket (+LED) / avec boîtier M12 (+ LED) / con caja M12 (+LED) / con attacco M12 (+LED) / met aansluiting (+LED) 52018763



- 1.)
 Cable fixed in position:
 -25...+70 °C (-13 to +158 °F)
 - Cable flexible:
 -5...+70 °C (23 to +158 °F)
- Not for Ex nA application!

100 mm = 3. 94 in

DE- Zubehör, Ersatzteile

für Montage und Test

EN- Accessories, Spare parts

for mounting and test

FR- Accessoires,

Pièces de rechange

pour montage et test

ES - Accesorios, Repuestos

para montaje y comprobación

IT - Accessori, Pezzi di ricambio

di montaggio e verifica

NL- Toebehoren,

Reserve-onderdelen

voor montage en test

Steckschlüssel SW 41 für Prozessanschluss

Socket spanner 41 AF for process connection

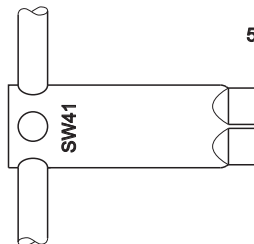
Clé de 41 pour raccord process

Llave de fijación SW 41 para conexión a proceso

Chiave a tubo 41 per attacco al processo

Pijpsleutel SW 41 voor procesaansluiting

52010156



52013204



Prüfmagnet

Test magnet

Aimant de contrôle

Imán de control

Magnete di prova

Testmagneet

Varianten AC- und DC-PNP mit Ventilstecker

Fehlfunktion	Ursache	Maßnahme
Grünes Licht leuchtet nicht	Keine Spannungsversorgung	Stecker, Kabel und Spannungsversorgung prüfen
Rotes Licht blinkt	Überlast oder Kurzschluss im Laststromkreis	Kurzschluss beheben
		Maximalen Laststrom auf unter 350 mA reduzieren
	Interner Sensorfehler oder Sensor korrodiert	Gerät austauschen

DC-PNP mit M12x1 Stecker

Fehlfunktion	Ursache	Maßnahme
Rotes Licht leuchtet (DC-PNP)	Überlast oder Kurzschluss im Laststromkreis	Kurzschluss beheben
		Maximalen Laststrom auf unter 250 mA reduzieren
Grünes Licht leuchtet nicht	Keine Spannungsversorgung	Stecker, Kabel und Spannungsversorgung prüfen
Rotes Licht blinkt (2 Hz)	Interner Sensorfehler oder Sensor korrodiert	Gerät austauschen

NAMUR

Fehlfunktion	Ursache	Maßnahme
Grünes Licht blinkt nicht	Keine Spannungsversorgung vom Trennschaltverstärker	Stecker, Kabel und Spannungsversorgung prüfen
Rotes Licht blinkt mit 0.3 Hz	Interner Sensorfehler oder Sensor korrodiert	Gerät austauschen

AC and DC-PNP versions with valve plug

Malfunction	Cause	Measure
Green light does not light up	No voltage supply	Check plug, cable and voltage supply
Red light flashes	Overload or short-circuit in the load-current circuit	Rectify short-circuit Reduce maximum load current to under 350 mA
	Internal sensor error or sensor corroded	Replace device

DC-PNP versions with M12x1 plug

Malfunction	Cause	Measure
Red light lights up (DC-PNP)	Overload or short-circuit in the load-current circuit	Rectify short-circuit Reduce maximum load current to under 250 mA
Green light does not light up	No voltage supply	Check plug, cable and voltage supply
Red light flashes (2 Hz)	Internal sensor error or sensor corroded	Replace device

NAMUR

Malfunction	Cause	Measure
Green light is not flashing	No voltage supply from switching amplifier	Check plug, cable and voltage supply
Red light flashes (0.3 Hz)	Internal sensor error or sensor corroded	Replace device

Variantes AC et DC-PNP avec connecteur EV

Dysfonctionnement	Cause	Mesure
Le témoin vert n'est pas allumé	Pas de tension d'alimentation	Vérifier la prise, le câble et l'alimentation en tension
Le témoin rouge clignote	Surcharge ou court-circuit dans le circuit de courant de charge	Éliminer le court-circuit
		Réduire le courant de charge maximal à moins de 350 mA
	Défaut interne de capteur ou capteur corrodé	Remplacer l'appareil

DC-PNP avec prise M12x1

Dysfonctionnement	Cause	Mesure
Le témoin rouge est allumé (DC-PNP)	Surcharge ou court-circuit dans le circuit de courant de charge	Éliminer le court-circuit
		Réduire le courant de charge maximal à moins de 250 mA
Le témoin vert n'est pas allumé	Pas de tension d'alimentation	Vérifier la prise, le câble et l'alimentation en tension
Le témoin rouge clignote (2 Hz)	Défaut interne de capteur ou capteur corrodé	Remplacer l'appareil

NAMUR

Dysfonctionnement	Cause	Mesure
Témoin vert ne clignote pas	Pas d'alimentation	Vérifier la prise, le câble et l'alimentation en tension
Le témoin rouge clignote (0.3 Hz)	Défaut interne de capteur ou capteur corrodé	Remplacer l'appareil

ES - Identificación de fallos

Variantes AC y DC-PNP con terminal de conexión		
Fallo	Causa	Medidas
La luz verde no se enciende	No hay suministro de tensión	Comprobar terminales, cable y suministro de tensión
La luz roja parpadea	Sobrecarga o cortocircuito en la corriente de carga	Subsanar el cortocircuito Reducir la corriente de carga por debajo de 350 mA
	Error interno del sensor o sensor corroído	Sustituir el aparato
DC-PNP con terminal M12x1		
Fallo	Causa	Medidas
La luz roja se enciende (DC-PNP)	Sobrecarga o cortocircuito en la corriente de carga	Subsanar el cortocircuito Reducir la corriente de carga por debajo de 250 mA
La luz verde no se enciende	No hay suministro de tensión	Comprobar terminales, cable y suministro de tensión
La luz roja parpadea (2 Hz)	Error interno del sensor o sensor corroído	Sustituir el aparato
NAMUR		
Fallo	Causa	Medidas
La luz verde no se enciende	No hay suministro de tensión	Comprobar terminales, cable y suministro de tensión
La luz roja parpadea (0.3 Hz)	Error interno del sensor o sensor corroído	Sustituir el aparato

Varianti CA e CC-PNP con connettore valvola

Anomalia	Causa	Rimedio
La luce verde non si accende	Nessuna alimentazione	Controllare le spine, i cavi e l'alimentazione
La luce rossa lampeggia	Sovraccarico o cortocircuito nel circuito della corrente di carico	Eliminare il cortocircuito
		Ridurre la corrente di carico massimo al di sotto di 350 mA
	Guasto interno al sensore o corrosione del sensore	Sostituire lo strumento

DC-PNP con spina M12x1

Anomalia	Causa	Rimedio
La luce rossa è accesa (CC-PNP)	Sovraccarico o cortocircuito nel circuito della corrente di carico	Eliminare il cortocircuito
		Ridurre la corrente di carico massimo al di sotto di 250 mA
La luce verde non si accende	Nessuna alimentazione	Controllare le spine, i cavi e l'alimentazione
La luce rossa lampeggia (2 Hz)	Guasto interno al sensore o corrosione del sensore	Sostituire lo strumento

NAMUR

Anomalia	Causa	Rimedio
La luce verde non si accende	Nessuna alimentazione	Controllare le spine, i cavi e l'alimentazione
La luce rossa lampeggia (0.3 Hz)	Guasto interno al sensore o corrosione del sensore	Sostituire lo strumento

Varianten AC- en DC-PNP met connector

Storingsfunctie	Oorzaak	Maatregelen
Groene lampje brandt niet	Geen voedingsspanning	Steker, kabel en voedingsspanning controleren
Rode lampje knippert	Overbelasting of kortsluiting in laststroomkring	Kortsluiting opheffen Maximale belastingsstroom reduceren tot onder 350 mA
	Interne sensorstoring of sensor gecorrodeerd	Instrument vervangen

DC-PNP mit M12x1 Stecker

Storingsfunctie	Oorzaak	Maatregelen
Rode lampje gaat aan (DC-PNP)	Overbelasting of kortsluiting in laststroomkring	Kortsluiting opheffen Maximale belastingsstroom reduceren tot onder 250 mA
Groene lampje brandt niet	Geen voedingsspanning	Steker, kabel en voedingsspanning controleren
Rode lampje knippert (2 Hz)	Interne sensorstoring of sensor gecorrodeerd	Instrument vervangen

NAMUR

Storingsfunctie	Oorzaak	Maatregelen
Groene lampje knippert niet	Geen voeding van de schakelversterker	Steker, kabel en voedingsspanning controleren
Rode lampje knippert (0.3 Hz)	Interne sensorstoring of sensor gecorrodeerd	Instrument vervangen






Technische Information / Technical Information / Information technique /
Información técnica / Informazioni tecniche / Technische Informatie

TI00328F Liquiphant FTL50, FTL50H, FTL51, FTL51H

Betriebsanleitung / Operating Instruction / Mise en service /
Instrucciones de funcionamiento / Istruzioni operative / Inbedrijfstellingsvoorschrift

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Sicherheitshinweise / Notes on Safety / Conseils de sécurité /
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XA00064F	CE 	II 1 G,	Ex ia	IIC/IIB
XA00154F	CE 	II 1/2 G/D,	Ex ia/ib	IIC/IIB
XA00159F	CE 	II 1 G,	Ex ia	IIC/IIB

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