

# Veiligheidsinstructies

## Liquiphant M, Liquiphant S

### FTL50(H), FTL51(H), FTL51C,

### FTL70/71

ATEX: II 3 G Ex ec IIC Gc  
II 3 G Ex ec nC IIC Gc  
II 3 G Ex ic IIC Gc  
II 3 D Ex tc IIIC Dc






# Liquiphant M, Liquiphant S

## FTL50(H), FTL51(H), FTL51C, FTL70/71

### Inhoudsopgave


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**Over dit document**

 Dit document is in verschillende talen vertaald. Juridisch geldig is alleen de Engelse brontekst.

Het document is vertaald beschikbaar in de EU-talen:

- Via de downloadsectie van de Endress+Hauser-website:  
[www.endress.com](http://www.endress.com) -> Downloads -> Inbedrijfname voorschriften en technische informatiebladen -> Type: Ex Safety Instruction (XA) -> Tekst zoeken: ...
- In de Device Viewer: [www.endress.com](http://www.endress.com) -> Product tools -> Access device specific information -> Check device features

 Indien nog niet beschikbaar, kan het document worden besteld.

**Bijbehorende documentatie**

Dit document is integraal onderdeel van de volgende bedieningshandleiding:

- KA00143F/00, KA00163F/00 (FTL50, FTL51)
- KA00144F/00, KA00164F/00 (FTL50H, FTL51H)
- KA00162F/00, KA00165F/00 (FTL51C)
- KA00172F/00, KA00173F/00 (FTL70, FTL71)

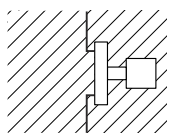
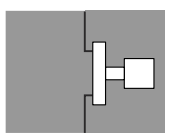
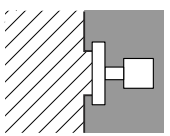
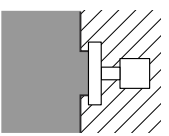
**Aanvullende documentatie**

Brochure explosieveilgheid: CP00021Z/11

De brochure explosieveilgheid is beschikbaar:

- In de download-sectie van de Endress+Hauser website:  
[www.endress.com](http://www.endress.com) -> Downloads -> Brochures en catalogi -> Tekst zoeken: CP00021Z
- Op de CD voor instrumenten met CD-documentatie

**Algemene opmerkingen: gecombineerde goedkeuring**

|   |   |   |   |
|---|---|---|---|
|  |  |  |  |
| Ex ec IIC<br>Ex ec nC IIC<br>Ex ic IIC<br>Zone 2                                    | Ex tc IIIC<br>Zone 22   | Ex ec IIC<br>Ex ic IIC<br>Zone 2  | Ex tc IIIC<br>Zone 22   |
|   |   | Ex tc IIIC<br>Zone 22   | Ex ec IIC<br>Ex ec nC IIC<br>Ex ic IIC<br>Zone 2                                    |

Het instrument is ontworpen voor gebruik in een explosieve gasatmosfeer of exosieve stofatmosfeer zoals wordt getoond in de afbeelding hierboven. In geval van tegelijkertijd optreden van potentieel

explosieve gas-lucht- en stof-lucht-mengsels: geschiktheid vereist nadere beoordeling.



Een opeenvolgende verandering tussen gas- en stofexplosieveilgheid is alleen mogelijk als:

- Er een periode met niet-explosieve atmosfeer aanwezig is gedurende de overgang of
- speciale onderzoeken zijn uitgevoerd die niet worden gedekt door het certificaat

## **Fabriekscertificaten**

### **EG-conformiteitsverklaring**

Certificaatnummer:  
EU\_00959

De EG-conformiteitsverklaring is beschikbaar:  
In de download-sectie van de Endress+Hauser website:  
[www.endress.com](http://www.endress.com) -> Downloads -> Verklaring ->  
Type: EU Declaration -> Productcode: ...

### **EG-typebeproevingcertificaat**

Certificaatnummer:  
EU 00959 X

Lijst met toegepaste normen: zie de EG-conformiteitsverklaring.

## **Adres van de fabrikant**

Endress+Hauser SE+Co. KG  
Hauptstraße 1  
79689 Maulburg, Duitsland

Adres van de productielocatie: zie typeplaat.

## **Andere normen**

Onder andere de volgende normen moeten worden aangehouden in de actuele versie voor een correcte installatie:

- IEC/EN 60079-14: "Explosieve atmosferen - Deel 14: Ontwerp, keuze en opstelling van elektrische installaties"
- EN 1127-1: "Plaatsen waar explosiegevaar kan heersen - Explosiepreventie en - bescherming - Deel 1: Grondbeginselen en methodologie"

## **Uitgebreide bestelcode**

De uitgebreide bestelcode is aangegeven op de typeplaat, welke is zodanig op het instrument is bevestigd dat deze duidelijk zichtbaar is. Aanvullende informatie over de typeplaat is opgenomen in de bijbehorende bedieningshandleiding.

## Structuur van de uitgebreide bestelcode

FTL5x(x), FTL7x – \*\*\*\*\* + A\*B\*C\*D\*E\*F\*G\*..  
 (instrumenttype) (basisspecificaties) (optionele  
 specificaties)

\* = plaatshouder

Op deze positie wordt een optie (cijfer of letter) getoond, die is geselecteerd uit de specificaties in plaats van de plaatshouders.

### Basisspecificaties

De kenmerken die absoluut essentieel zijn voor het instrument (verplichte kenmerken) zijn gespecificeerd in de basisspecificaties. Het aantal posities hangt af van het aantal beschikbare kenmerken. De gekozen optie voor een kenmerk kan uit verschillende posities bestaan.

### Optionele specificaties

De optionele specificaties beschrijven aanvullende kenmerken voor het instrument (optionele kenmerken). Het aantal posities hangt af van het aantal beschikbare kenmerken. De kenmerken hebben 2 posities om de identificatie te vergemakkelijken (bijv. JA). De eerste positie (ID) staat voor de kenmerkgroep en bestaat uit een cijfer of een letter (bijv. J = Test, certificaat). De tweede positie bevat de waarde die staat voor het kenmerk binnen de groep (bijv. A = 3.1 materiaal (natte delen), inspectiecertificaat).

Meer informatie over het instrument is opgenomen in de volgende tabellen. Deze tabellen beschrijven de individuele posities en ID's in de uitgebreide bestelcode welke relevant zijn voor explosiegevaarlijke locaties.

## Uitgebreide bestelcode: Liquiphant M



De volgende specificaties zijn een extract van de productstructuur en worden gebruikt voor toekennen van:

- Deze documentatie aan het instrument (via de uitgebreide bestelcode op de typeplaat).
- De opties van het instrument genoemd in het document.

### Instrumenttype

FTL50, FTL50H, FTL51, FTL51H, FTL51C

*Basisspecificaties*

| <b>Positie 1 (goedkeuring)</b> |                 |  |
|--------------------------------|-----------------|--|
| <b>Gekozen optie</b>           |                 | <b>Beschrijving</b>  |
| FTL50(H)                       | B <sup>1)</sup> | ATEX II 3 G Ex ec nC IIC T6...T3 Gc  |
| FTL51(H)                       |                 | ATEX II 3 D Ex tc IIIC Txxx°C Dc   |
|                                | C <sup>2)</sup> | ATEX II 3 G Ex ec IIC T6...T3 Gc<br>ATEX II 3 G Ex ic IIC T6...T3 Gc<br>ATEX II 3 D Ex tc IIIC Txxx°C Dc |
| FTL51C                         | B <sup>1)</sup> | ATEX II 3 G Ex ec nC IIC T6...T3 Gc  |
|                                | C <sup>2)</sup> | ATEX II 3 G Ex ec IIC T6...T3 Gc<br>ATEX II 3 G Ex ic IIC T6...T3 Gc                                     |

1) Alleen in combinatie met positie 7 = 4

2) Ex ic IIC Gc alleen in combinatie met positie 7 = A, D, 5, 6, 7, 8

| <b>Positie 5, 6 (sondelengte, type)</b> |            |   |
|---|------------|---|
| <b>Gekozen optie</b>                    |            | <b>Beschrijving</b>                       |
| FTL50                                   | AA         | Compact                                   |
|   | IA         | Compact; temp. afstandsstuk               |
|   | QA         | Compact; drukkichte doorvoer              |
| FTL50H                                  | AC, AD     | Compact                                   |
|   | IC, ID     | Compact; temp. afstandsstuk               |
|   | QC, QD     | Compact; drukkichte doorvoer              |
| FTL51                                   | BB, CB, DB | Lengte mm/in; 316L                        |
|   | BE, CE, DE | Lengte mm/in; Alloy                       |
|   | JB, KB, LB | Lengte mm/in; 316L + temp. afstandsstuk   |
|   | JE, KE, LE | Lengte mm/in; Alloy + temp. afstandsstuk  |
|   | RB, SB, TB | Lengte mm/in; 316L + drukkichte doorvoer  |
|   | RE, SE, TE | Lengte mm/in; Alloy + drukkichte doorvoer |

| <b>Positie 5, 6 (sondelengte, type)</b> |                              |                                   |
|---|------------------------------|-----------------------------------|
| <b>Gekozen optie</b>                    |                              | <b>Beschrijving</b>               |
| FTL51H                                  | BC, BD,<br>CC, CD,<br>DC, DD | Lengte mm/in                      |
|   | JC, JD,<br>KC, KD,<br>LC, LD | Lengte mm/in; temp. afstandsstuk  |
|   | RC, RD,<br>SC, SD,<br>TC, TD | Lengte mm/in; drukkichte doorvoer |
| FTL51C                                  | xK                           | ECTFE                             |
|   | xL                           | PFA (Edlon)                       |
|   | xM                           | PFA (RubyRed)                     |
|   | xN                           | PFA (geleidbaar)                  |
|   | xS                           | Emaille                           |

| <b>Positie 7 (elektronica, uitgang)</b> |   |  |
|---|---|--|
| <b>Gekozen optie</b>                    |   | <b>Beschrijving</b>                      |
| FTL50(H)<br>FTL51(H)<br>FTL51C          | A | FEL50A; PROFIBUS PA                      |
|   | D | FEL50D; dichtheid, concentratie          |
|   | 1 | FEL51; 2-draads 19-253 VAC               |
|   | 2 | FEL52; 3-draads PNP 10-55 VDC            |
|   | 4 | FEL54; relais DPDT 19-253 VAC, 19-55 VDC |
|   | 5 | FEL55; 8/16 mA, 11-36 VDC                |
|   | 6 | FEL56; NAMUR                             |
|   | 7 | FEL57; 2-draads PFM                      |
|   | 8 | FEL58; NAMUR + testknop                  |

| Positie 8, 9 (behuizing,abelwartel) |                  |   |
|-------------------------------------|------------------|---|
| Gekozen optie                       |                  | Beschrijving                                  |
| FTL50<br>FTL51                      | x1               | F27; 316L                                     |
| FTL50(H)<br>FTL51(H)                | C3 <sup>1)</sup> | Compact; IP66/68, 316L hygiëne; 5 m kabel     |
|                                     | N3 <sup>1)</sup> | Compact; IP66/68, 316L hygiëne; M12-connector |
|                                     | x5               | F13; aluminium                                |
|                                     | x6               | F15; 316L hygiëne                             |
|                                     | x7               | T13; Alu                                      |
| FTL51C                              | x1               | F27; 316L                                     |
|                                     | x5               | F13; aluminium                                |
|                                     | x6               | F15; 316L hygiëne                             |
|                                     | x7               | T13; Alu                                      |

1) Alleen in combinatie met positie 7 = 2, 8

| Positie 11 (extra optie 2) |   |   |
|----------------------------|---|---|
| Gekozen optie              |   | Beschrijving                              |
| FTL51C                     | A | Niet geselecteerd                         |
|                            | B | Temp. afstandsstuk                        |
|                            | C | 2nd line of defence (drukdichte doorvoer) |

### Optionele specificaties

Er zijn geen opties specifiek voor explosiegevaarlijke locaties beschikbaar.

### Uitgebreide bestelcode: Liquiphant S



De volgende specificaties zijn een extract van de productstructuur en worden gebruikt voor toekennen van:

- Deze documentatie aan het instrument (via de uitgebreide bestelcode op de typeplaat).
- De opties van het instrument genoemd in het document.

### Instrumenttype

FTL70, FTL71

*Basisspecificaties*

| Positie 1 (goedkeuring) |                 |  |
|-------------------------|-----------------|--|
| Gekozen optie           |                 | Beschrijving   |
| FTL7x                   | B <sup>1)</sup> | ATEX II 3 G Ex ec nC IIC T6...T2 Gc<br>ATEX II 3 D Ex tc IIIC Txxx°C Dc                                  |
|                         | C <sup>2)</sup> | ATEX II 3 G Ex ec IIC T6...T2 Gc<br>ATEX II 3 G Ex ic IIC T6...T2 Gc<br>ATEX II 3 D Ex tc IIIC Txxx°C Dc |

- 1) Alleen in combinatie met positie 7 = 4  
 2) Ex ic IIC Gc alleen in combinatie met positie 7 = A, 5, 6, 7, 8

| Positie 5, 6 (sondelengte, type) |        |                     |
|----------------------------------|--------|---------------------|
| Gekozen optie                    |        | Beschrijving        |
| FTL70                            | AB     | Compact; 316L       |
|                                  | AE     | Compact; Alloy      |
| FTL71                            | BB, CB | Lengte mm/in; 316L  |
|                                  | BE, CE | Lengte mm/in; Alloy |

| Positie 7 (elektronica, uitgang) |   |  |
|----------------------------------|---|--|
| Gekozen optie                    |   | Beschrijving                             |
| FTL7x                            | A | FEL50A; PROFIBUS PA                      |
|                                  | 1 | FEL51; 2-draads 19-253 VAC               |
|                                  | 2 | FEL52; 3-draads PNP 10-55 VDC            |
|                                  | 4 | FEL54; relais DPDT 19-253 VAC, 19-55 VDC |
|                                  | 5 | FEL55; 8/16 mA, 11-36 VDC                |
|                                  | 6 | FEL56; NAMUR                             |
|                                  | 7 | FEL57; 2-draads PFM                      |
|                                  | 8 | FEL58; NAMUR + testknop                  |
|                                  | 9 | FEL50D, speciale uitvoering              |

| Positie 8, 9 (behuizing,abelwartel) |    |                   |
|-------------------------------------|----|-------------------|
| Gekozen optie                       |    | Beschrijving      |
| FTL7x                               | x1 | F27; 316L         |
|                                     | x5 | F17; aluminium    |
|                                     | x6 | F15; 316L hygiëne |
|                                     | x7 | T13; Alu          |

| Positie 11 (applicatie) |   |                             |
|-------------------------|---|-----------------------------|
| Gekozen optie           |   | Beschrijving                |
| FTL7x                   | L | 230 °C, gasdichte doorvoer  |
|                         | N | 280 °C, gasdichte doorvoer  |
|                         | Y | 300 °C, speciale uitvoering |

#### Optionele specificaties


Er zijn geen opties specifiek voor explosiegevaarlijke locaties beschikbaar.

#### Veiligheidsinstructies: algemeen

- Het instrument is bedoeld voor gebruik in explosieve atmosferen zoals gedefinieerd in de IEC 60079-0 of equivalente nationale normen. Wanneer geen potentieel explosiegevaarlijke atmosferen aanwezig zijn of wanneer aanvullende beschermingsmaatregelen zijn genomen: het instrument mag worden gebruikt conform de specificaties van de fabrikant.
- Het personeel moet aan de volgende voorwaarden voldoen voor het monteren, elektrische installeren, in bedrijf nemen en onderhouden van het instrument:
  - Voldoende gekwalificeerd zijn voor de rol die zij hebben en de taken die zij moeten uitvoeren
  - Getraind zijn in explosiebeveiliging
  - Bekend zijn met de nationale regelgeving
- Installeer het instrument conform de instructies van de fabrikant en de nationale regelgeving.
- Gebruik het instrument niet buiten de elektrische, thermische en mechanische specificaties.
- Gebruik het instrument alleen in media waar de materialen die in aanraking komen met die media, voldoende tegen bestand zijn.

- Zie de temperatuurtabellen voor de relatie tussen de toegestane omgevingstemperatuur van de sensor en/of transmitter, afhankelijk van het applicatiebereik en de temperatuurklasse.
- Vermijd elektrostatische oplading:
  - Van kunststof oppervlakken (bijv. behuizing, sensorelement, speciale coating, bevestigde extra platen, ...)
  - Van geïsoleerde capaciteiten (bijv. geïsoleerde metalen platen)
- Wijzigingen aan het instrument kunnen de explosieveiligheid beïnvloeden en mogen alleen worden uitgevoerd door personeel dat voor dergelijke werkzaamheden is geautoriseerd door Endress+Hauser.

### **Veiligheidsinstructies: speciale voorwaarden**

- Begrenzungen van de maximale omgevingstemperatuur bij de elektroniecbehuizing kunnen nodig zijn afhankelijk van de instrumentconfiguratie, procestemperaturen en temperatuurclassificatie.
- Details begrenzingen: →  16, "Temperatuurtabellen".
- Indien de procesaansluitingen van polymeer materiaal zijn gemaakt of zijn voorzien van polymere coating, moet elektrostatische oplading van de kunststof oppervlakken worden voorkomen.
- Om elektrostatische oplading te vermijden: wrijf niet met een droge doek over de oppervlakken.
- In geval van een extra of alternatieve speciale afwerking op de behuizing of andere metalen delen of voor lijmplaten:
  - Let op het gevaar van elektrostatische oplading en ontlading.
  - Niet installeren in de nabijheid van processen ( $\leq 0,5$  m) die krachtige elektrostatische ladingen genereren.

*Basisspecificatie, positie 7 = 1, 4 en basisspecificatie, positie 8, 9 = x1, x5, x6, x7*

- In een condenserende atmosfeer: geen onderhouds- of installatiewerkzaamheden aan het instrument uitvoeren.
- Het instrument moet extern worden beveiligd tegen overspanningen tot 140% van de maximale spanning.

*Basisspecificatie, positie 8, 9 = x5, x6, x7*

Voorkom vonken veroorzaakt door botsingen en wrijving.

*Instrumenttype FTL50(H), FTL51(H)*

*Basisspecificatie, positie 8, 9 = C3*

De kabelwartels zijn getest met een laag risico op mechanisch gevaar (valhoogte 0,4 m met 1 kg massa) en moeten worden gemonteerd in een beschermde positie wanneer grotere botsingsenergieën kunnen worden verwacht.

*Basisspecificatie, positie 8, 9 = C3, N3*

- De behuizingen hebben geen externe potentiaalvereffeningsklem. Daarom moet de veilige aardverbinding van de instrumenten worden gewaarborgd via de geel-groene ader (C3) van de kabel of via de metalen procesaansluiting (C3 of N3) van het instrument.
- Maak geen elektrische aansluitingen los die onder spanning staan.

*Instrumenttype FTL51C*

*Basisspecificatie, positie 5, 6 = xK, xL, xM  
(isolerende kunststof bekleding)*

Het instrument is alleen toegestaan voor gas.

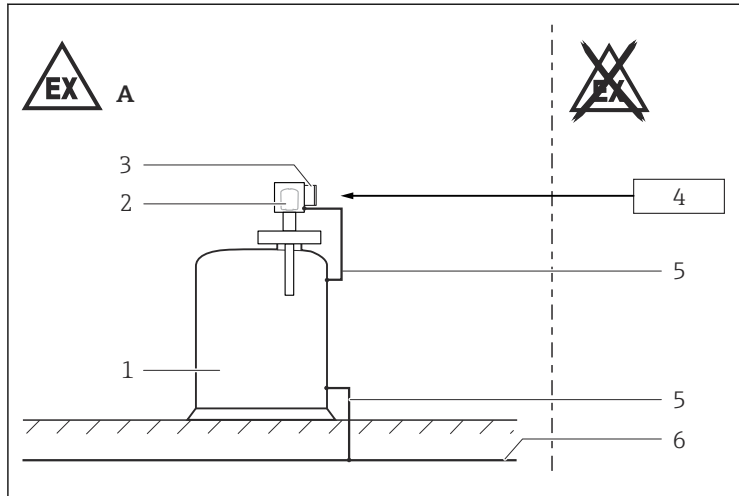
### **Apparaatgroep IIC**

Een sonde bekleed met niet-geleidend materiaal kan worden gebruikt wanneer elektrostatische oplading wordt voorkomen (bijv. door wrijving, reiniging, onderhoud, krachtige mediumstroom).

### **Apparaatgroep IIB**

Er kan een elektrode bekleed met niet-geleidend materiaal worden gebruikt.

## Veiligheidsinstructies: installatie



A0025537

### 1

- A Zone 2, zone 22
- 1 Tank; zone 2, zone 22
- 2 Elektronicomodule; elektronikacompartiment
- 3 Aansluitcompartiment Ex ec (alleen basisspecificatie, positie 8, 9 = x7)
- 4 Voedingsspanning of voedingseenheid
- 5 Potentiaalvereffening
- 6 Potentiaalvereffening

- Houd de volgende instructies aan om de beschermingsklasse IP66/67 of IP66/68 te bereiken:
  - Schroef het deksel dicht.
  - Monteer de kabelwartel correct.
- Houd de maximale procesomstandigheden aan conform de bedieningshandleiding van de fabrikant.
- Let bij hoge mediumtemperaturen, op de toegestane flensdrukbelasting als factor van de temperatuur.
- Installeer het instrument zodanig, dat geen mechanische schade of krachten optreden tijdens bedrijf. Let met name op de stromingsomstandigheden en de tankfittingen.
- Ondersteun de verlengbuis van het instrument wanneer dynamische belasting kan worden verwacht.
- Gebruik alleen gecertificeerde kabelinvoeren die geschikt zijn voor de applicatie. Houd de nationale regelgeving en normen aan.

- Bij gebruik van de transmitterbehuizing bij omgevingstemperaturen onder  $-20\text{ }^{\circ}\text{C}$ , moeten geschikte kabels en kabelwartels worden gebruikt, die zijn goedgekeurd voor deze toepassing.
- Dicht niet gebruikte wartels af met passende afdichtingen die corresponderen met de betreffende beschermingsklasse. De kunststof transportplug voldoet niet aan deze eisen en moet tijdens de installatie worden vervangen.
- Voor het bedrijf:
  - Schroef het deksel helemaal vast.
  - Zet de borgklem van het deksel vast.

#### *Basisspecificatie, positie 1 = B*

Constante bedrijfstemperatuur van de verbindingkabel:  $-50\text{ }^{\circ}\text{C}$  tot  $\geq +115\text{ }^{\circ}\text{C}$ ; conform het bedrijfstemperatuurbereik rekening houdend met externe invloeden van de procesomstandigheden ( $T_{a,\min}$ ), ( $T_{a,\max} + 45\text{ K}$ ).

#### *Basisspecificatie, positie 1 = C (alleen Ex ec, Ex ic)*

Constante bedrijfstemperatuur van de verbindingkabel:  $-50\text{ }^{\circ}\text{C}$  tot  $\geq +85\text{ }^{\circ}\text{C}$ ; conform het bedrijfstemperatuurbereik rekening houdend met externe invloeden van de procesomstandigheden ( $T_{a,\min}$ ), ( $T_{a,\max} + 15\text{ K}$ ).

#### *Ex ec, Ex ec nC, Ex tc*

In potentieel explosieve atmosferen:

- Ontkoppel de elektrische aansluiting van de voedingsspanning niet wanneer deze onder spanning staat.
- Open het deksel van het aansluitcompartiment en het deksel van het elektronicacompartiment niet wanneer deze onder spanning staan.

### **Accessoire hogedrukschuifmof**

De hogedrukschuifmof kan worden gebruikt voor de permanente instelling van het schakelpunt (zie de bedieningshandleiding).

### **Niet vonkend**

#### *Ex ec, Ex ec nC, Ex tc*

In potentieel explosiegevaarlijke atmosferen: maak geen elektrische aansluitingen los die onder spanning staan.

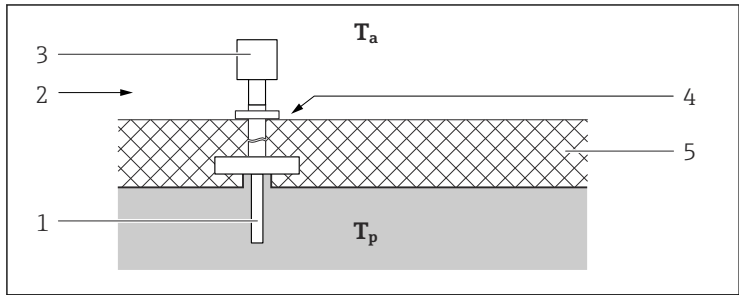
### **Potentiaalvereffening**

Integreer het instrument in de lokale potentiaalvereffening.

## Explosiebeveiliging met thermische isolatie

*Instrumenttype FTL70, FTL71, basisspecificatie, positie 11 = L, N, Y*

- Onder aanhouding van de "temperatuur-derating", is het instrument geschikt voor procestemperaturen tot 300 °C.
- Waarborg bij de bediening, dat er geen contact ontstaat tussen hete componentoppervlakken en potentieel explosieve atmosferen buiten de grenswaarden van de bijbehorende temperatuurklasse. Geschikte maatregelen: bijv. thermische isolatie van tank en/of leidingen.
- De temperatuur 85 °C gespecificeerd op het referentiepunt mag niet worden overschreden.
- Houd de gespecificeerde omgevingstemperatuur op de elektronicabehuizing aan om de elektronica te beschermen.



A0025541

2

- $T_a$  Omgevingstemperatuur  
 $T_p$  Procestemperatuur  
 1 Sensor  
 2 Temperatuurklasse, bijv. T6  
 3 Behuizing  
 4 Referentiepunt: max. +85 °C  
 5 Bijv. thermische isolatie

## Temperatuurtabellen

### Beschrijving



Mits anders gespecificeerd, zijn de posities altijd gerelateerd aan de basisspecificatie.

### Zone 2

1e lijn: positie 8, 9 = x1, x5, ...

*Instrumenttype FTL50, FTL50H, FTL51, FTL51H*

1e kolom: positie 5, 6 = Ax, Bx, ...

*Instrumenttype FTL51C, FTL70, FTL71*

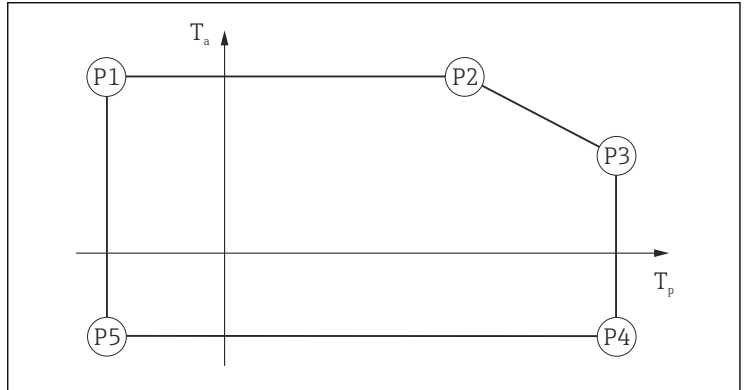
1e kolom: positie 11 = A, B, ...

2e kolom: maximale belastingsstroom

3e kolom: temperatuurklassen T6 (85 °C) tot T1 (450 °C)

Kolom P1 tot P5: positie (temperatuurwaarden) op de assen van de derating

- $T_a$ : omgevingstemperatuur in °C
- $T_p$ : procestemperatuur in °C



A0033052

**Zone 22**

Instrumenttype *FTL50, FTL50H, FTL51, FTL51H*

1e kolom: positie 5, 6 = Ax, Bx, ...

Instrumenttype *FTL51C, FTL70, FTL71*

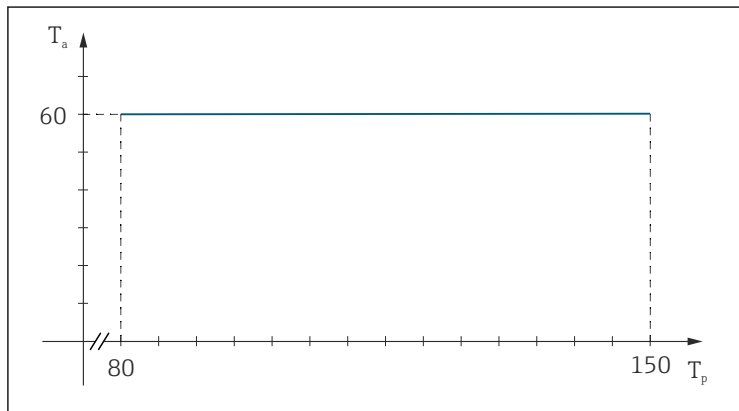
1e kolom: positie 11 = A, B, ...

2e kolom: maximale belastingsstroom

3e kolom: procestemperatuurbereik in °C

4e kolom: omgevingstemperatuurbereik in °C

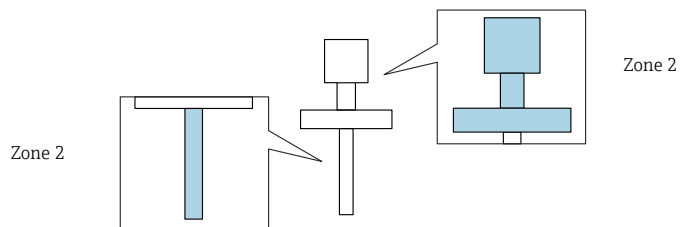
5e kolom: maximale oppervlaktetemperatuur in °C



A0039764

$T_a$  Omgevingstemperatuur in °C

$T_p$  Procestemperatuur in °C

**Zone 2**

**Ex ec IIC***Instrumenttype FTL50, FTL50H, FTL51, FTL51H*

Positie 7 = 1

|   |               | = x1, x5, x6, x7 |                |                |                |                |                |                |                |                |                |     |  |
|---|---------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|--|
|   |               | P1               |                | P2             |                | P3             |                | P4             |                | P5             |                |     |  |
|   |               | T <sub>p</sub>   | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |     |  |
| FTL50, FTL50H:<br>Ax<br>FTL51, FTL51H:<br>Bx, Cx, Dx                    | <b>180 mA</b> |                  |                |                |                |                |                |                |                |                |                |     |  |
|   |               | T6               | -50            | 52             | 53             | 52             | 80             | 40             | 80             | -40            | -50            | -40 |  |
|   |               | T5               | -50            | 67             | 68             | 67             | 95             | 55             | 95             | -40            | -50            | -40 |  |
|   |               | T4               | -50            | 70             | 78             | 70             | 130            | 47             | 130            | -40            | -50            | -40 |  |
|   |               | T3...T1          | -50            | 70             | 78             | 70             | 150            | 38             | 150            | -40            | -50            | -40 |  |
| FTL50, FTL50H:<br>Ix, Qx<br>FTL51, FTL51H:<br>Jx, Kx, Lx, Rx, Sx,<br>Tx | <b>180 mA</b> |                  |                |                |                |                |                |                |                |                |                |     |  |
|   |               | T6               | -50            | 52             | 58             | 52             | 80             | 50             | 80             | -40            | -50            | -40 |  |
|   |               | T5               | -50            | 67             | 73             | 67             | 95             | 65             | 95             | -40            | -50            | -40 |  |
|   |               | T4               | -50            | 70             | 104            | 70             | 130            | 67             | 130            | -40            | -50            | -40 |  |
|   |               | T3...T1          | -50            | 70             | 104            | 70             | 150            | 65             | 150            | -40            | -50            | -40 |  |
|   | <b>350 mA</b> |                  |                |                |                |                |                |                |                |                |                |     |  |
|   |               | T6               | -50            | 43             | 54             | 43             | 80             | 40             | 80             | -40            | -50            | -40 |  |
|   |               | T5               | -50            | 58             | 69             | 58             | 95             | 55             | 95             | -40            | -50            | -40 |  |
|   |               | T4               | -50            | 70             | 77             | 70             | 130            | 65             | 130            | -40            | -50            | -40 |  |
|   |               | T3...T1          | -50            | 70             | 77             | 70             | 150            | 63             | 150            | -40            | -50            | -40 |  |

## Positie 7 = 2

|   |               | = x1, C3, N3, x5, x6, x7 |                |                |                |                |                |                |                |                          |                |                          |
|---|---------------|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|
|   |               | P1                       |                | P2             |                | P3             |                | P4             |                | P5                       |                |                          |
|   |               | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> |                          |
| FTL50, FTL50H:<br>Ax<br>FTL51, FTL51H:<br>Bx, Cx, Dx                    | <b>350 mA</b> |                          |                |                |                |                |                |                |                |                          |                |                          |
|   |               | T6                       | -50            | 70             | 70             | 70             | 80             | 70             | 80             | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |
|   |               | T5                       | -50            | 70             | 70             | 70             | 95             | 70             | 95             | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |
|   |               | T4                       | -50            | 70             | 70             | 70             | 130            | 55             | 130            | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |
|   |               | T3...T1                  | -50            | 70             | 70             | 70             | 150            | 45             | 150            | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |
| FTL50, FTL50H:<br>Ix, Qx<br>FTL51, FTL51H:<br>Jx, Kx, Lx, Rx, Sx,<br>Tx | <b>350 mA</b> |                          |                |                |                |                |                |                |                |                          |                |                          |
|   |               | T6                       | -50            | 70             | 70             | 70             | 80             | 70             | 80             | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |
|   |               | T5                       | -50            | 70             | 70             | 70             | 95             | 70             | 95             | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |
|   |               | T4                       | -50            | 70             | 70             | 70             | 130            | 70             | 130            | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |
|   |               | T3...T1                  | -50            | 70             | 70             | 70             | 150            | 70             | 150            | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |

1) Alleen in combinatie met positie 8, 9 = C3, N3

## Positie 7 = 5, 6, 7

|   |         | P1             |                | P2             |                | P3             |                | P4             |                | P5             |                |
|---|---------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|   |         | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
| FTL50, FTL50H:<br>Ax, lx, Qx<br>FTL51, FTL51H:<br>Bx, Cx, Dx, Jx,<br>Kx, Lx, Rx, Sx, Tx |         |                |                |                |                |                |                |                |                |                |                |
|   | T6      | -50            | 70             | 70             | 70             | 80             | 70             | 80             | -40            | -50            | -40            |
|   | T5      | -50            | 70             | 70             | 70             | 95             | 70             | 95             | -40            | -50            | -40            |
|   | T4      | -50            | 70             | 70             | 70             | 130            | 70             | 130            | -40            | -50            | -40            |
|   | T3...T1 | -50            | 70             | 70             | 70             | 150            | 70             | 150            | -40            | -50            | -40            |

## Positie 7 = 8

|   |         | P1             |                | P2             |                | P3             |                | P4             |                          | P5             |                          |
|---|---------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|
|   |         | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           |
| FTL50, FTL50H:<br>Ax, lx, Qx<br>FTL51, FTL51H:<br>Bx, Cx, Dx, Jx,<br>Kx, Lx, Rx, Sx, Tx |         |                |                |                |                |                |                |                |                          |                |                          |
|   | T6      | -50            | 70             | 70             | 70             | 80             | 70             | 80             | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |
|   | T5      | -50            | 70             | 70             | 70             | 95             | 70             | 95             | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |
|   | T4      | -50            | 70             | 70             | 70             | 130            | 70             | 130            | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |
|   | T3...T1 | -50            | 70             | 70             | 70             | 150            | 70             | 150            | -40<br>-25 <sup>1)</sup> | -50            | -40<br>-25 <sup>1)</sup> |

1) Alleen in combinatie met positie 8, 9 = C3, N3

## Positie 7 = A

|   |  | = x1, x5, x6, x7 |                |                |                |                |                |                |                |                |                |     |
|---|--|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
|   |  | P1               |                | P2             |                | P3             |                | P4             |                | P5             |                |     |
|   |  | T <sub>p</sub>   | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |     |
| FTL50, FTL50H:<br>Ax, Ix, Qx<br>FTL51, FTL51H:<br>Bx, Cx, Dx, Jx,<br>Kx, Lx, Rx, Sx, Tx |  |                  |                |                |                |                |                |                |                |                |                |     |
|   |  | T6               | -50            | 60             | 70             | 60             | 80             | 60             | 80             | -40            | -50            | -40 |
|   |  | T5               | -50            | 60             | 70             | 60             | 95             | 60             | 95             | -40            | -50            | -40 |
|   |  | T4               | -50            | 60             | 70             | 60             | 130            | 60             | 130            | -40            | -50            | -40 |
|   |  | T3...T1          | -50            | 60             | 70             | 60             | 150            | 60             | 150            | -40            | -50            | -40 |

## Positie 7 = D

|   |  | = x1, x5, x6, x7 |                |                |                |                |                |                |                |                |                |     |
|---|--|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
|   |  | P1               |                | P2             |                | P3             |                | P4             |                | P5             |                |     |
|   |  | T <sub>p</sub>   | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |     |
| FTL50, FTL50H:<br>Ax, Ix, Qx<br>FTL51, FTL51H:<br>Bx, Cx, Dx, Jx,<br>Kx, Lx, Rx, Sx, Tx |  |                  |                |                |                |                |                |                |                |                |                |     |
|   |  | T6...T1          | -50            | 60             | 70             | 60             | 80             | 60             | 80             | -40            | -50            | -40 |

## Instrumenttype FTL51C

Positie 7 = 1

|      |        | = x1, x5, x6, x7 |                |                |                |                |                          |                |                          |                |                |     |
|------|--------|------------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|-----|
|      |        | P1               |                | P2             |                | P3             |                          | P4             |                          | P5             |                |     |
|      |        | T <sub>p</sub>   | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub> |     |
| A    | 180 mA |                  |                |                |                |                |                          |                |                          |                |                |     |
|      |        | T6               | -50            | 52             | 53             | 52             | 80                       | 40             | 80                       | -40            | -50            | -40 |
|      |        | T5               | -50            | 67             | 68             | 67             | 95                       | 55             | 95                       | -40            | -50            | -40 |
|      |        | T4               | -50            | 70             | 78             | 70             | 130<br>120 <sup>1)</sup> | 47             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40 |
|      |        | T3...T1          | -50            | 70             | 78             | 70             | 150<br>120 <sup>1)</sup> | 38             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40 |
| B, C | 180 mA |                  |                |                |                |                |                          |                |                          |                |                |     |
|      |        | T6               | -50            | 52             | 58             | 52             | 80                       | 50             | 80                       | -40            | -50            | -40 |
|      |        | T5               | -50            | 67             | 73             | 67             | 95                       | 65             | 95                       | -40            | -50            | -40 |
|      |        | T4               | -50            | 70             | 104            | 70             | 130<br>120 <sup>1)</sup> | 67             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40 |
|      |        | T3...T1          | -50            | 70             | 104            | 70             | 150<br>120 <sup>1)</sup> | 65             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40 |
|      | 350 mA |                  |                |                |                |                |                          |                |                          |                |                |     |
|      |        | T6               | -50            | 43             | 54             | 43             | 80                       | 40             | 80                       | -40            | -50            | -40 |
|      |        | T5               | -50            | 58             | 69             | 58             | 95                       | 55             | 95                       | -40            | -50            | -40 |
|      |        | T4               | -50            | 70             | 77             | 70             | 130<br>120 <sup>1)</sup> | 65             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40 |
|      |        | T3...T1          | -50            | 70             | 77             | 70             | 150<br>120 <sup>1)</sup> | 63             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40 |

1) Alleen in combinatie met positie 5, 6 = xK

## Positie 7 = 2

|      |        | = x1, x5, x6, x7 |                |                |                |                |                          |                |                          |                |                |                |
|------|--------|------------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|----------------|
|      |        |                  | P1             |                | P2             |                | P3                       |                | P4                       |                | P5             |                |
|      |        |                  | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
| A    | 350 mA |                  |                |                |                |                |                          |                |                          |                |                |                |
|      |        | T6               | -50            | 70             | 70             | 70             | 80                       | 70             | 80                       | -40            | -50            | -40            |
|      |        | T5               | -50            | 70             | 70             | 70             | 95                       | 70             | 95                       | -40            | -50            | -40            |
|      |        | T4               | -50            | 70             | 70             | 70             | 130<br>120 <sup>1)</sup> | 55             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40            |
|      |        | T3...T1          | -50            | 70             | 70             | 70             | 150<br>120 <sup>1)</sup> | 45             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40            |
| B, C | 350 mA |                  |                |                |                |                |                          |                |                          |                |                |                |
|      |        | T6               | -50            | 70             | 70             | 70             | 80                       | 70             | 80                       | -40            | -50            | -40            |
|      |        | T5               | -50            | 70             | 70             | 70             | 95                       | 70             | 95                       | -40            | -50            | -40            |
|      |        | T4               | -50            | 70             | 70             | 70             | 130<br>120 <sup>1)</sup> | 70             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40            |
|      |        | T3...T1          | -50            | 70             | 70             | 70             | 150<br>120 <sup>1)</sup> | 70             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40            |

1) Alleen in combinatie met positie 5, 6 = xK

## Positie 7 = 5, 6, 7

|         |  | = x1, x5, x6, x7 |                |                |                |                |                          |                |                          |                |                |     |
|---------|--|------------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|-----|
|         |  | P1               |                | P2             |                | P3             |                          | P4             |                          | P5             |                |     |
|         |  | T <sub>p</sub>   | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub> |     |
| A, B, C |  |                  |                |                |                |                |                          |                |                          |                |                |     |
|         |  | T6               | -50            | 70             | 70             | 70             | 80                       | 70             | 80                       | -40            | -50            | -40 |
|         |  | T5               | -50            | 70             | 70             | 70             | 95                       | 70             | 95                       | -40            | -50            | -40 |
|         |  | T4               | -50            | 70             | 70             | 70             | 130<br>120 <sup>1)</sup> | 70             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40 |
|         |  | T3...T1          | -50            | 70             | 70             | 70             | 150<br>120 <sup>1)</sup> | 70             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40 |

1) Alleen in combinatie met positie 5, 6 = xK

## Positie 7 = 8

|         |  | = x1, x5, x6, x7 |                |                |                |                |                          |                |                          |                |                |     |
|---------|--|------------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|-----|
|         |  | P1               |                | P2             |                | P3             |                          | P4             |                          | P5             |                |     |
|         |  | T <sub>p</sub>   | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub> |     |
| A, B, C |  |                  |                |                |                |                |                          |                |                          |                |                |     |
|         |  | T6               | -50            | 70             | 70             | 70             | 80                       | 70             | 80                       | -40            | -50            | -40 |
|         |  | T5               | -50            | 70             | 70             | 70             | 95                       | 70             | 95                       | -40            | -50            | -40 |
|         |  | T4               | -50            | 70             | 70             | 70             | 130<br>120 <sup>1)</sup> | 70             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40 |
|         |  | T3...T1          | -50            | 70             | 70             | 70             | 150<br>120 <sup>1)</sup> | 70             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40 |

1) Alleen in combinatie met positie 5, 6 = xK

## Positie 7 = A

|         |  |         | P1             |                | P2             |                | P3                       |                | P4                       |                | P5             |                |
|---------|--|---------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|----------------|
|         |  |         | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
| A, B, C |  |         |                |                |                |                |                          |                |                          |                |                |                |
|         |  | T6      | -50            | 60             | 70             | 60             | 80                       | 60             | 80                       | -40            | -50            | -40            |
|         |  | T5      | -50            | 60             | 70             | 60             | 95                       | 60             | 95                       | -40            | -50            | -40            |
|         |  | T4      | -50            | 60             | 70             | 60             | 130<br>120 <sup>1)</sup> | 60             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40            |
|         |  | T3...T1 | -50            | 60             | 70             | 60             | 150<br>120 <sup>1)</sup> | 60             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40            |

1) Alleen in combinatie met positie 5, 6 = xK

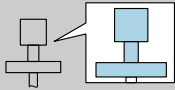
## Positie 7 = D

|         |  |         | P1             |                | P2             |                | P3             |                | P4             |                | P5             |                |
|---------|--|---------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|         |  |         | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
| A, B, C |  |         |                |                |                |                |                |                |                |                |                |                |
|         |  | T6...T1 | -50            | 60             | 70             | 60             | 80             | 60             | 80             | -40            | -50            | -40            |

## Instrumenttype FTL70, FTL71

Positie 7 = 1

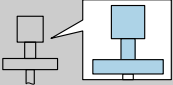
|   |               | = x1, x5, x6 |                |                |                |                |                |                |                |                |                |                |
|---|---------------|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| L |               |              | P1             |                | P2             |                | P3             |                | P4             |                | P5             |                |
|   |               |              | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
|   | <b>180 mA</b> |              |                |                |                |                |                |                |                |                |                |                |
|   |               | T6           | -60            | 52             | 60             | 52             | 80             | 50             | 80             | -40            | -60            | -40            |
|   |               | T5           | -60            | 67             | 75             | 67             | 95             | 65             | 95             | -40            | -60            | -40            |
|   |               | T4           | -60            | 70             | 118            | 70             | 130            | 69             | 130            | -40            | -60            | -40            |
|   |               | T3           | -60            | 70             | 118            | 70             | 195            | 64             | 195            | -40            | -60            | -40            |
|   |               | T2...T1      | -60            | 70             | 118            | 70             | 230            | 61             | 230            | -40            | -60            | -40            |
|   | <b>350 mA</b> |              |                |                |                |                |                |                |                |                |                |                |
|   |               | T6           | -60            | 43             | 58             | 43             | 80             | 41             | 80             | -40            | -60            | -40            |
|   |               | T5           | -60            | 58             | 73             | 58             | 95             | 56             | 95             | -40            | -60            | -40            |
|   |               | T4           | -60            | 70             | 80             | 70             | 130            | 67             | 130            | -40            | -60            | -40            |
|   |               | T3           | -60            | 70             | 80             | 70             | 195            | 63             | 195            | -40            | -60            | -40            |
|   |               | T2...T1      | -60            | 70             | 80             | 70             | 230            | 59             | 230            | -40            | -60            | -40            |



= x1, x5, x6

| N, Y | 180 mA        |    | P1             |                | P2             |                | P3                       |                | P4                       |                | P5             |                |
|------|---------------|----|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|----------------|
|      |               |    | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
|      |               |    |                |                |                |                |                          |                |                          |                |                |                |
|      |               | T6 | -60            | 52             | 64             | 52             | 80                       | 51             | 80                       | -40            | -60            | -40            |
|      |               | T5 | -60            | 67             | 79             | 67             | 95                       | 66             | 95                       | -40            | -60            | -40            |
|      |               | T4 | -60            | 70             | 130            | 70             | 130                      | 70             | 130                      | -40            | -60            | -40            |
|      |               | T3 | -60            | 70             | 139            | 70             | 195                      | 67             | 195                      | -40            | -60            | -40            |
|      |               | T2 | -60            | 70             | 139            | 70             | 280<br>290 <sup>1)</sup> | 63             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40            |
|      |               | T1 | -60            | 70             | 139            | 70             | 280<br>300 <sup>1)</sup> | 63             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40            |
|      | <b>350 mA</b> |    |                |                |                |                |                          |                |                          |                |                |                |
|      |               | T6 | -60            | 43             | 66             | 43             | 80                       | 42             | 80                       | -40            | -60            | -40            |
|      |               | T5 | -60            | 58             | 80             | 58             | 95                       | 57             | 95                       | -40            | -60            | -40            |
|      |               | T4 | -60            | 70             | 85             | 70             | 130                      | 68             | 130                      | -40            | -60            | -40            |
|      |               | T3 | -60            | 70             | 85             | 70             | 195                      | 65             | 195                      | -40            | -60            | -40            |
|      |               | T2 | -60            | 70             | 85             | 70             | 280<br>290 <sup>1)</sup> | 61             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40            |
|      |               | T1 | -60            | 70             | 85             | 70             | 280<br>300 <sup>1)</sup> | 60             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40            |

1) Alleen in combinatie met positie 11 = Y

| <br>= x7 |               |         |                |                |                |                |                |                |                |                |                |                |
|---|---------------|---------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|   |               |         | P1             |                | P2             |                | P3             |                | P4             |                | P5             |                |
|   |               |         | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
| <i>L</i>  | <b>180 mA</b> |         |                |                |                |                |                |                |                |                |                |                |
|   |               | T6      | -60            | 55             | 61             | 55             | 80             | 54             | 80             | -40            | -60            | -40            |
|   |               | T5      | -60            | 70             | 76             | 70             | 95             | 69             | 95             | -40            | -60            | -40            |
|   |               | T4      | -60            | 70             | 130            | 70             | 130            | 70             | 130            | -40            | -60            | -40            |
|   |               | T3      | -60            | 70             | 176            | 70             | 195            | 69             | 195            | -40            | -60            | -40            |
|   |               | T2...T1 | -60            | 70             | 176            | 70             | 230            | 67             | 230            | -40            | -60            | -40            |
|   | <b>350 mA</b> |         |                |                |                |                |                |                |                |                |                |                |
|   |               | T6      | -60            | 45             | 66             | 45             | 80             | 44             | 80             | -40            | -60            | -40            |
|   |               | T5      | -60            | 60             | 81             | 60             | 95             | 59             | 95             | -40            | -60            | -40            |
|   |               | T4      | -60            | 70             | 124            | 70             | 130            | 69             | 130            | -40            | -60            | -40            |
|   |               | T3      | -60            | 70             | 124            | 70             | 195            | 66             | 195            | -40            | -60            | -40            |
|   |               | T2...T1 | -60            | 70             | 124            | 70             | 230            | 65             | 230            | -40            | -60            | -40            |

|      |               | = x7           |                |                |                |                |                          |                |                          |                |                |     |
|------|---------------|----------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|-----|
|      |               | P1             |                | P2             |                | P3             |                          | P4             |                          | P5             |                |     |
|      |               | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub> |     |
| N, Y | <b>180 mA</b> |                |                |                |                |                |                          |                |                          |                |                |     |
|      |               | T6             | -60            | 55             | 62             | 55             | 80                       | 54             | 80                       | -40            | -60            | -40 |
|      |               | T5             | -60            | 70             | 77             | 70             | 95                       | 69             | 95                       | -40            | -60            | -40 |
|      |               | T4             | -60            | 70             | 130            | 70             | 130                      | 70             | 130                      | -40            | -60            | -40 |
|      |               | T3             | -60            | 70             | 195            | 70             | 195                      | 70             | 195                      | -40            | -60            | -40 |
|      |               | T2             | -60            | 70             | 208            | 70             | 280<br>290 <sup>1)</sup> | 67             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40 |
|      |               | T1             | -60            | 70             | 208            | 70             | 280<br>300 <sup>1)</sup> | 66             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40 |
|      | <b>350 mA</b> |                |                |                |                |                |                          |                |                          |                |                |     |
|      |               | T6             | -60            | 45             | 73             | 45             | 80                       | 44             | 80                       | -40            | -60            | -40 |
|      |               | T5             | -60            | 60             | 88             | 60             | 95                       | 59             | 95                       | -40            | -60            | -40 |
|      |               | T4             | -60            | 70             | 130            | 70             | 130                      | 70             | 130                      | -40            | -60            | -40 |
|      |               | T3             | -60            | 70             | 142            | 70             | 195                      | 68             | 195                      | -40            | -60            | -40 |
|      |               | T2             | -60            | 70             | 142            | 70             | 280<br>290 <sup>1)</sup> | 65             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40 |
|      |               | T1             | -60            | 70             | 142            | 70             | 280<br>300 <sup>1)</sup> | 64             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40 |

1) Alleen in combinatie met positie 11 = Y

## Positie 7 = 2

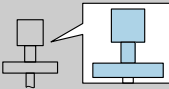
|             |               | = x1, x5, x6   |                |                |                |                |                          |                |                          |                |                |     |
|-------------|---------------|----------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|-----|
|             |               | P1             |                | P2             |                | P3             |                          | P4             |                          | P5             |                |     |
|             |               | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub> |     |
| <b>L</b>    | <b>350 mA</b> |                |                |                |                |                |                          |                |                          |                |                |     |
|             |               | T6             | -60            | 52             | 65             | 52             | 80                       | 51             | 80                       | -40            | -60            | -40 |
|             |               | T5             | -60            | 67             | 80             | 67             | 95                       | 66             | 95                       | -40            | -60            | -40 |
|             |               | T4             | -60            | 67             | 82             | 67             | 130                      | 64             | 130                      | -40            | -60            | -40 |
|             |               | T3             | -60            | 67             | 82             | 67             | 195                      | 60             | 195                      | -40            | -60            | -40 |
|             |               | T2...T1        | -60            | 67             | 82             | 67             | 230                      | 58             | 230                      | -40            | -60            | -40 |
| <b>N, Y</b> | <b>350 mA</b> |                |                |                |                |                |                          |                |                          |                |                |     |
|             |               | T6             | -60            | 52             | 71             | 52             | 80                       | 51             | 80                       | -40            | -60            | -40 |
|             |               | T5             | -60            | 67             | 86             | 67             | 95                       | 66             | 95                       | -40            | -60            | -40 |
|             |               | T4             | -60            | 67             | 87             | 67             | 130                      | 65             | 130                      | -40            | -60            | -40 |
|             |               | T3             | -60            | 67             | 87             | 67             | 195                      | 62             | 195                      | -40            | -60            | -40 |
|             |               | T2             | -60            | 67             | 87             | 67             | 280<br>290 <sup>1)</sup> | 58             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40 |
|             |               | T1             | -60            | 67             | 87             | 67             | 280<br>300 <sup>1)</sup> | 58             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40 |

1) Alleen in combinatie met positie 11 = Y

|             |               | = x7           |                |                |                |                |                          |                |                          |                |                |     |
|-------------|---------------|----------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|-----|
|             |               | P1             |                | P2             |                | P3             |                          | P4             |                          | P5             |                |     |
|             |               | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub> |     |
| <b>L</b>    | <b>350 mA</b> |                |                |                |                |                |                          |                |                          |                |                |     |
|             |               | T6             | -60            | 55             | 55             | 55             | 80                       | 53             | 80                       | -40            | -60            | -40 |
|             |               | T5             | -60            | 70             | 70             | 70             | 95                       | 68             | 95                       | -40            | -60            | -40 |
|             |               | T4             | -60            | 70             | 130            | 70             | 130                      | 70             | 130                      | -40            | -60            | -40 |
|             |               | T3             | -60            | 70             | 133            | 70             | 195                      | 67             | 195                      | -40            | -60            | -40 |
|             |               | T2...T1        | -60            | 70             | 133            | 70             | 230                      | 65             | 230                      | -40            | -60            | -40 |
| <b>N, Y</b> | <b>350 mA</b> |                |                |                |                |                |                          |                |                          |                |                |     |
|             |               | T6             | -60            | 55             | 56             | 55             | 80                       | 54             | 80                       | -40            | -60            | -40 |
|             |               | T5             | -60            | 70             | 71             | 70             | 95                       | 69             | 95                       | -40            | -60            | -40 |
|             |               | T4             | -60            | 70             | 130            | 70             | 130                      | 70             | 130                      | -40            | -60            | -40 |
|             |               | T3             | -60            | 70             | 154            | 70             | 195                      | 68             | 195                      | -40            | -60            | -40 |
|             |               | T2             | -60            | 70             | 154            | 70             | 280<br>290 <sup>1)</sup> | 65             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40 |
|             |               | T1             | -60            | 70             | 154            | 70             | 280<br>300 <sup>1)</sup> | 65             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40 |

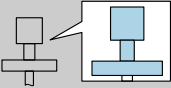
1) Alleen in combinatie met positie 11 = Y

Positie 7 = 5, 6, 7, 8

|  = x1, x5, x6, x7 |  |         |                |                |                |                |                          |                |                          |                |                |                |
|--|--|---------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|----------------|
|  |  |         | P1             |                | P2             |                | P3                       |                | P4                       |                | P5             |                |
|  |  |         | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
| <i>L</i>   |  |         |                |                |                |                |                          |                |                          |                |                |                |
|  |  | T6      | -60            | 70             | 80             | 70             | 80                       | 70             | 80                       | -40            | -60            | -40            |
|  |  | T5      | -60            | 70             | 95             | 70             | 95                       | 70             | 95                       | -40            | -60            | -40            |
|  |  | T4      | -60            | 70             | 130            | 70             | 130                      | 70             | 130                      | -40            | -60            | -40            |
|  |  | T3      | -60            | 70             | 195            | 70             | 195                      | 70             | 195                      | -40            | -60            | -40            |
|  |  | T2...T1 | -60            | 70             | 200            | 70             | 230                      | 67             | 230                      | -40            | -60            | -40            |
| <i>N, Y</i>  |  |         |                |                |                |                |                          |                |                          |                |                |                |
|  |  | T6      | -60            | 70             | 80             | 70             | 80                       | 70             | 80                       | -40            | -60            | -40            |
|  |  | T5      | -60            | 70             | 95             | 70             | 95                       | 70             | 95                       | -40            | -60            | -40            |
|  |  | T4      | -60            | 70             | 130            | 70             | 130                      | 70             | 130                      | -40            | -60            | -40            |
|  |  | T3      | -60            | 70             | 195            | 70             | 195                      | 70             | 195                      | -40            | -60            | -40            |
|  |  | T2      | -60            | 70             | 230            | 70             | 280<br>290 <sup>1)</sup> | 69             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40            |
|  |  | T1      | -60            | 70             | 279            | 70             | 280<br>300 <sup>1)</sup> | 68             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40            |

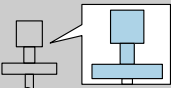
1) Alleen in combinatie met positie 11 = Y

## Positie 7 = A

|  |  |                  | P1             |                | P2             |                | P3                       |                | P4                       |                | P5             |                |
|--|--|------------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|----------------|
|  |  |                  | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
|  |  | = x1, x5, x6, x7 |                |                |                |                |                          |                |                          |                |                |                |
| <i>L</i>   |  |                  |                |                |                |                |                          |                |                          |                |                |                |
|  |  | T6               | -60            | 60             | 80             | 60             | 80                       | 60             | 80                       | -40            | -60            | -40            |
|  |  | T5               | -60            | 60             | 95             | 60             | 95                       | 60             | 95                       | -40            | -60            | -40            |
|  |  | T4               | -60            | 60             | 130            | 60             | 130                      | 60             | 130                      | -40            | -60            | -40            |
|  |  | T3               | -60            | 60             | 195            | 60             | 195                      | 60             | 195                      | -40            | -60            | -40            |
|  |  | T2...T1          | -60            | 60             | 200            | 60             | 230                      | 60             | 230                      | -40            | -60            | -40            |
| <i>N, Y</i>  |  |                  |                |                |                |                |                          |                |                          |                |                |                |
|  |  | T6               | -60            | 60             | 80             | 60             | 80                       | 60             | 80                       | -40            | -60            | -40            |
|  |  | T5               | -60            | 60             | 95             | 60             | 95                       | 60             | 95                       | -40            | -60            | -40            |
|  |  | T4               | -60            | 60             | 130            | 60             | 130                      | 60             | 130                      | -40            | -60            | -40            |
|  |  | T3               | -60            | 60             | 195            | 60             | 195                      | 60             | 195                      | -40            | -60            | -40            |
|  |  | T2               | -60            | 60             | 230            | 60             | 280<br>290 <sup>1)</sup> | 60             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40            |
|  |  | T1               | -60            | 60             | 279            | 60             | 280<br>300 <sup>1)</sup> | 60             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40            |

1) Alleen in combinatie met positie 11 = Y

## Positie 7 = 9

|  |  |                  | P1             |                | P2             |                | P3             |                | P4             |                | P5             |                |
|--|--|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  |  |                  | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
|  |  | = x1, x5, x6, x7 |                |                |                |                |                |                |                |                |                |                |
| <i>L, N, Y</i>   |  |                  |                |                |                |                |                |                |                |                |                |                |
|  |  | T6...T1          | -60            | 60             | 80             | 60             | 80             | 60             | 80             | -40            | -60            | -40            |

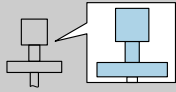
**Ex ec nC IC***Instrumenttype FTL50, FTL50H, FTL51, FTL51H*

Positie 7 = 4

|   |            | = x1, x5, x6, x7 |                |                |                |                |                |                |                |                |                |     |
|---|------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
|   |            | P1               |                | P2             |                | P3             |                | P4             |                | P5             |                |     |
|   |            | T <sub>p</sub>   | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |     |
| FTL50, FTL50H:<br>Ax<br>FTL51, FTL51H:<br>Bx, Cx, Dx                    | <b>2 A</b> |                  |                |                |                |                |                |                |                |                |                |     |
|   |            | T6               | -50            | 52             | 53             | 52             | 80             | 40             | 80             | -40            | -50            | -40 |
|   |            | T5               | -50            | 67             | 68             | 67             | 95             | 55             | 95             | -40            | -50            | -40 |
|   |            | T4               | -50            | 70             | 78             | 70             | 130            | 47             | 130            | -40            | -50            | -40 |
|   |            | T3...T1          | -50            | 70             | 78             | 70             | 150            | 38             | 150            | -40            | -50            | -40 |
| FTL50, FTL50H:<br>Ix, Qx<br>FTL51, FTL51H:<br>Jx, Kx, Lx, Rx, Sx,<br>Tx | <b>2 A</b> |                  |                |                |                |                |                |                |                |                |                |     |
|   |            | T6               | -50            | 52             | 58             | 52             | 80             | 50             | 80             | -40            | -50            | -40 |
|   |            | T5               | -50            | 67             | 73             | 67             | 95             | 65             | 95             | -40            | -50            | -40 |
|   |            | T4               | -50            | 70             | 104            | 70             | 130            | 67             | 130            | -40            | -50            | -40 |
|   |            | T3...T1          | -50            | 70             | 104            | 70             | 150            | 65             | 150            | -40            | -50            | -40 |
|   | <b>4 A</b> |                  |                |                |                |                |                |                |                |                |                |     |
|   |            | T6               | -50            | 43             | 54             | 43             | 80             | 40             | 80             | -40            | -50            | -40 |
|   |            | T5               | -50            | 58             | 69             | 58             | 95             | 55             | 95             | -40            | -50            | -40 |
|   |            | T4               | -50            | 70             | 77             | 70             | 130            | 65             | 130            | -40            | -50            | -40 |
|   |            | T3...T1          | -50            | 70             | 77             | 70             | 150            | 63             | 150            | -40            | -50            | -40 |

## Instrumenttype FTL51C

Positie 7 = 4



= x1, x5, x6, x7

|      |     |         | P1             |                | P2             |                | P3                       |                | P4                       |                | P5             |                |
|------|-----|---------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|----------------|
|      |     |         | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
| A    | 2 A |         |                |                |                |                |                          |                |                          |                |                |                |
|      |     | T6      | -50            | 52             | 53             | 52             | 80                       | 40             | 80                       | -40            | -50            | -40            |
|      |     | T5      | -50            | 67             | 68             | 67             | 95                       | 55             | 95                       | -40            | -50            | -40            |
|      |     | T4      | -50            | 70             | 78             | 70             | 130<br>120 <sup>1)</sup> | 47             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40            |
|      |     | T3...T1 | -50            | 70             | 78             | 70             | 150<br>120 <sup>1)</sup> | 38             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40            |
| B, C | 2 A |         |                |                |                |                |                          |                |                          |                |                |                |
|      |     | T6      | -50            | 52             | 58             | 52             | 80                       | 50             | 80                       | -40            | -50            | -40            |
|      |     | T5      | -50            | 67             | 73             | 67             | 95                       | 65             | 95                       | -40            | -50            | -40            |
|      |     | T4      | -50            | 70             | 104            | 70             | 130<br>120 <sup>1)</sup> | 67             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40            |
|      |     | T3...T1 | -50            | 70             | 104            | 70             | 150<br>120 <sup>1)</sup> | 65             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40            |
|      | 4 A |         |                |                |                |                |                          |                |                          |                |                |                |
|      |     | T6      | -50            | 43             | 54             | 43             | 80                       | 40             | 80                       | -40            | -50            | -40            |
|      |     | T5      | -50            | 58             | 69             | 58             | 95                       | 55             | 95                       | -40            | -50            | -40            |
|      |     | T4      | -50            | 70             | 77             | 70             | 130<br>120 <sup>1)</sup> | 65             | 130<br>120 <sup>1)</sup> | -40            | -50            | -40            |
|      |     | T3...T1 | -50            | 70             | 77             | 70             | 150<br>120 <sup>1)</sup> | 63             | 150<br>120 <sup>1)</sup> | -40            | -50            | -40            |

1) Alleen in combinatie met positie 5, 6 = xK

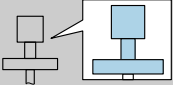
## Instrumenttype FTL70, FTL71

Positie 7 = 4

|   |     | = x1, x5, x6   |                |                |                |                |                |                |                |                |                |     |
|---|-----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
| L | 2 A | P1             |                | P2             |                | P3             |                | P4             |                | P5             |                |     |
|   |     | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |     |
|   | 2 A | T6             | -60            | 52             | 60             | 52             | 80             | 50             | 80             | -40            | -60            | -40 |
|   |     | T5             | -60            | 67             | 75             | 67             | 95             | 65             | 95             | -40            | -60            | -40 |
|   |     | T4             | -60            | 70             | 118            | 70             | 130            | 69             | 130            | -40            | -60            | -40 |
|   |     | T3             | -60            | 70             | 118            | 70             | 195            | 64             | 195            | -40            | -60            | -40 |
|   |     | T2...T1        | -60            | 70             | 118            | 70             | 230            | 61             | 230            | -40            | -60            | -40 |
|   | 4 A | T6             | -60            | 43             | 58             | 43             | 80             | 41             | 80             | -40            | -60            | -40 |
|   |     | T5             | -60            | 58             | 73             | 58             | 95             | 56             | 95             | -40            | -60            | -40 |
|   |     | T4             | -60            | 70             | 80             | 70             | 130            | 67             | 130            | -40            | -60            | -40 |
|   |     | T3             | -60            | 70             | 80             | 70             | 195            | 63             | 195            | -40            | -60            | -40 |
|   |     | T2...T1        | -60            | 70             | 80             | 70             | 230            | 59             | 230            | -40            | -60            | -40 |

|      |            | = x1, x5, x6   |                |                |                |                |                          |                |                          |                |                |     |
|------|------------|----------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|-----|
|      |            | P1             |                | P2             |                | P3             |                          | P4             |                          | P5             |                |     |
|      |            | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub> |     |
| N, Y | 2 A        |                |                |                |                |                |                          |                |                          |                |                |     |
|      |            | T6             | -60            | 52             | 64             | 52             | 80                       | 51             | 80                       | -40            | -60            | -40 |
|      |            | T5             | -60            | 67             | 79             | 67             | 95                       | 66             | 95                       | -40            | -60            | -40 |
|      |            | T4             | -60            | 70             | 130            | 70             | 130                      | 70             | 130                      | -40            | -60            | -40 |
|      |            | T3             | -60            | 70             | 139            | 70             | 195                      | 67             | 195                      | -40            | -60            | -40 |
|      |            | T2             | -60            | 70             | 139            | 70             | 280<br>290 <sup>1)</sup> | 63             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40 |
|      |            | T1             | -60            | 70             | 139            | 70             | 280<br>300 <sup>1)</sup> | 63             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40 |
|      | <b>4 A</b> |                |                |                |                |                |                          |                |                          |                |                |     |
|      |            | T6             | -60            | 43             | 66             | 43             | 80                       | 42             | 80                       | -40            | -60            | -40 |
|      |            | T5             | -60            | 58             | 80             | 58             | 95                       | 57             | 95                       | -40            | -60            | -40 |
|      |            | T4             | -60            | 70             | 85             | 70             | 130                      | 68             | 130                      | -40            | -60            | -40 |
|      |            | T3             | -60            | 70             | 85             | 70             | 195                      | 65             | 195                      | -40            | -60            | -40 |
|      |            | T2             | -60            | 70             | 85             | 70             | 280<br>290 <sup>1)</sup> | 61             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40 |
|      |            | T1             | -60            | 70             | 85             | 70             | 280<br>300 <sup>1)</sup> | 60             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40 |

1) Alleen in combinatie met positie 11 = Y

|  = x7 |            |         |                |                |                |                |                |                |                |                |                |                |
|--|------------|---------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  |            |         | P1             |                | P2             |                | P3             |                | P4             |                | P5             |                |
|  |            |         | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> |
| <i>L</i>   | <b>2 A</b> |         |                |                |                |                |                |                |                |                |                |                |
|  |            | T6      | -60            | 55             | 61             | 55             | 80             | 54             | 80             | -40            | -60            | -40            |
|  |            | T5      | -60            | 70             | 76             | 70             | 95             | 69             | 95             | -40            | -60            | -40            |
|  |            | T4      | -60            | 70             | 130            | 70             | 130            | 70             | 130            | -40            | -60            | -40            |
|  |            | T3      | -60            | 70             | 176            | 70             | 195            | 69             | 195            | -40            | -60            | -40            |
|  |            | T2...T1 | -60            | 70             | 176            | 70             | 230            | 67             | 230            | -40            | -60            | -40            |
|  | <b>4 A</b> |         |                |                |                |                |                |                |                |                |                |                |
|  |            | T6      | -60            | 45             | 66             | 45             | 80             | 44             | 80             | -40            | -60            | -40            |
|  |            | T5      | -60            | 60             | 81             | 60             | 95             | 59             | 95             | -40            | -60            | -40            |
|  |            | T4      | -60            | 70             | 124            | 70             | 130            | 69             | 130            | -40            | -60            | -40            |
|  |            | T3      | -60            | 70             | 124            | 70             | 195            | 66             | 195            | -40            | -60            | -40            |
|  |            | T2...T1 | -60            | 70             | 124            | 70             | 230            | 65             | 230            | -40            | -60            | -40            |

|      |     | = x7           |                |                |                |                |                          |                |                          |                |                |     |
|------|-----|----------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|----------------|-----|
|      |     | P1             |                | P2             |                | P3             |                          | P4             |                          | P5             |                |     |
|      |     | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub> |     |
| N, Y | 2 A |                |                |                |                |                |                          |                |                          |                |                |     |
|      |     | T6             | -60            | 55             | 62             | 55             | 80                       | 54             | 80                       | -40            | -60            | -40 |
|      |     | T5             | -60            | 70             | 77             | 70             | 95                       | 69             | 95                       | -40            | -60            | -40 |
|      |     | T4             | -60            | 70             | 130            | 70             | 130                      | 70             | 130                      | -40            | -60            | -40 |
|      |     | T3             | -60            | 70             | 195            | 70             | 195                      | 70             | 195                      | -40            | -60            | -40 |
|      |     | T2             | -60            | 70             | 208            | 70             | 280<br>290 <sup>1)</sup> | 67             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40 |
|      |     | T1             | -60            | 70             | 208            | 70             | 280<br>300 <sup>1)</sup> | 66             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40 |
|      | 4 A |                |                |                |                |                |                          |                |                          |                |                |     |
|      |     | T6             | -60            | 45             | 73             | 45             | 80                       | 44             | 80                       | -40            | -60            | -40 |
|      |     | T5             | -60            | 60             | 88             | 60             | 95                       | 59             | 95                       | -40            | -60            | -40 |
|      |     | T4             | -60            | 70             | 130            | 70             | 130                      | 70             | 130                      | -40            | -60            | -40 |
|      |     | T3             | -60            | 70             | 142            | 70             | 195                      | 68             | 195                      | -40            | -60            | -40 |
|      |     | T2             | -60            | 70             | 142            | 70             | 280<br>290 <sup>1)</sup> | 65             | 280<br>290 <sup>1)</sup> | -40            | -60            | -40 |
|      |     | T1             | -60            | 70             | 142            | 70             | 280<br>300 <sup>1)</sup> | 64             | 280<br>300 <sup>1)</sup> | -40            | -60            | -40 |

1) Alleen in combinatie met positie 11 = Y

**Ex ic IIC***Instrumenttype FTL50, FTL50H, FTL51, FTL51H*

Positie 7 = A, D, 5, 7

|   |         | = x1, x5, x6, x7 |                |                |                |                |                |                |                          |                |                          |  |
|---|---------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|--|
|   |         | P1               |                | P2             |                | P3             |                | P4             |                          | P5             |                          |  |
|   |         | T <sub>p</sub>   | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           |  |
| FTL50, FTL50H:<br>Ax<br>FTL51, FTL51H:<br>Bx, Cx, Dx                    |         |                  |                |                |                |                |                |                |                          |                |                          |  |
|   | T6      | -50              | 55             | 55             | 55             | 75             | 45             | 75             | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
|   | T5...T1 | -50              | 55             | 55             | 55             | 90             | 40             | 90             | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
| FTL50, FTL50H:<br>Ix, Qx<br>FTL51, FTL51H:<br>Jx, Kx, Lx, Rx, Sx,<br>Tx |         |                  |                |                |                |                |                |                |                          |                |                          |  |
|   | T6      | -50              | 55             | 65             | 55             | 75             | 50             | 75             | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
|   | T5      | -50              | 55             | 65             | 55             | 90             | 50             | 90             | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
|   | T4      | -50              | 55             | 65             | 55             | 125            | 50             | 125            | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
|   | T3...T1 | -50              | 55             | 65             | 55             | 150            | 45             | 150            | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |

1) Alleen in combinatie met positie 8, 9 = x6

## Positie 7 = 6, 8

|   |         | = x1, C3, N3, x5, x6, x7 |                |                |                |                |                |                |                          |                |                          |  |
|---|---------|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|--|
|   |         | P1                       |                | P2             |                | P3             |                | P4             |                          | P5             |                          |  |
|   |         | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           |  |
| FTL50, FTL50H:<br>Ax<br>FTL51, FTL51H:<br>Bx, Cx, Dx                    | T6      | -50                      | 55             | 67             | 55             | 75             | 55             | 75             | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
|   | T5      | -50                      | 65             | 70             | 65             | 90             | 55             | 90             | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
|   | T4...T1 | -50                      | 65             | 70             | 65             | 130            | 40             | 130            | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
|   |         |                          |                |                |                |                |                |                |                          |                |                          |  |
| FTL50, FTL50H:<br>Ix, Qx<br>FTL51, FTL51H:<br>Jx, Kx, Lx, Rx, Sx,<br>Tx | T6      | -50                      | 55             | 70             | 55             | 75             | 55             | 75             | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
|   | T5      | -50                      | 65             | 95             | 65             | 95             | 65             | 95             | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
|   | T4      | -50                      | 65             | 95             | 65             | 125            | 60             | 125            | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |
|   | T3...T1 | -50                      | 65             | 95             | 65             | 150            | 60             | 150            | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |  |

1) Alleen in combinatie met positie 8, 9 = x6

## Instrumenttype FTL51C

Positie 7 = A, D, 5, 7

|      |  | = x1, x5, x6, x7 |                |                |                |                |                          |                |                          |                          |                |                          |
|------|--|------------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|--------------------------|----------------|--------------------------|
|      |  | P1               |                | P2             |                | P3             |                          | P4             |                          | P5                       |                |                          |
|      |  | T <sub>p</sub>   | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub>           | T <sub>a</sub> |                          |
| A    |  |                  |                |                |                |                |                          |                |                          |                          |                |                          |
|      |  | T6               | -50            | 55             | 55             | 55             | 75                       | 45             | 75                       | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
|      |  | T5...T1          | -50            | 55             | 55             | 55             | 90                       | 40             | 90                       | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
| B, C |  |                  |                |                |                |                |                          |                |                          |                          |                |                          |
|      |  | T6               | -50            | 55             | 65             | 55             | 75                       | 50             | 75                       | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
|      |  | T5               | -50            | 55             | 65             | 55             | 90                       | 50             | 90                       | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
|      |  | T4               | -50            | 55             | 65             | 55             | 125<br>120 <sup>2)</sup> | 50             | 125<br>120 <sup>2)</sup> | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
|      |  | T3...T1          | -50            | 55             | 65             | 55             | 150<br>120 <sup>2)</sup> | 45             | 150<br>120 <sup>2)</sup> | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |

1) Alleen in combinatie met positie 8, 9 = x6

2) Alleen in combinatie met positie 5, 6 = xK

## Positie 7 = 6, 8

|      |  | = x1, x5, x6, x7 |                |                |                |                |                          |                |                          |                          |                |                          |
|------|--|------------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|--------------------------|----------------|--------------------------|
|      |  | P1               |                | P2             |                | P3             |                          | P4             |                          | P5                       |                |                          |
|      |  | T <sub>p</sub>   | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           | T <sub>p</sub>           | T <sub>a</sub> |                          |
| A    |  |                  |                |                |                |                |                          |                |                          |                          |                |                          |
|      |  | T6               | -50            | 55             | 67             | 55             | 75                       | 55             | 75                       | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
|      |  | T5               | -50            | 65             | 70             | 65             | 90                       | 55             | 90                       | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
|      |  | T4...T1          | -50            | 65             | 70             | 65             | 130<br>120 <sup>2)</sup> | 40             | 130<br>120 <sup>2)</sup> | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
| B, C |  |                  |                |                |                |                |                          |                |                          |                          |                |                          |
|      |  | T6               | -50            | 55             | 70             | 55             | 75                       | 55             | 75                       | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
|      |  | T5               | -50            | 65             | 95             | 65             | 95                       | 65             | 95                       | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
|      |  | T4               | -50            | 65             | 95             | 65             | 125<br>120 <sup>2)</sup> | 60             | 125<br>120 <sup>2)</sup> | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |
|      |  | T3...T1          | -50            | 65             | 95             | 65             | 150<br>120 <sup>2)</sup> | 60             | 150<br>120 <sup>2)</sup> | -50<br>-40 <sup>1)</sup> | -50            | -50<br>-40 <sup>1)</sup> |

1) Alleen in combinatie met positie 8, 9 = x6

2) Alleen in combinatie met positie 5, 6 = xK

## Instrumenttype FTL70, FTL71

Positie 7 = A, 5, 7

|      |  |         | P1             |                | P2             |                | P3                       |                | P4                       |                          | P5             |                          |
|------|--|---------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|--------------------------|----------------|--------------------------|
|      |  |         | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           |
| L    |  |         |                |                |                |                |                          |                |                          |                          |                |                          |
|      |  | T6      | -60            | 50             | 80             | 50             | 80                       | 50             | 80                       | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T5      | -60            | 55             | 70             | 55             | 95                       | 50             | 95                       | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T4      | -60            | 55             | 70             | 55             | 130                      | 50             | 130                      | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T3      | -60            | 55             | 70             | 55             | 195                      | 45             | 195                      | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T2...T1 | -60            | 55             | 70             | 55             | 230                      | 45             | 230                      | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
| N, Y |  |         |                |                |                |                |                          |                |                          |                          |                |                          |
|      |  | T6      | -60            | 55             | 80             | 55             | 80                       | 50             | 80                       | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T5      | -60            | 55             | 75             | 55             | 95                       | 50             | 95                       | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T4      | -60            | 55             | 75             | 55             | 130                      | 50             | 130                      | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T3      | -60            | 55             | 75             | 55             | 195                      | 50             | 195                      | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T2      | -60            | 55             | 75             | 55             | 280<br>290 <sup>2)</sup> | 45             | 280<br>290 <sup>2)</sup> | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T1      | -60            | 55             | 75             | 55             | 280<br>300 <sup>2)</sup> | 45             | 280<br>300 <sup>2)</sup> | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |

1) Alleen in combinatie met positie 8, 9 = x5, x6

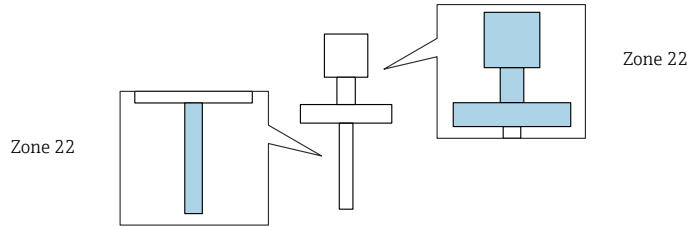
2) Alleen in combinatie met positie 11 = Y

## Positie 7 = 6, 8

|      |  | = x1, x5, x6, x7 |                |                |                |                |                          |                |                          |                          |                |                          |
|------|--|------------------|----------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|--------------------------|----------------|--------------------------|
|      |  |                  | P1             |                | P2             |                | P3                       |                | P4                       |                          | P5             |                          |
|      |  |                  | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub> | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub> | T <sub>p</sub>           | T <sub>a</sub>           | T <sub>p</sub> | T <sub>a</sub>           |
| L    |  |                  |                |                |                |                |                          |                |                          |                          |                |                          |
|      |  | T6               | -60            | 55             | 80             | 55             | 80                       | 55             | 80                       | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T5               | -60            | 65             | 80             | 65             | 95                       | 65             | 95                       | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T4               | -60            | 65             | 95             | 65             | 130                      | 65             | 130                      | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T3               | -60            | 65             | 115            | 65             | 195                      | 60             | 195                      | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T2...T1          | -60            | 65             | 115            | 65             | 230                      | 55             | 230                      | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
| N, Y |  |                  |                |                |                |                |                          |                |                          |                          |                |                          |
|      |  | T6               | -60            | 55             | 80             | 55             | 80                       | 55             | 80                       | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T5               | -60            | 65             | 95             | 65             | 95                       | 65             | 95                       | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T4               | -60            | 65             | 130            | 65             | 130                      | 65             | 130                      | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T3               | -60            | 65             | 140            | 65             | 195                      | 60             | 195                      | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T2               | -60            | 65             | 140            | 65             | 280<br>290 <sup>2)</sup> | 55             | 280<br>290 <sup>2)</sup> | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |
|      |  | T1               | -60            | 65             | 140            | 65             | 280<br>300 <sup>2)</sup> | 55             | 280<br>300 <sup>2)</sup> | -50<br>-40 <sup>1)</sup> | -60            | -50<br>-40 <sup>1)</sup> |

1) Alleen in combinatie met positie 8, 9 = x5, x6

2) Alleen in combinatie met positie 11 = Y

**Zone 22****Ec tc III C**

*Instrumenttype FTL50, FTL50H, FTL51, FTL51H*

*Positie 7 = 1*

|  |               |                          |                         |             |
|--|---------------|--------------------------|-------------------------|-------------|
| FTL50, FTL50H: Ax<br>FTL51, FTL51H: Bx, Cx, Dx                 | <b>180 mA</b> |                          |                         |             |
|  |               | $-50 \leq T_p \leq +80$  | $-40 \leq T_a \leq +70$ | T80         |
|  |               | $-50 \leq T_p \leq +90$  | $-40 \leq T_a \leq +66$ | T80 ... 90  |
|  |               | $-50 \leq T_p \leq +120$ | $-40 \leq T_a \leq +53$ | T80 ... 120 |
|  |               | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +40$ | T80 ... 150 |
| FTL50, FTL50H: Ix, Qx<br>FTL51, FTL51H: Jx, Kx, Lx, Rx, Sx, Tx | <b>180 mA</b> |                          |                         |             |
|  |               | $-50 \leq T_p \leq +125$ | $-40 \leq T_a \leq +70$ | T80 ... 125 |
|  |               | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +67$ | T80 ... 150 |
|  | <b>350 mA</b> |                          |                         |             |
|  |               | $-50 \leq T_p \leq +116$ | $-40 \leq T_a \leq +70$ | T80 ... 116 |
|  |               | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +67$ | T80 ... 150 |

## Positie 7 = 2

|  |               |                          |   |             |
|--|---------------|--------------------------|---|-------------|
| FTL50, FTL50H: Ax<br>FTL51, FTL51H: Bx, Cx, Dx                 | <b>350 mA</b> |                          |   |             |
|  |               | $-50 \leq T_p \leq +95$  | $-40 \leq T_a \leq +70$<br>$-25 \leq T_a \leq +70^{1)}$ | T80 ... 95  |
|  |               | $-50 \leq T_p \leq +130$ | $-40 \leq T_a \leq +55$<br>$-25 \leq T_a \leq +55^{1)}$ | T80 ... 130 |
|  |               | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +45$<br>$-25 \leq T_a \leq +45^{1)}$ | T80 ... 150 |
| FTL50, FTL50H: lx, Qx<br>FTL51, FTL51H: Jx, Kx, Lx, Rx, Sx, Tx | <b>350 mA</b> |                          |   |             |
|  |               | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +70$<br>$-25 \leq T_a \leq +70^{1)}$ | T80 ... 150 |

1) Alleen in combinatie met positie 8, 9 = C3, N3

## Positie 7 = 4

|  |                 |                          |                         |             |
|--|-----------------|--------------------------|-------------------------|-------------|
| FTL50, FTL50H: Ax<br>FTL51, FTL51H: Bx, Cx, Dx                 | <b>2 A, 4 A</b> |                          |                         |             |
|  |                 | $-50 \leq T_p \leq +80$  | $-40 \leq T_a \leq +70$ | T80         |
|  |                 | $-50 \leq T_p \leq +90$  | $-40 \leq T_a \leq +66$ | T80 ... 90  |
|  |                 | $-50 \leq T_p \leq +120$ | $-40 \leq T_a \leq +53$ | T80 ... 120 |
|  |                 | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +40$ | T80 ... 150 |
|  | <b>6 A</b>      |                          |                         |             |
|  |                 | $-50 \leq T_p \leq +90$  | $-40 \leq T_a \leq +64$ | T80 ... 90  |
|  |                 | $-50 \leq T_p \leq +120$ | $-40 \leq T_a \leq +51$ | T80 ... 120 |
|  |                 | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +38$ | T80 ... 150 |
| FTL50, FTL50H: lx, Qx<br>FTL51, FTL51H: Jx, Kx, Lx, Rx, Sx, Tx | <b>2 A</b>      |                          |                         |             |
|  |                 | $-50 \leq T_p \leq +125$ | $-40 \leq T_a \leq +70$ | T80 ... 125 |
|  |                 | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +67$ | T80 ... 150 |
|  | <b>4 A</b>      |                          |                         |             |
|  |                 | $-50 \leq T_p \leq +116$ | $-40 \leq T_a \leq +70$ | T80 ... 116 |
|  |                 | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +67$ | T80 ... 150 |
|  | <b>6 A</b>      |                          |                         |             |
|  |                 | $-50 \leq T_p \leq +97$  | $-40 \leq T_a \leq +70$ | T80 ... 97  |
|  |                 | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +65$ | T80 ... 150 |

*Positie 7 = 5, 6, 7*

|   |  |                          |                         |             |
|---|--|--------------------------|-------------------------|-------------|
| FTL50, FTL50H: Ax, Ix, Qx<br>FTL51, FTL51H: Bx, Cx, Dx, Jx, Kx, Lx,<br>Rx, Sx, Tx |  |                          |                         |             |
|   |  | $-50 \leq T_p \leq +80$  | $-40 \leq T_a \leq +70$ | T80         |
|   |  | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +50$ | T80 ... 150 |

*Positie 7 = 8*

|   |  |                          |  |             |
|---|--|--------------------------|--|-------------|
| FTL50, FTL50H: Ax, Ix, Qx<br>FTL51, FTL51H: Bx, Cx, Dx, Jx, Kx, Lx,<br>Rx, Sx, Tx |  |                          |  |             |
|   |  | $-50 \leq T_p \leq +80$  | $-40 \leq T_a \leq +70$<br>$-25 \leq T_a \leq +70$ <sup>1)</sup> | T80         |
|   |  | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +50$<br>$-25 \leq T_a \leq +50$ <sup>1)</sup> | T80 ... 150 |

1) Alleen in combinatie met positie 8, 9 = C3, N3

*Positie 7 = A*

|   |  |                          |                         |             |
|---|--|--------------------------|-------------------------|-------------|
| FTL50, FTL50H: Ax, Ix, Qx<br>FTL51, FTL51H: Bx, Cx, Dx, Jx, Kx, Lx,<br>Rx, Sx, Tx |  |                          |                         |             |
|   |  | $-50 \leq T_p \leq +80$  | $-40 \leq T_a \leq +60$ | T80         |
|   |  | $-50 \leq T_p \leq +150$ | $-40 \leq T_a \leq +50$ | T80 ... 150 |

*Positie 7 = D*

|   |  |                         |                         |     |
|---|--|-------------------------|-------------------------|-----|
| FTL50, FTL50H: Ax, Ix, Qx<br>FTL51, FTL51H: Bx, Cx, Dx, Jx, Kx, Lx,<br>Rx, Sx, Tx |  |                         |                         |     |
|   |  | $-50 \leq T_p \leq +80$ | $-40 \leq T_a \leq +60$ | T80 |

*Instrumenttype FTL70, FTL71**Positie 7 = 1*

| L    | 180 mA |  |                         |  |
|------|--------|--|-------------------------|--|
|      |        | $-60 \leq T_p \leq +80$  | $-40 \leq T_a \leq +60$ | T80                                      |
|      |        | $-60 \leq T_p \leq +95$  | $-40 \leq T_a \leq +70$ | T80 ... 95                               |
|      |        | $-60 \leq T_p \leq +130$   | $-40 \leq T_a \leq +70$ | T80 ... 130                              |
|      |        | $-60 \leq T_p \leq +195$   | $-40 \leq T_a \leq +70$ | T80 ... 195                              |
|      |        | $-60 \leq T_p \leq +230$   | $-40 \leq T_a \leq +70$ | T80 ... 230                              |
| N, Y | 180 mA |  |                         |  |
|      |        | $-60 \leq T_p \leq +80$  | $-40 \leq T_a \leq +60$ | T80                                      |
|      |        | $-60 \leq T_p \leq +95$  | $-40 \leq T_a \leq +70$ | T80 ... 95                               |
|      |        | $-60 \leq T_p \leq +130$   | $-40 \leq T_a \leq +70$ | T80 ... 130                              |
|      |        | $-60 \leq T_p \leq +195$   | $-40 \leq T_a \leq +70$ | T80 ... 195                              |
|      |        | $-60 \leq T_p \leq +280$<br>$-60 \leq T_p \leq +290$ <sup>1)</sup> | $-40 \leq T_a \leq +70$ | T80 ... 280<br>T80 ... 290 <sup>1)</sup> |
|      |        | $-60 \leq T_p \leq +280$<br>$-60 \leq T_p \leq +300$ <sup>1)</sup> | $-40 \leq T_a \leq +70$ | T80 ... 280<br>T80 ... 300 <sup>1)</sup> |

1) Alleen in combinatie met positie 11 = Y

## Positie 7 = 2

| L    | 350 mA |  |                         |  |
|------|--------|--|-------------------------|--|
|      |        | $-60 \leq T_p \leq +80$  | $-40 \leq T_a \leq +60$ | T80                                      |
|      |        | $-60 \leq T_p \leq +95$  | $-40 \leq T_a \leq +70$ | T80 ... 95                               |
|      |        | $-60 \leq T_p \leq +130$   | $-40 \leq T_a \leq +70$ | T80 ... 130                              |
|      |        | $-60 \leq T_p \leq +195$   | $-40 \leq T_a \leq +70$ | T80 ... 195                              |
|      |        | $-60 \leq T_p \leq +230$   | $-40 \leq T_a \leq +70$ | T80 ... 230                              |
| N, Y | 350 mA |  |                         |  |
|      |        | $-60 \leq T_p \leq +80$  | $-40 \leq T_a \leq +60$ | T80                                      |
|      |        | $-60 \leq T_p \leq +95$  | $-40 \leq T_a \leq +70$ | T80 ... 95                               |
|      |        | $-60 \leq T_p \leq +130$   | $-40 \leq T_a \leq +70$ | T80 ... 130                              |
|      |        | $-60 \leq T_p \leq +195$   | $-40 \leq T_a \leq +70$ | T80 ... 195                              |
|      |        | $-60 \leq T_p \leq +280$<br>$-60 \leq T_p \leq +290$ <sup>1)</sup> | $-40 \leq T_a \leq +70$ | T80 ... 280<br>T80 ... 290 <sup>1)</sup> |
|      |        | $-60 \leq T_p \leq +280$<br>$-60 \leq T_p \leq +300$ <sup>1)</sup> | $-40 \leq T_a \leq +70$ | T80 ... 280<br>T80 ... 300 <sup>1)</sup> |

1) Alleen in combinatie met positie 11 = Y

Positie 7 = 4

|      |                          |  |                         |  |
|------|--------------------------|--|-------------------------|--|
| L    | <b>2 A, 4 A,<br/>6 A</b> |  |                         |  |
|      |                          | $-60 \leq T_p \leq +80$  | $-40 \leq T_a \leq +60$ | T80                                      |
|      |                          | $-60 \leq T_p \leq +95$  | $-40 \leq T_a \leq +70$ | T80 ... 95                               |
|      |                          | $-60 \leq T_p \leq +130$   | $-40 \leq T_a \leq +70$ | T80 ... 130                              |
|      |                          | $-60 \leq T_p \leq +195$   | $-40 \leq T_a \leq +70$ | T80 ... 195                              |
|      |                          | $-60 \leq T_p \leq +230$   | $-40 \leq T_a \leq +70$ | T80 ... 230                              |
| N, Y | <b>2 A, 4 A,<br/>6 A</b> |  |                         |  |
|      |                          | $-60 \leq T_p \leq +80$  | $-40 \leq T_a \leq +60$ | T80                                      |
|      |                          | $-60 \leq T_p \leq +95$  | $-40 \leq T_a \leq +70$ | T80 ... 95                               |
|      |                          | $-60 \leq T_p \leq +130$   | $-40 \leq T_a \leq +70$ | T80 ... 130                              |
|      |                          | $-60 \leq T_p \leq +195$   | $-40 \leq T_a \leq +70$ | T80 ... 195                              |
|      |                          | $-60 \leq T_p \leq +280$<br>$-60 \leq T_p \leq +290$ <sup>1)</sup> | $-40 \leq T_a \leq +70$ | T80 ... 280<br>T80 ... 290 <sup>1)</sup> |
|      |                          | $-60 \leq T_p \leq +280$<br>$-60 \leq T_p \leq +300$ <sup>1)</sup> | $-40 \leq T_a \leq +70$ | T80 ... 280<br>T80 ... 300 <sup>1)</sup> |

1) Alleen in combinatie met positie 11 = Y

## Positie 7 = 5, 6, 7, 8

| L    |  |  |                         |  |
|------|--|--|-------------------------|--|
|      |  | $-60 \leq T_p \leq +80$  | $-40 \leq T_a \leq +70$ | T80                                      |
|      |  | $-60 \leq T_p \leq +95$  | $-40 \leq T_a \leq +70$ | T80 ... 95                               |
|      |  | $-60 \leq T_p \leq +130$   | $-40 \leq T_a \leq +70$ | T80 ... 130                              |
|      |  | $-60 \leq T_p \leq +195$   | $-40 \leq T_a \leq +70$ | T80 ... 195                              |
|      |  | $-60 \leq T_p \leq +230$   | $-40 \leq T_a \leq +70$ | T80 ... 230                              |
| N, Y |  |  |                         |  |
|      |  | $-60 \leq T_p \leq +80$  | $-40 \leq T_a \leq +70$ | T80                                      |
|      |  | $-60 \leq T_p \leq +95$  | $-40 \leq T_a \leq +70$ | T80 ... 95                               |
|      |  | $-60 \leq T_p \leq +130$   | $-40 \leq T_a \leq +70$ | T80 ... 130                              |
|      |  | $-60 \leq T_p \leq +195$   | $-40 \leq T_a \leq +70$ | T80 ... 195                              |
|      |  | $-60 \leq T_p \leq +280$<br>$-60 \leq T_p \leq +290$ <sup>1)</sup> | $-40 \leq T_a \leq +70$ | T80 ... 280<br>T80 ... 290 <sup>1)</sup> |
|      |  | $-60 \leq T_p \leq +280$<br>$-60 \leq T_p \leq +300$ <sup>1)</sup> | $-40 \leq T_a \leq +70$ | T80 ... 280<br>T80 ... 300 <sup>1)</sup> |

1) Alleen in combinatie met positie 11 = Y

## Positie 7 = A

| L    |  |  |                         |  |
|------|--|--|-------------------------|--|
|      |  | $-60 \leq T_p \leq +80$  | $-40 \leq T_a \leq +60$ | T80                                      |
|      |  | $-60 \leq T_p \leq +95$  | $-40 \leq T_a \leq +60$ | T80 ... 95                               |
|      |  | $-60 \leq T_p \leq +130$   | $-40 \leq T_a \leq +60$ | T80 ... 130                              |
|      |  | $-60 \leq T_p \leq +195$   | $-40 \leq T_a \leq +60$ | T80 ... 195                              |
|      |  | $-60 \leq T_p \leq +230$   | $-40 \leq T_a \leq +60$ | T80 ... 230                              |
| N, Y |  |  |                         |  |
|      |  | $-60 \leq T_p \leq +80$  | $-40 \leq T_a \leq +60$ | T80                                      |
|      |  | $-60 \leq T_p \leq +95$  | $-40 \leq T_a \leq +60$ | T80 ... 95                               |
|      |  | $-60 \leq T_p \leq +130$   | $-40 \leq T_a \leq +60$ | T80 ... 130                              |
|      |  | $-60 \leq T_p \leq +195$   | $-40 \leq T_a \leq +60$ | T80 ... 195                              |
|      |  | $-60 \leq T_p \leq +280$<br>$-60 \leq T_p \leq +290$ <sup>1)</sup> | $-40 \leq T_a \leq +60$ | T80 ... 280<br>T80 ... 290 <sup>1)</sup> |
|      |  | $-60 \leq T_p \leq +280$<br>$-60 \leq T_p \leq +300$ <sup>1)</sup> | $-40 \leq T_a \leq +60$ | T80 ... 280<br>T80 ... 300 <sup>1)</sup> |

1) Alleen in combinatie met positie 11 = Y

Positie 7 = 9

|         |  |                         |                         |     |
|---------|--|-------------------------|-------------------------|-----|
| L, N, Y |  |                         |                         |     |
|         |  | $-60 \leq T_p \leq +80$ | $-40 \leq T_a \leq +60$ | T80 |

**Aansluitgegevens** Basisspecificatie, positie 1 = B

| Basisspecificatie, positie 7 | Voeding  |
|------------------------------|--|
| 4                            | <p>U = 19 ... 253 V<sub>AC</sub>, 50/60 Hz; P<sub>max</sub> ≤ 1,3 W<br/> of<br/> U = 19 ... 55 V<sub>DC</sub></p> <p>Relais:<br/> I<sub>max</sub> ~ 6,0 A → U<sub>max</sub> = 253 V<sub>AC</sub>; P<sub>max</sub> = 1 500 VA, cos φ = 1<br/> P<sub>max</sub> = 750 VA, cos φ &gt; 0,7</p> <p>I<sub>max</sub> ~ 6,0 A → U<sub>max</sub> = 30 V<sub>DC</sub><br/> I<sub>max</sub> ~ 0,2 A → U<sub>max</sub> ≤ 125 V<sub>DC</sub></p> |

## Basisspecificatie, positie 1 = C (alleen Ex ec, Ex tc)

| Basisspecificatie, positie 7      | Voeding   |
|-----------------------------------|---|
| A                                 | U = 9 ... 32 V <sub>DC</sub> ; aansluiting alleen op PROFIBUS PA<br>I <sub>max</sub> ≤ 13,5 mA    |
| D (FTL5x(H), FTL51C)<br>9 (FTL7x) | U = 21 ... 26 V; aansluiting alleen op FML621<br>I <sub>max</sub> ≤ 16 mA                         |
| 1                                 | U = 19 ... 253 V <sub>AC</sub> , 50/60 Hz; P <sub>max</sub> ≤ 0,83 W<br>I <sub>max</sub> ≤ 350 mA |
| 2                                 | U = 10 ... 55 V <sub>DC</sub> ; P <sub>max</sub> ≤ 0,83 W<br>I <sub>max</sub> ≤ 350 mA            |
| 5                                 | U = 11 ... 36 V <sub>DC</sub> ; P <sub>max</sub> ≤ 0,6 W<br>I <sub>max</sub> ≤ 22 mA              |
| 6, 8                              | U = 4 ... 12,5 V <sub>DC</sub> ; P <sub>max</sub> ≤ 23 mW<br>I <sub>max</sub> ≤ 3,5 mA            |
| 7                                 | U = 9,5 ... 12,5 V <sub>DC</sub> ; P <sub>max</sub> ≤ 150 mW<br>I <sub>max</sub> ≤ 13 mA          |

*Basisspecificatie, positie 1 = C (alleen Ex ic)*

| <i>Basisspecificatie,<br/>positie 7</i> | <b>Voeding</b>   |  |
|---|--|--|
| A                                       | $U_i = 17,5 \text{ V}$<br>$P_i = 5,5 \text{ W}$<br>$I_i = 500 \text{ mA}$<br>$C_i = 2,7 \text{ nF}$<br>$L_i = 10 \text{ } \mu\text{H}$ | Veldbus: PROFIBUS PA   |
| D ( <i>FTL5x(H), FTL51C</i> )           | $U_i = 27,6 \text{ V}$<br>$P_i = 640 \text{ mW}$<br>$I_i = 93 \text{ mA}$<br>$C_i = 2 \text{ nF}$<br>$L_i = 0,133 \text{ mH}$          | Alleen bijbehorende intrinsiekveilige voedingseenheid FML621 van Endress+Hauser  |
| 5                                       | $U_i = 36 \text{ V}$<br>$P_i = 1 \text{ W}$<br>$I_i = 100 \text{ mA}$<br>$C_i/L_i = 0$   | Voedingseenheid met maximale elektrische specificaties lager dan de karakteristieke waarden van de elektronica-modules |
| 6, 8                                    | $U_i = 16 \text{ V}$<br>$P_i = 170 \text{ mW}$<br>$I_i = 52 \text{ mA}$<br>$C_i = 30 \text{ nF}$<br>$L_i = 0$                          | Voedingseenheid met maximale elektrische specificaties lager dan de karakteristieke waarden van de elektronica-modules |
| 7                                       | $U_i = 16,7 \text{ V}$<br>$P_i = 1 \text{ W}$<br>$I_i = 150 \text{ mA}$<br>$C_i/L_i = 0$   | Voedingseenheid met maximale elektrische specificaties lager dan de karakteristieke waarden van de elektronica-modules |



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