Certificate of Compliance

Certificate: 70087366 **Master Contract:** 160686

Project: 80174206 **Date Issued:** 2024-03-20

Issued To: **Endress + Hauser Flowtec AG**
Kagenstrasse 7
Reinach., Basel-Country, 4153
Switzerland

Attention: Minh Tuan Do

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: Anil Sodhi
Anil Sodhi

PRODUCTS

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations
CLASS 2258 82 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations - Certified to US Standards

CLASS 2258 03 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations
CLASS 2258 83 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations - CERTIFIED TO U.S. STANDARDS

CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations
CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations – CERTIFIED TO U.S. STANDARDS

Class I, Division 1, Group A, B, C, D T6…T1;
Class I, Division 2, Group A, B, C, D T6…T1;
Class II, Division 1, Groups E, F, G; Class III;

Class I, Zone 1, AEx/Ex db eb ia [ia Ga] IIC T6… T1 Gb;
Class I, Zone 1, AEx/Ex db eb [ia Ga] IIC T6… T1 Gb;
Class I, Zone 1, AEx/Ex db ia [ia Ga] IIC T6… T1 Gb;
Class I, Zone 1, AEx/Ex db [ia Ga] IIC T6… T1 Gb;
Class I, Zone 1, AEx/Ex ia IIC T6… T1 Gb;
Class I, Zone 1, AEx/Ex db ia IIC T6… T1 Gb;

Class I, Zone 0/1, AEx/Ex db eb ia [ia Ga] IIC T6… T1 Ga/Gb;
Class I, Zone 0/1, AEx/Ex db ia [ia Ga] IIC T6… T1 Ga/Gb;
Class I, Zone 0/1, AEx/Ex ia IIC T6… T1 Ga/Gb;

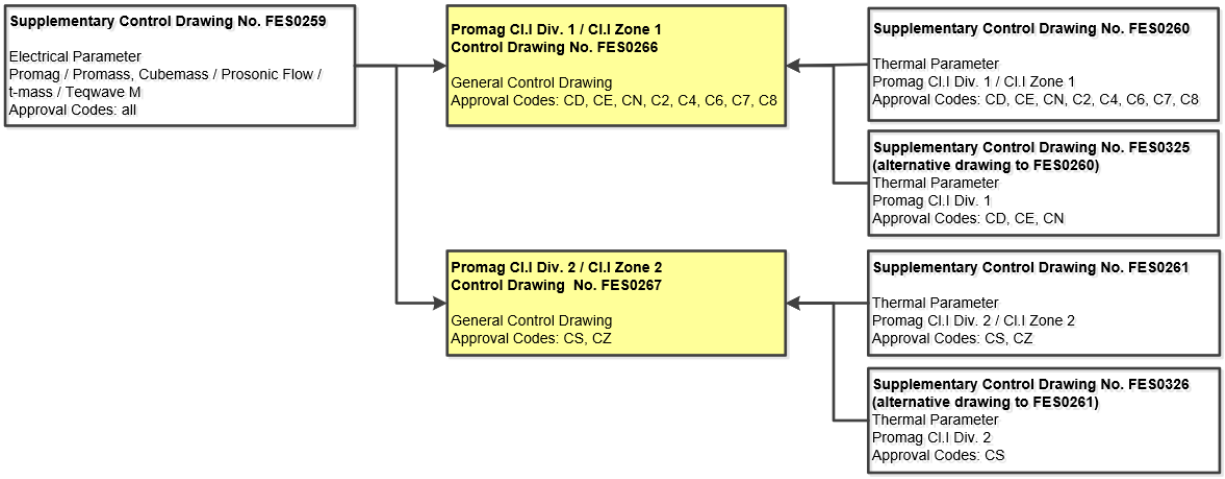
Class I, Zone 2, AEx/Ex ec nC IIC T5… T1 Gc;
Class I, Zone 2, AEx/Ex ec nC [ic] IIC T5… T1 Gc;
Class I, Zone 2, AEx/Ex ec nC [ic] [ia Ga] IIC T5… T4 Gc;
Class I, Zone 2, AEx/Ex ec IIC T6… T1 Gc;
Class I, Zone 2, AEx/Ex ec nC IIC T6… T1 Gc;

Zone 21, AEx/Ex tb IIIC T** °C Db;
Zone 21, AEx/Ex ia tb IIIC T** °C Db;
Zone 21, AEx/Ex tb [ia Da] IIIC T** °C Db;
Zone 21, AEx/Ex tb [ia Da] IIIC T85 °C Db;
Zone 21, AEx/Ex ia IIIC T** °C Db;

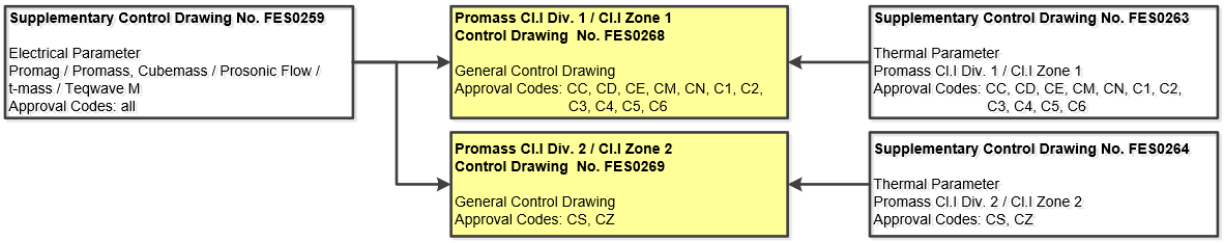
Note: See approval code ‘dd’ within the ordering code for the markings of the equipment based on the final construction. ** refer to control drawing for applicable temperatures.

Proline Promass 300/500, Proline Cubemass 300/500, Proline Promag 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500 and Proline Teqwave M 300/500 Flowmeter system available as compact and remote versions; product electrical ratings as listed under order code ‘e’; hazardous locations designations as listed under order code ‘dd’; ambient temperature as listed in the applicable control drawings as shown below;

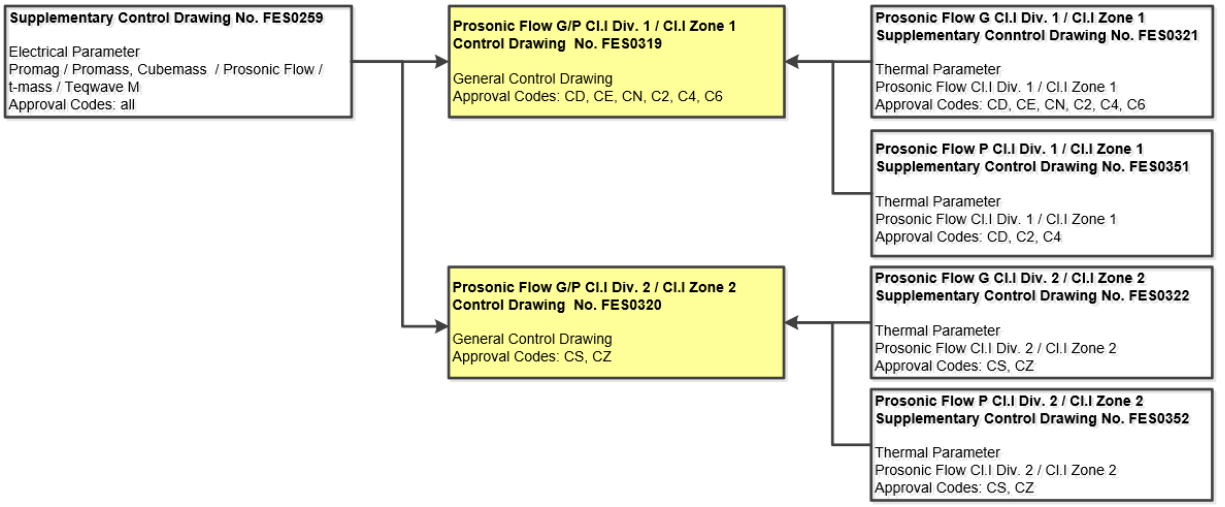
Proline Promag 300/500:



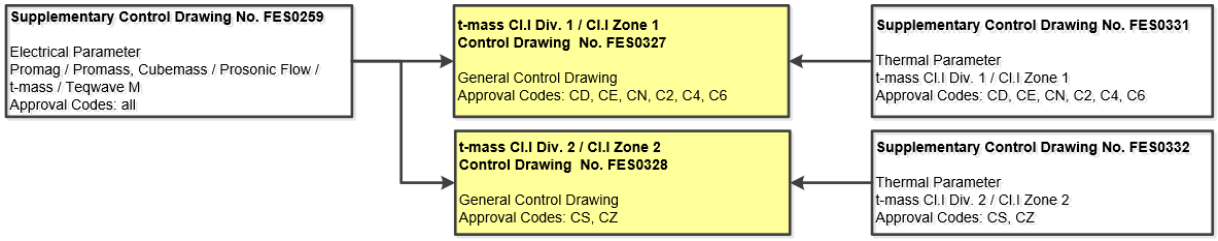
Proline Promass 300/500 & Proline Cubemass 300/500:



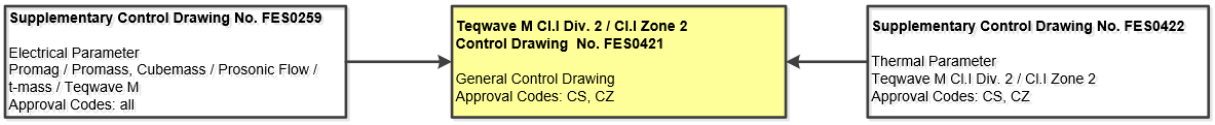
Proline Prosonic Flow 300/500:



Proline t-mass 300/500:



Proline Teqwave M 300/500:



Proline Promass 300/500, Proline Cubemass 300/500

Extended order code Proline Promass 300 and Cubemass 300:

8a3bcc – ddeffghjlpsstttvww + #**#	
O8a3bcc – ddeffghjlpsstttvwwyy + #**#	for OEM-version
8x3bxx – ddeffghjlprrssww + #**#	for replacement transmitter
O8x3bxx – ddeffghjlprrsswwyy + #**#	for replacement transmitter OEM

Extended order code Proline Promass 500 and Cubemass 500:

8a5bcc – ddeffghijkmnopssttvww + #**#	
O8a5bcc – ddeffghijkmnopssttvwwyy + #**#	for OEM-version
8x5bxx – ddeffghijkmopqqrrssww + #**#	for replacement transmitter
O8x5bxx – ddeffghijkmopqqrrsswwyy + #**#	for replacement transmitter OEM

a = **Type of sensor**
A = Promass A; C = Cubemass C; E = Promass E; F = Promass F; H = Promass H; I = Promass I; O = Promass O; P = Promass P; Q = Promass Q; S = Promass S; X = Promass X

b = **Generation**
B = Promass A (type 8A*B**, O8A*B**); Cubemass C; Promass E; Promass F; Promass H; Promass I; Promass O; Promass P; Promass Q; Promass S; Promass X
C = Promass A (type 8A*C**, O8A*C**)

cc = **Size**
any double digits with combination of number or letter

dd = Approval

Proline Promass 300:

CC	=	Cl.I Div.1, Cl.II,III, GP C-G	
CD	=	Cl.I Div.1, Cl.II,III, GP A-G	
CE	=	Cl.I Div.1, GP A-D	
CS	=	Cl.I Div. 2, GP A-D	
CZ	=	Ex ec IIC T5…T1 Gc	
C1	=	Ex db eb [ia] IIB T6…T1 Gb	
		Ex tb IIIC T** Db	
C2	=	Ex db eb [ia] IIC T6…T1 Gb	
		Ex tb IIIC T** Db	
C3	=	Ex db [ia] IIB T6…T1 Gb	
		Ex tb IIIC T** Db	
C4	=	Ex db [ia] IIC T6…T1 Gb	
		Ex tb IIIC T** Db	

Proline Promass 500:

CC	=	Cl.I Div.1, Cl.II,III, GP C-G	(transmitter + sensor)
CD	=	Cl.I Div.1, Cl.II,III, GP A-G	(transmitter + sensor)
CE	=	Cl.I Div.1, GP A-D	(transmitter + sensor)
CM	=	Cl.I Div. 2, GP CD	(transmitter)
		Cl.I Div.1, Cl.II,III, GP C-G	(sensor)
CN	=	Cl.I Div. 2, GP A-D	(transmitter)
		Cl.I Div.1, Cl.II,III, GP A-G	(sensor)
CS	=	Cl.I Div. 2, GP A-D	(transmitter + sensor)
CZ	=	Ex ec IIC T5…T4 Gc	(transmitter)
		Ex ec IIC T5…T1 Gc	(sensor)
C1	=	Ex db eb [ia] IIB T6…T5 Gb	(transmitter)
		Ex ia IIB T6…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
C2	=	Ex db eb [ia] IIC T6…T5 Gb	(transmitter)
		Ex ia IIC T6…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
C3	=	Ex db [ia] IIB T6…T5 Gb	(transmitter)
		Ex ia IIB T6…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
C4	=	Ex db [ia] IIC T6…T5 Gb	(transmitter)
		Ex ia IIC T6…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
C5	=	Ex ec IIC T5…T4 Gc	(transmitter)
		Ex ia IIB T6…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)
C6	=	Ex ec IIC T5…T4 Gc	(transmitter)
		Ex ia IIC T5…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)

e = Power Supply
- D = 24Vdc
- E = 100-230Vac
- I = 100-230Vac / 24Vdc
- X = sensor only

ff = Input / Output 1
- BA = 4-20mA HART
- BB = 4-20mA WHART
- CA = 4-20mA HART Ex i (passive)
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)
- GA = Profibus PA
- HA = Profibus PA Ex i
- LA = Profibus DP
- MA = Modbus RS485
- MB = Modbus TCP
- MC = Modbus TCP Ex i
- NA = EtherNet/IP
- RA = Profinet IO
- RB = Profinet
- RC = Profinet Ex i
- SA = Foundation Fieldbus
- TA = Foundation Fieldbus Ex i
- XX = sensor only

g = Input / Output 2
- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

h = **Input / Output 3**
- A = without Input/Output 3
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

i = **Input / Output 4** (Proline 500 only)
- A = without Input/Output 4
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

j = **Display / Operation**
with remote Display : O
without remote Display : any single number or letter except O

k = **Integrated ISEM electronic** (Proline 500 only)
- A = Sensor
- B = Transmitter

l = **Housing** (Proline 300 only)
any single number or letter

m = **Transmitter Housing** (Proline 500 only)
any single number or letter

n = **Sensor Housing** (Proline 500 only)
any single number or letter

o = **Cable Sensor Connection** (Proline 500 only)
any single number or letter

p = **Cable Entry**
any single number or letter

qq = Upgrade Kit
any double digits with combination of number or letter
rr = Existing Product (see assignment of flowmeter to replacement transmitter)
any double digits with combination of number or letter
ss = Measuring tube material
any double digits with combination of number or letter
ttt = Process connection
any triple digits with combination of number or letter
v = Calibration
any single number or letter
ww = Device model (two digit) **(refer to table below for assignment of flowmeter to replacement of transmitter)**
A1 = product version 1
A2 = product version 2
yy = Customer version (two digit)
any double digits with combination of number or letter
**** = Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter
#, + = Signs used as indicator for optional abbreviation of extended order code

Proline Promag 300/500

Extended order code Proline Promag 300:

5a3bcc – ddzeffghjlpstttuvww + ##**	
O5a3bcc – ddzeffghjlpstttuvwwyy + ##**	for OEM-version
5x3bxx – ddeffghjlpww + ##**	for replacement transmitter only
O5x3bxx – ddeffghjlpwwyy + ##**	for replacement transmitter OEM

Extended order code Proline Promag 500:

5a5bcc – ddzeffghijkmnopstttuvww + ##**	
O5a5bcc – ddzeffghijkmnopstttuvwwyy + ##**	for OEM-version
5x5bxx – ddeffghijkmopqqww + ##**	for replacement transmitter only
O5x5bxx – ddeffghijkmopqqwwyy + ##**	for replacement transmitter OEM

a = Type of sensor
H = Sensor Promag H
P = Sensor Promag P
W = Sensor Promag W
b = Generation
B = Generation of Flowmeter
cc = Size
any combination of number and/or letter up to size = DN3000
dd = Approval

Proline Promag 300:

CD	=	Cl.I Div.1, Cl.II,III, GP A-G
CE	=	Cl.I Div.1, GP A-D
CS	=	Cl.I Div. 2, GP A-D
CZ	=	Ex ec IIC T5…T1 Gb
C2	=	Ex db eb [ia] IIC T6…T1 Gb
		Ex tb IIIC T** Db
C4	=	Ex db [ia] IIC T6…T1 Gb
		Ex tb IIIC T** Db

Proline Promag 500:

CD	=	Cl.I Div.1, Cl.II,III, GP A-G	(transmitter + sensor)
CE	=	Cl.I Div.1, GP A-D	(transmitter + sensor)
CN	=	Cl.I Div. 2, GP A-D	(transmitter)
		Cl.I Div.1, Cl.II,III, GP A-G	(sensor)
CS	=	Cl.I Div. 2, GP A-D	(transmitter + sensor)
CZ	=	Ex ec IIC T5…T4 Gc	(transmitter)
		Ex ec IIC T5…T1 Gc	(sensor)
C2	=	Ex db eb [ia] IIC T6…T5 Gb	(transmitter)
		Ex eb ia IIC T6…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
C4	=	Ex db [ia] IIC T6…T5 Gb	(transmitter)
		Ex eb ia IIC T6…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
C6	=	Ex ec IIC T5…T1 Gc	(transmitter)
		Ex db ia IIC T6…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)
C7	=	Ex db eb [ia] IIC T6…T5 Gb	(transmitter)
		Ex eb ia IIC T6…T1 Gb	(sensor)
C8	=	Ex db [ia] IIC T6…T5 Gb	(transmitter)
		Ex eb ia IIC T6…T1 Gb	(sensor)

z = **Design** (Promag W 300 and Promag W 500 only)
any single number or letter

e = **Power Supply**

D	=	24Vdc
E	=	100-230Vac
I	=	100-230Vac / 24Vdc
X	=	sensor only

ff = Input / Output 1

- BA = 4-20mA HART
- BB = 4-20mA WHART
- CA = 4-20mA HART Ex i (passive)
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)
- GA = Profibus PA
- HA = Profibus PA Ex i
- LA = Profibus DP
- MA = Modbus RS485
- MB = Modbus TCP
- MC = Modbus TCP Ex i
- NA = EtherNet/IP
- RA = Profinet IO
- RB = Profinet
- RC = Profinet Ex i
- SA = Foundation Fieldbus
- TA = Foundation Fieldbus Ex i
- XX = sensor only

g = Input / Output 2

- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

h = Input / Output 3

- A = without Input/Output 3
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted

G = Pulse/Frequency/Switch output Ex i
H = Relay
I = 4-20mA input
J = Status input
L = Pulse output Ex i
K = Pulse output
X = sensor only

i = **Input / Output 4** (Proline 500 only)
A = without Input/Output 4
B = 4-20mA
C = 4-20mA Ex i (passive)
D = Configurable IO
E = Pulse/Frequency/Switch output
F = Pulse output phase-shifted
G = Pulse/Frequency/Switch output Ex i
H = Relay
I = 4-20mA input
J = Status input
L = Pulse output Ex i
K = Pulse output
X = sensor only

j = **Display / Operation**
with remote Display : O
without remote Display : any single number or letter except O

k = **Integrated ISEM electronic** (Proline 500 only)
A = Sensor
B = Transmitter

l = **Housing** (Proline 300 only)
any single number or letter

m = **Transmitter Housing** (Proline 500 only)
any single number or letter

n = **Sensor Housing** (Proline 500 only)
any single number or letter

o = **Cable Sensor Connection** (Proline 500 only)
any single number or letter

p = **Cable Entry**
any single number or letter

qq = **Upgrade Kit**
any double digits with combination of number or letter

s = **Liner material**
any single number or letter

ttt = **Process connection**
any triple digits with combination of number or letter

u = Electrode
any number or letter
v = Calibration
any single number or letter
ww = Device Model (two digit) **(refer to table below for assignment of flowmeter to replacement of transmitter)**
A1 = product version 1
A2 = product version 2
yy = Customer version (two digit)
any double digits with combination of number or letter
**** = Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter
#, + = Signs used as indicator for optional abbreviation of extended order code

Proline Prosonic Flow 300/500

Proline Prosonic Flow G 300/500

Extended order code Proline Prosonic Flow G 300:

9G3bcc – ddeffghjlpsstuuuvww + ##**	
O9G3bcc – ddeffghjlpsstuuuvwwyy + ##**	for OEM-version
9x3bxx – ddeffghjlprrssww + ##**	for replacement transmitter
O9x3bxx – ddeffghjlprrsswwyy + ##**	for replacement transmitter OEM

Extended order code Proline Prosonic Flow G 500:

9G5bcc – ddeffghijkmnopsstuuuvww + ##**	
O9G5bcc – ddeffghijkmnopsstuuuvwwyy + ##**	for OEM-version
9x5bxx – ddeffghijkmopqqrrssww + ##**	for replacement transmitter
O9x5bxx – ddeffghijkmopqqrrsswwyy + ##**	for replacement transmitter OEM

b = Generation
B = Generation of Flowmeter
cc = Size
any double digits with combination of number or letter
dd = Approval
Proline Prosonic Flow G 300:
CD = Cl.I Div.1, Cl.II,III, GP A-G
CE = Cl.I Div.1, GP A-D
CS = Cl.I Div. 2, GP A-D
CZ = Ex ec IIC T5…T1 Gc
C2 = Ex db eb [ia] IIC T6…T1 Gb
Ex tb IIIC T** Db
C4 = Ex db [ia] IIC T6…T1 Gb
Ex tb IIIC T** Db

Proline Prosonic Flow G 500:

CN	=	Cl.I Div. 2, GP AD	(transmitter)
		Cl.I Div.1, Cl.II,III, GP A-G	(sensor)
CS	=	Cl.I Div. 2, GP A-D	(transmitter + sensor)
CZ	=	Ex ec IIC T5…T4 Gc	(transmitter)
		Ex ec IIC T5…T1 Gc	(sensor)
C6	=	Ex ec IIC T5…T4 Gc	(transmitter)
		Ex db ia IIC T5…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)

e = Power Supply
- D = 24Vdc
- E = 100-230Vac
- I = 100-230Vac / 24Vdc
- X = sensor only

ff = Input / Output 1
- BA = 4-20mA HART
- BB = 4-20mA WHART
- CA = 4-20mA HART Ex i (passive)
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)
- GA = Profibus PA
- HA = Profibus PA Ex i
- LA = Profibus DP
- MA = Modbus RS485
- MB = Modbus TCP
- MC = Modbus TCP Ex i
- NA = EtherNet/IP
- RA = Profinet IO
- RB = Profinet
- RC = Profinet Ex i
- SA = Foundation Fieldbus
- TA = Foundation Fieldbus Ex i
- XX = sensor only

g = Input / Output 2
- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay

I = 4-20mA input
J = Status input
K = Pulse output Ex i
L = Pulse output
X = sensor only

h = Input / Output 3

A = without Input/Output 3
B = 4-20mA
C = 4-20mA Ex i (passive)
D = Configurable IO
E = Pulse/Frequency/Switch output
F = Pulse output phase-shifted
G = Pulse/Frequency/Switch output Ex i
H = Relay
I = 4-20mA input
J = Status input
K = Pulse output Ex i
L = Pulse output
X = sensor only

i = Input / Output 4 (Proline 500 only)

A = without Input/Output 4
B = 4-20mA
C = 4-20mA Ex i (passive)
D = Configurable IO
E = Pulse/Frequency/Switch output
F = Pulse output phase-shifted
G = Pulse/Frequency/Switch output Ex i
H = Relay
I = 4-20mA input
J = Status input
K = Pulse output Ex i
L = Pulse output
X = sensor only

j = Display / Operation

with remote Display : O
without remote Display : any single number or letter except O

k = Integrated ISEM electronic (Proline 500 only)

A = Sensor

l = Housing (Proline 300 only)

any single number or letter

m = Transmitter Housing (Proline 500 only)

any single number or letter

n = Sensor Housing (Proline 500 only)

any single number or letter

o = **Cable Sensor Connection** (Proline 500 only)
any single number or letter
p = **Cable Entry**
any single number or letter
qq = **Upgrade Kit**
any double digits with combination of number or letter
rr = **Existing Product** (see assignment of flowmeter to replacement transmitter)
GA = Prosonic Flow G
00 = not used
ss = **Measuring tube material, sensor version**
any double digits with combination of number or letter
t = **Pressure component**
any single number or letter
uuu = **Process connection**
any triple digits with combination of number or letter
v = **Calibration**
any single number or letter
ww = **Device model (two digit)**
A1 = product version 1
A2 = product version 2
yy = **Customer version (two digits)**
any double digits with combination of number or letter
****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter
#, + = **Signs used as indicator for optional abbreviation of extended order code**

Proline Prosonic Flow P 500

Extended order code Proline Prosonic Flow P 500:

9P5bcc – ddeffghjkmosstuuvvww + ##**
O9P5bcc – ddeffghjkmosstuuvvwwyy + ##** for OEM-version
9x5bxx – ddeffghijkmnopprrsswww + ##** for replacement transmitter
O9x5bxx – ddeffghijkmnopprrsswwyy + ##** for replacement transmitter OEM

b = **Generation**
B = Generation of Flowmeter
cc = **Mounting Type**
any double digits with combination of number and/or letter

dd = **Approval Transmitter**
CD = Cl.I Div.1, Cl.II,III, GP A-G
CS = Cl.I Div. 2, GP A-D
CZ = Ex ec IIC T5…T4 Gc (transmitter)
Ex ic IIC T6…T1 Gc (Sensor)

	C2 =	Ex db eb [ia] IIC T6…T5 Gb	(transmitter)
		Ex tb IIIC T** Db	(transmitter)
		Ex ia IIC T6…T1 Gb	(Sensor)
		Ex ia IIIC T** Db	(Sensor)
	C4 =	Ex db [ia] IIC T6…T5 Gb	(transmitter)
		Ex tb IIIC T** Db	(transmitter)
		Ex ia IIC T6…T1 Gb	(Sensor)
		Ex ia IIIC T** Db	(Sensor)

e = Power Supply

- D = 24Vdc
- E = 100-230Vac
- I = 100-230Vac / 24Vdc

ff = Input / Output 1

- BA = 4-20mA HART
- BB = 4-20mA WHART
- CA = 4-20mA HART Ex i (passive)
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)
- GA = Profibus PA
- HA = Profibus PA Ex i
- LA = Profibus DP
- MA = Modbus RS485
- MB = Modbus TCP
- MC = Modbus TCP Ex i
- NA = EtherNet/IP
- RA = Profinet IO
- RB = Profinet
- RC = Profinet Ex i
- SA = Foundation Fieldbus
- TA = Foundation Fieldbus Ex i
- XX = Sensor only

g = Input / Output 2

- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input

K = Pulse output Ex i
L = Pulse output
X = Sensor only

h = Input / Output 3
A = without Input/Output 3
B = 4-20mA
C = 4-20mA Ex i (passive)
D = Configurable IO
E = Pulse/Frequency/Switch output
F = Pulse output phase-shifted
G = Pulse/Frequency/Switch output Ex i
H = Relay
I = 4-20mA input
J = Status input
K = Pulse output Ex i
L = Pulse output
X = Sensor only

i = Input / Output 4
A = without Input/Output 4
X = Sensor only

j = Display / Operation
any single number or letter

k = Integrated ISEM electronic
A = Sensor
B = Transmitter

m = Transmitter Housing
any single number or letter

n = Cable Sensor Connection
any single number or letter

o = Cable Entry
any single number or letter

pp = Upgrade Kit
AA = not used

rr = Existing Product (see assignment of flowmeter to replacement transmitter)
PA = Prosonic Flow P 500
00 = not used

ss = Sensor type
any double digits with combination of number and/or letter

t = Process Temperature
any single number or letter

uu = Cable
any double digits with combination of number and/or letter

vv = Installation set
any double digits with combination of number and/or letter

ww = **Device model (two digit)** (see assignment of flowmeter to replacement transmitter)
A2 = product version 2
yy = **Customer version (two digits)**
any double digits with combination of number or letter

****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter
#, + = **Signs used as indicator for optional abbreviation of extended order code**

Extended order code Proline Prosonic Flow P 500 Clamp-On sensor:
DK9013 – ddqqrww + ##**
ODK9013 – ddqqrwwyy + ##** for OEM-version

dd = **Approval**
CD = Cl.I Div.1, Cl.II,III, GP A-G
CS = Cl.I Div. 2, GP A-D
CZ = Ex icIIC T6…T1 Gc
C2 = Ex ia IIC T6…T1 Gb
Ex ia IIIC T** °C Db
C4 = Ex ia IIC T6…T1 Gb
Ex ia IIIC T** °C Db
qq = **Sensor type**
any double digits with combination of number and/or letter
r = **Process Temperature**
any single number or letter
ww = **Device model (two digit)** (see assignment of flowmeter to replacement transmitter)
00 = not used
yy = **Customer version (two digits)**
any double digits with combination of number or letter

****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter
#, + = **Signs used as indicator for optional abbreviation of extended order code**

Note: Clamp-On sensor types DK9013 and ODK9013 are intended for use as replacement of sensors for product Prosonic Flow P 500 types 9P5B and O9P5B or for extension of Prosonic Flow P 500 types 9P5B and O9P5B from one sensor set to two sensor sets

Proline t-mass 300/500

Extended order code Proline t-mass 300:
6F3bcc – ddeffghjlpsstttvww + ##**
6I3bcc – ddeffghjlpsstttuuvww + ##**
O6F3bcc – ddeffghjlpsstttvwwyy + ##** for OEM-version

O6I3bcc – ddeffghjlpsstttuuvwwyy + ##** for OEM-version
6x3bxx – ddeffghjlpssww + ##** for replacement transmitter
O6x3bxx – ddeffghjlpsswwyy + ##** for replacement transmitter OEM

Extended order code Proline t-mass 500:

6F5bcc – ddeffghijkmnopsstttvww + ##**
6I5bcc – ddeffghijkmnopsstttuuvww + ##**
O6F5cc – ddeffghijkmnopsstttvwwyy + ##** for OEM-version
O6I5cc – ddeffghijkmnopsstttuuvwwyy + ##** for OEM-version
6x5bxx – ddeffghijkmopssww + ##** for replacement transmitter
O6x5bxx – ddeffghijkmopsswwyy + ##** for replacement transmitter OEM

b = Generation
B = Generation of Flowmeter

cc = Size
any combination of number and/or letter up to size = DN100 (t-mass F) / 1500mm (t-mass I)

dd = Approval

Proline t-mass 300:

CD	=	Cl.I Div.1, Cl.II,III, GP A-G
CE	=	Cl.I Div.1, GP A-D
CS	=	Cl.I Div. 2, GP A-D
CZ	=	Ex ec IIC T4…T1 Gc
C2	=	Ex db eb [ia] IIC T4…T1 Gb Ex tb IIIC T** Db
C4	=	Ex db [ia] IIC T4…T1 Gb Ex tb IIIC T** Db

Proline t-mass 500:

CN	=	Cl.I Div. 2, GP CD	(transmitter)
		Cl.I Div.1, Cl.II,III, GP A-G	(sensor)
CS	=	Cl.I Div. 2, GP A-D	(transmitter + sensor)
CZ	=	Ex ec IIC T5…T4 Gc	(transmitter)
		Ex ec IIC T4…T1 Gc	(sensor)
C6	=	Ex ec IIC T5…T4 Gc	(transmitter)
		Ex db ia IIC T4…T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)

e = Power Supply

D	=	24Vdc
E	=	100-230Vac
I	=	100-230Vac / 24Vdc
X	=	sensor only

ff = Input / Output 1

- BA = 4-20mA HART
- BB = 4-20mA WHART
- CA = 4-20mA HART Ex i (passive)
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)
- GA = Profibus PA
- HA = Profibus PA Ex i
- LA = Profibus DP
- MA = Modbus RS485
- MB = Modbus TCP
- MC = Modbus TCP Ex i
- NA = EtherNet/IP
- RA = Profinet IO
- RB = Profinet
- RC = Profinet Ex i
- SA = Foundation Fieldbus
- TA = Foundation Fieldbus Ex i
- XX = sensor only

g = Input / Output 2

- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- K = Pulse output Ex i
- L = Pulse output
- X = sensor only

h = Input / Output 3

- A = without Input/Output 3
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input

K = Pulse output Ex i
L = Pulse output
X = sensor only

i = Input / Output 4 (Proline 500 only)
A = without Input/Output 4
B = 4-20mA
C = 4-20mA Ex i (passive)
D = Configurable IO
E = Pulse/Frequency/Switch output
F = Pulse output phase-shifted
G = Pulse/Frequency/Switch output Ex i
H = Relay
I = 4-20mA input
J = Status input
K = Pulse output Ex i
L = Pulse output
X = sensor only

j = Display / Operation
with remote Display : O
without remote Display : any single number or letter except O

k = Integrated ISEM electronic (Proline 500 only)
A = Sensor

l = Housing (Proline 300 only)
any single number or letter

m = Transmitter Housing (Proline 500 only)
any single number or letter

n = Sensor Housing (Proline 500 only)
any single number or letter

o = Cable Sensor Connection (Proline 500 only)
any single number or letter

p = Cable Entry
any single number or letter

ss = material sensor
any double digits with combination of number or letter

ttt = Process connection
any triple digits with combination of number or letter

uu = gasket
any double number or letter

v = Calibration
any single number or letter

ww = Device Model (two digit)
A1 = product version 1
A2 = product version 2

yy = Customer version (two digits)
any double digits with combination of number or letter

****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter
#, + = **Signs used as indicator for optional abbreviation of extended order code**

Proline Teqwave M 300/500

Extended order code Proline Teqwave M 300:

4a3bcc – ddeffghjlpstttww + ##**	
O4a3bcc – ddeffghjlpstttwwyy + ##**	for OEM-version
4x3bxx – ddeffghjlpww + ##**	for replacement transmitter
O4x3bxx – ddeffghjlpwwyy + ##**	for replacement transmitter OEM

Extended order code Proline Teqwave M 500:

4a5bcc – ddeffghijkmnopstttww + ##**	
O4a5cc – ddeffghijkmnopstttwwyy + ##**	for OEM-version
4x5bxx – ddeffghijkmopww + ##**	for replacement transmitter
O4x5bxx – ddeffghijkmopwwyy + ##**	for replacement transmitter OEM

a = **Type of sensor**
W = Teqwave MW

b = **Generation**
B = Generation of Flowmeter

cc = **Size**
any combination of number and/or letter up to size = DN300

dd = Proline Teqwave M 300:
CS = Cl.I Div. 2, GP A-D
CZ = Ex ec IIC T5…T1 Gc

Proline Teqwave M 500:

CS =	Cl.I Div. 2, GP A-D	(transmitter + sensor)
CZ =	Ex ec IIC T5…T4 Gc	(transmitter)
	Ex ec IIC T6…T1 Gc	(sensor)

e = **Power Supply**
I = 100-230Vac / 24Vdc
X = sensor only

ff = **Input / Output 1**
BA = 4-20mA HART
BB = 4-20mA WHART
CA = 4-20mA HART Ex i (passive)
CB = 4-20mA WHART Ex i (passive)
CC = 4-20Ma HART Ex i (active)
CD = 4-20mA WHART Ex i (active)
GA = Profibus PA
HA = Profibus PA Ex i

LA = Profibus DP
MA = Modbus RS485
MB = Modbus TCP
MC = Modbus TCP Ex i
NA = EtherNet/IP
RA = Profinet IO
RB = Profinet
RC = Profinet Ex I
SA = Foundation Fieldbus
TA = Foundation Fieldbus Ex i
XX = sensor only

g = Input / Output 2

A = without Input/Output 2
B = 4-20mA
C = 4-20mA Ex i (passive)
D = Configurable IO
E = Pulse/Frequency/Switch output
F = Pulse output phase-shifted
G = Pulse/Frequency/Switch output Ex i
H = Relay
I = 4-20mA input
J = Status input
K = Pulse output Ex i
L = Pulse output
X = sensor only

h = Input / Output 3

A = without Input/Output 3
B = 4-20mA
C = 4-20mA Ex i (passive)
D = Configurable IO
E = Pulse/Frequency/Switch output
F = Pulse output phase-shifted
G = Pulse/Frequency/Switch output Ex i
H = Relay
I = 4-20mA input
J = Status input
K = Pulse output Ex i
L = Pulse output
X = sensor only

i = **Input / Output 4** (Proline 500 only)
- A = without Input/Output 4
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- K = Pulse output Ex i
- L = Pulse output
- X = sensor only

j = **Display / Operation**
with remote Display : O
without remote Display : any single number or letter except O

k = **Integrated ISEM electronic** (Proline 500 only)
- A = sensor

l = **Housing** (Proline 300 only)
any single number or letter

m = **Transmitter Housing** (Proline 500 only)
any single number or letter

n = **Sensor Housing** (Proline 500 only)
any single number or letter

o = **Cable Sensor Connection** (Proline 500 only)
any single number or letter

p = **Cable Entry**
any single number or letter

s = **Design**
any single number or letter

ttt = **Process connection**
any triple digits with combination of number or letter

ww = **Device Model (two digits)** (see assignment of flowmeter to replacement transmitter)
- A2 = product version 2

yy = **Customer version (two digits)**
any double digits with combination of number or letter

****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter

#, + = **Signs used as indicator for optional abbreviation of extended order code**

Assignment of Flowmeter to Replacement Transmitter

The replacement transmitters are assigned to the flowmeters Proline Promass 300/500, Proline Cubemass 300/500, Proline Promag 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500 and Proline Teqwave M 300/500 as follows:

Product flowmeters			Replacement transmitter type			
Order code	**Generation code b =**	**device model code ww =**	**Order code**	**Generation code b =**	**existing product rr =**	**device model code ww =**
4W*b**-…ww, O4W*b**-…ww	B	A2	4x*bxx-…ww, O4x*bxx-…ww	B	n.a.	A2
5H*b**-…ww, O5H*b**-…ww	B	A1 / A2	5x*bxx-…ww, O5x*bxx-…ww	B	n.a.	A1 / A2
5P*b**-…ww, O5P*b**-…ww	B	A1 / A2	5x*bxx-…ww, O5x*bxx-…ww	B	n.a.	A1 / A2
5W*b**-…ww, O5W*b**-…ww	B	A1 / A2	5x*bxx-…ww, O5x*bxx-…ww	B	n.a.	A1 / A2
6F*b**-…ww, O6F*b**-…ww	B	A1 / A2	6x*bxx…ww, O6x*bxx-…ww	B	n.a.	A1 / A2
6I*b**-…ww, O6I*b**-…ww	B	A1 / A2	6x*bxx-…ww, O6x*bxx-…ww	B	n.a.	A1 / A2
8A*b**-…ww, O8A*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	AA (all sizes)	A1 / A2
8A*b**-…ww, O8A*b**-…ww	C	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	AB (all sizes)	A1 / A2
8C*b**-…ww, O8C*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr …ww	B	CA (all sizes)	A1 / A2
8E*b**-…ww, O8E*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	EA (DN8…15)	A1 / A2
			8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	EB (DN25…50)	A1 / A2
			8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	EC (DN80)	A1 / A2
8F*b**-…ww, O8F*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	FA (DN8…15)	A1 / A2
			8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	FB (DN25…50)	A1 / A2
			8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	FC (DB80…250)	A1 / A2
8H*b**-…ww, O8H*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	HA (DN8…40)	A1 / A2
			8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	HB (DN50)	A1 / A2
8I*b**-…ww, O8I*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	IA (DN8…40)	A1 / A2
			8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	IB (DN40FB…80)	A1 / A2
8O*b**-…ww, O8O*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	OA (all sizes)	A1 / A2
8P*b**-…ww, O8P*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	PA (DN8…40)	A1 / A2
			8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	PB (DN50)	A1 / A2
8Q*b**-…ww, O8Q*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	QA (DN25…50)	A1 / A2
			8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	QB (DN80…100)	A1 / A2
			8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	QC (DN150…250)	A1 / A2
8S*b**-…ww, O8S*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	SA (DN8…40)	A1 / A2
			8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	SB (DN50)	A1 / A2
8X*b**-…ww, O8X*b**-…ww	B	A1 / A2	8x*bxx-…rr…ww, O8x*bxx-…rr…ww	B	XA (all sizes)	A1 / A2
9G*b**-…ww, O9G*b**-…ww	B	A1 / A2	9x*bxx-…pp…ww, O9x*bxx-…pp…ww	B	GA (all sizes)	A1 / A2
9P*b**-…ww, O9P*b**-…ww	B	A1 / A2	9x*bxx-…pp…ww, O9x*bxx-…pp…ww	B	PA (all versions)	A1 / A2

Conditions of Acceptability:

Applicable to all Proline 300/500 Flowmeters:

- All equipment of the measurement system shall be included in the equipotential bonding. Along the intrinsically safe sensor circuits potential equalization must exist.
- The sensors may only be used for those process media, for which the wetted parts are known to be suitable.
- The equipment may have non-conductive surfaces which are a potential electrostatic charging hazard – see instructions for guidance.
- Antenna supplied by Endress+Hauser shall be used only. As an alternate, any passive omni-directional RF antenna with or without cable is permitted to be connected when meeting the following parameters:
  - The antenna shall have an impedance of at least 50Ω
  - The rated frequency range of the antenna shall not exceed 1710MHz … 6000MHz
  - The RF antenna or the RF antenna cable shall be fitted with a Type N connector plug (MIL-STD-348)
- The antenna bushing type H337 shall be mounted wrench tight to the transmitter enclosure to maintain the ingress protection of the enclosure.
- The coupling nut of the Type N plug connector shall be hand tightened only.
- The metal enclosure of the Antenna Bushing H337 shall be securely connected to local earth, typically via the enclosure to which it is connected.
- If the flowmeter system is connected to remote display type DKX001, the approval codes ‘dd’ for the flowmeter shall be paired to the approval code “bb” of the remote display as follows:

Approval code ‘dd’ of Proline Promass, Cubemass, Promag, Prosonic Flow, t-mass and Teqwave M	Approval code ‘bb’ of remote display DKX001/ODKX001 as covered by CSA 160686-70030937
CC, CD or CE	CE or CG
C1, C2, C3, C4, C7, C8	CI, CK or CL
CS	CS
CZ	CZ

- Only use battery Renata type lithium CR1632, 3V.
- The flameproof joints are not intended to be repaired.
- For Proline Promass 300/500, Proline Cubemass 300/500with order code ‘dd’ = C1, C2, C3, C4, C5 & C6:
  Zone 0 is only applicable to sensor with process medium in the measuring tube.
- For Proline t-mass 300/500 with order code ‘dd’ = C2, C4 & C6:
  Zone 0 is only applicable to sensor with process medium in the measuring tube.

Additional conditions applicable to Proline Promass 300/500 and Proline Cubemass 300/500:

- All transmitters certified for Class I, Division 1 are factory sealed and do not require external seals. These factory seals are only valid when used in -40°C or higher ambient temperatures.
- All sensors for the Proline Promass 300/500 flowmeter systems are assessed as dual seal devices. Refer to the markings on the sensor for the maximum working pressures.

Additional conditions applicable to Proline Promag 300/500:

- All transmitters certified for Class I, Division 1 are factory sealed and do not require external seals. These factory seals are only valid when used in -40°C or higher ambient temperatures. Remote enclosures assembled on the sensor certified for Class I, Division 1 are also factory sealed however they do not have an ambient temperature limitation.
- All sensors for the Proline Promag 300/500 flowmeter systems are assessed as single seal devices. Refer to the markings on the sensor for the maximum working pressures.
- For remote versions of Promag flowmeters with a flat gasket within the sensor terminal box, the user shall ensure that flat cover seals are not bent into the seal surface before securing the cover. Seals that are not flat shall be replaced.
- The Proline Promag 300/500 Flowmeter that may include non-conductive surfaces of sensor enclosure housing, shall be prevented from risk of electrostatic charging caused by friction and/or cleaning. The equipment nameplate shall bear the following warning: WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS

Additional conditions applicable to Proline Prosonic Flow 300/500:

- All transmitters certified for Class I, Division 1 are factory sealed and do not require external seals. These factory seals are only valid when used in -40°C or higher ambient temperatures. Remote enclosures assembled on the sensor certified for Class I, Division 1 are also factory sealed however they do not have an ambient temperature limitation.
- The sensor for the Proline Prosonic Flow G 300/500 flowmeter system is assessed as dual seal devices. Refer to the markings on the sensor for the maximum working pressures.

Additional conditions applicable to Proline t-mass 300/500:

- All transmitters certified for Class I, Division 1 are factory sealed and do not require external seals. These factory seals are only valid when used in -40°C or higher ambient temperatures. Remote enclosures assembled on the sensor certified for Class I, Division 1 are also factory sealed however they do not have an ambient temperature limitation.
- All sensors for the Proline t-mass 300/500 flowmeter systems are assessed as single seal devices. Refer to the markings on the sensor for the maximum working pressures.

Applicable for Proline transmitter hygienic SS enclosure housing G306:

- For the G306 enclosure when forming part of an Ex-Equipment, first the covers shall be made hand-tight and then an additional 45 degrees turn tightening shall be applied to them.
- The thread form of the threaded entries of the G306 enclosure when forming part of an Ex-Equipment shall be marked on the equipment or shall appear in the installation instructions.
- Transmitter shall not be installed vertically above the sensor.

APPLICABLE REQUIREMENTS

CAN/CSA C22.2 No. 61010-1-12 UPD1: 2015, UPD2: 2016, AMD1: 2018	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements - Third Edition
CSA C22.2 No. 213-2017, UPD1 (2018) + UPD2 (2019) + UPD3 (2021)	Nonincendive electrical equipment for use in Class I and II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations
CAN/CSA C22.2 No. 25-17	Enclosures for Use in Class II Groups E, F, G Hazardous Locations
CAN/CSA C22.2 No. 30-M1986 *(Reaffirmed 2016)*	Explosion-proof enclosures for use in class 1 hazardous locations
CAN/CSA-C22.2 No. 60079-0:19	Explosive Atmospheres - Part 0: Equipment - General requirements
CAN/CSA-C22.2 No. 60079-1:16	Explosive atmospheres — Part 1: Equipment protection by flameproof enclosures “d”
CAN/CSA-C22.2 No. 60079-7:16	Explosive Atmospheres – Part 7: Equipment protection by increased safety ″e″
CAN/CSA-C22.2 No. 60079-11:14	Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety "i"
CAN/CSA-C22.2 No. 60079-15:18	Explosive atmospheres — Part 15: Equipment protection by type of protection “n”
CAN/CSA-C22.2 No. 60079-26:16	Explosive atmospheres — Part 26: Equipment with Equipment Protection Level (EPL) Ga
CAN/CSA-C22.2 No. 60079-31:15	Explosive Atmospheres – Part 31: Equipment Dust Ignition Protection by Enclosure “t”
CAN/CSA-C22.2 No. 60079-47:22	Explosive atmospheres – Part 47: Equipment protection by 2-wire intrinsically safe Ethernet concept (2-WISE)
CAN/CSA C22.2 No. 94.2-15	Enclosures for Electrical Equipment, Environmental Considerations
ANSI/UL-61010-1 2018 3rd Edition	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements - Third Edition
ANSI/UL-121201-2021 9th Edition	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
FM 3600 (Jan. 2022)	Electrical Equipment for use in Hazardous (Classified) Locations General Requirements
FM 3615 (Jan. 2022)	Explosion proof Electrical Equipment General Requirements
FM 3610 (July 2021)	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II and III, Division 1, Hazardous (Classified) Locations
FM 3616 (Jan. 2022)	Dust-Ignition proof Electrical Equipment General Requirements
ANSI/UL 60079-0:2020 7th Edition	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements

Certificate: 70087366
Project: 80174206

Master Contract: 160686
Date Issued: 2024-03-20

ANSI/UL 60079-1-2015 7th Edition	Explosive Atmospheres – Part 1: Equipment Protection by Flameproof Enclosures “d”
ANSI/UL 60079-7-2021 5th Edition	Explosive Atmospheres – Part 7: Equipment protection by increased safety ″e″
ANSI/UL 60079-11:2018 6th Edition	Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety “i”
ANSI/UL-60079-15-2020 5th Edition	Explosive atmospheres – Part 15: Equipment protection by type of protection "n" (Edition 4)
ANSI/UL 60079-26:2017, 3rd Edition	Explosive atmospheres — Part 26: Equipment with Equipment Protection Level (EPL) Ga
ANSI/UL 60079-31:15 2nd Edition	Explosive Atmospheres – Part 31: Equipment Dust Ignition Protection by Enclosure “t”
ANSI/UL 60079-47:2022 1st Edition	Explosive atmospheres – Part 47: Equipment Protection by 2-Wire Intrinsically Safe Ethernet Concept (2-WISE)
ANSI/UL50E:2015 2nd Edition	Enclosures for Electrical Equipment, Environmental Considerations
ANSI/UL 122701-2017 3rd Edition	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids

Notes:

Products certified under Class C225802, C225803, C225804, C225882, C225883, C225884 have been certified under CSA’s ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca

Proline Promag 300/500 – Proline Promass 300/500 – Proline Prosonic Flow 300/500 – Proline t-mas 300/500 – Proline Teqwave M 300/500

Notes:

This page applies to versions with extended order code covering: approval options cCSAus / CSA: CC, CD, CE, C1, C2, C3, C4, C7, C8
IECEx / ATEX: BA, BB, BC, BD, B7, B8

Input / Output:

			IO's type of protection Non-intrinsically safe	IO's type of protection IS / Ex ia / AEx ia
IO1	IO options: HA, TA	Terminal No.: 26 and 27	---	Ui = 30V, Ii = 570mA, Pi = 8.5W Li = 10µH, Ci = 5nF
	IO options: CA, CB		---	Ui = 30V, Ii = 100mA, Pi = 1.25W Li = 0, Ci = 6nF
	IO options: CC, CD		---	Uo = 21.8V, Io = 90mA, Po = 491mW Lo = 4.1mH (IIC) / 15mH (IIB), Co = 160nF (IIC) / 1160nF (IIB) Ui = 30V, Ii = 10mA, Pi = 0.3W, Li = 5µH, Ci = 6nF
	IO options: RC, MC		---	Approval codes BA, BB, BC, BD, B7, B8, CC, CD, CE, C1, C2, C3, C4, C7, C8: 2-WISE power load APL port profile SLAA (see note 1) U_i = 17.5 V, I_i = 380 mA, P_i = 5.32 W, L_i ≤ 10 µH, C_i ≤ 5 nF
	IO options: BA, BB, MA		U_N = 30V_{DC}, U_M = 250V_{AC}	---
	IO options: LA, GA, SA		U_N = 32V_{DC}, U_M = 250V_{AC}	---
	IO options: RB, MB		APL port profile SLAX / SPE PoDL classes 10, 11, 12: U_N = 30V_{DC}, U_M = 250V_{AC}	---
	IO options: NA, RA	IO1 / RJ45	U_N = 30V_{DC}, U_M = 250V_{AC}	---
IO2	IO options: C, G, K	Terminal No.: 24 and 25	---	Ui = 30V, Ii = 100mA, Pi = 1.25W, Li = 0, Ci = 0
	IO options: B, D, E, F, I, J, L		U_N = 30V_{DC}, U_M = 250V_{AC}	---
	IO options: H		U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250V_{AC}	---
IO3	IO options: C, G, K	Terminal No.: 22 and 23	---	Ui = 30V, Ii = 100mA, Pi = 1.25W, Li = 0, Ci = 0
	IO options: B, D, E, F, I, J, L		U_N = 30V_{DC}, U_M = 250V_{AC}	---
	IO options: H		U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250V_{AC}	---
IO4	IO options: C, G, K	Terminal No.: 20 and 21	---	Ui = 30V, Ii = 100mA, Pi = 1.25W, Li = 0, Ci = 0
	IO options: B, D, E, F, I, J, L		U_N = 30V_{DC}, U_M = 250V_{AC}	---
	IO options: H		U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250V_{AC}	---

Power Supply:

		Type of protection Non-intrinsically safe
Power supply: option D	Terminal No.: 1(L+) and 2(L-)	U_N = 19.2…28.8V_{DC} U_M = 250V_{AC}
Power supply: option E	Terminal No.: 1(L) and 2(N)	U_N = 85…264V_{AC} U_M = 250V_{AC}

Notes:

1) for IO1 with IO option RC and MC refer to "Ethernet-APL Installation Drawing - Device End Users v1.0" 2-WISE power load port (6), available for download at https://www.ethernet-apl.org/library/

Aenderungen:					
	A	10.05.2016 / Bn	F	01.03.2023 / DOMI	
	B	20.04.2018 / Bn	G		
	C	10.07.2019 / Bn	H		
	D	29.09.2021 / Bn	J		
	E	12.07.2022 / Bn	K		

Ersetzt durch:

Ersatz für:

Ersteller: FES / Bn

FILE: M:\Zeichng\FES0259\E\FES0259F.doc

Control Drawing IECEx, ATEX, CSA, cCSAus

Zone 1, Zone 21, Cl.I Div.1, Div.2, Cl.II, Cl.III, Cl.I Zone 1, Cl.I Zone 2

Electrical Parameter Transmitter

Proline 300/500

Massstab

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	01.03.2023	DOMI
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

FES0259F

Proline Promag 300/500 – Proline Promass 300/500 – Proline Prosonic Flow 300/500 – Proline t-mas 300/500 – Proline Teqwave M 300/500

Notes:

This page applies to versions with extended order code covering: approval options: cCSAus / CSA: CS, CM, CN, CZ, C5, C6
IECEx / ATEX: BI, BJ, BL, BM, BN, BS

Input / Output:

			IO's type of protection Non-intrinsically safe	IO's type of protection NIFW / Ex ic / AEx ic
IO1	IO options: HA, TA	Terminal No.: 26 and 27	---	Ui = 32V, Ii = 570mA, Pi = 8.5W, Li = 10µH, Ci = 5nF
	IO options: CA, CB		---	Ui = 30V, Ii = 100mA, Pi = 1.25W, Li = 0, Ci = 6nF
	IO options: CC, CD		---	Uo = 21.8V, Io = 90mA, Po = 491mW Lo = 9mH (IIC) / 39mH (IIB), Co = 600nF (IIC) / 4000nF (IIB) Ui = 30V, Ii = 10mA, Pi = 0.3W, Li = 5µH, Ci = 6nF
	IO options: RC, MC		---	Approval codes BI, BJ, BL, BM, BN, BS, CS, CM, CN, CZ, C5, C6: 2-WISE power load APL port profile SLAC (see note 1) U_i = 17.5 V, I_i = 380 mA, P_i = 5.32 W, L_i ≤ 10 µH, C_i ≤ 5 nF
	IO options: BA, BB, MA		U_N = 30V_{DC}, U_M = 250V_{AC}	---
	IO options: LA, GA, SA		U_N = 32V_{DC}, U_M = 250V_{AC}	---
	IO options: RB, MB		APL port profile SLAX / SPE PoDL classes 10, 11, 12: U_N = 30V_{DC}, U_M = 250V_{AC}	---
	IO options: NA, RA	IO1 / RJ45	U_N = 30V_{DC}, U_M = 250V_{AC}	---
IO2	IO options: C, G, K	Terminal No.: 24 and 25	---	Ui = 30V, Ii = 100mA, Pi = 1.25W, Li = 0, Ci = 0
	IO options: B, D, E, F, I, J, L		U_N = 30V_{DC}, U_M = 250V_{AC}	---
	IO options: H		U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250V_{AC}	---
IO3	IO options: C, G, K	Terminal No.: 22 and 23	---	Ui = 30V, Ii = 100mA, Pi = 1.25W, Li = 0, Ci = 0
	IO options: B, D, E, F, I, J, L		U_N = 30V_{DC}, U_M = 250V_{AC}	---
	IO options: H		U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250V_{AC}	---
IO4	IO options: C, G, K	Terminal No.: 20 and 21	---	Ui = 30V, Ii = 100mA, Pi = 1.25W, Li = 0, Ci = 0
	IO options: B, D, E, F, I, J, L		U_N = 30V_{DC}, U_M = 250V_{AC}	---
	IO options: H		U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250V_{AC}	---

Power Supply:

		Type of protection Non-intrinsically safe
Power supply: option I	Terminal No.: 1(L+/L) and 2(L-/N)	U_N = 19.2…28.8V_{DC} / 85…264V_{AC} U_M = 250V_{AC}

Notes:

1) for IO1 with IO option RC and MC refer to "Ethernet-APL Installation Drawing - Device End Users v1.0" 2-WISE power load port (6), available for download at https://www.ethernet-apl.org/library/

Aenderungen:						Ersetzt durch:
	A	10.05.2016 / Bn	F	01.03.2023 / DOMI		Ersatz für:
	B	20.04.2018 / Bn	G			Ersteller: FES / Bn
	C	10.07.2019 / Bn	H			FILE: M:\Zeichng\FES0259\E\FES0259F.doc
	D	29.09.2021 / Bn	J			
	E	12.07.2022 / Bn	K			

Control Drawing IECEx, ATEX, CSA, $_C$CSA$_{US}$

Zone 1, Zone 21, Cl.I Div.1, Div.2, Cl.II, Cl.III, Cl.I Zone 1, Cl.I Zone 2

Electrical Parameter Transmitter

Proline 300/500

Massstab

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	01.03.2023	DOMI
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

Proline Promag 300/500 – Proline Promass 300/500 – Proline Prosonic Flow 300/500 – Proline t-mas 300/500 – Proline Teqwave M 300/500

Notes:

This page applies versions with extended order code covering:

approval options: cCSAus / CSA: CC, CD, CE, CM, CN, CS, CZ, C1, C2, C3, C4, C5, C6, C7, C8
IECEx / ATEX: BA, BB, BC, BD, BI, BJ, BL, BM, BN, BS, B7, B8,

Remote Display type DKX001

Proline 300/500 are intended to be connected to a remote display of Endress+Hauser type DKX001

Approval code: CC, CD, CE, C1, C2, C3, C4, C7, C8, BA, BB, BC, BD, B7, B8	Terminal No.: 81, 82, 83, 84	The connection circuit for Remote Display provides an intrinsically safe circuit with type of protection IS, Ex ia, AEx ia: Uo = 3.9V, Io = 1.5A (spark), 200mA (power), Po = 600mW, Ri = 2.6Ω, Co = 670µF, Lo = 0 Cable parameter L/R ≤ 0.024 mH/Ω for connection to Endress+Hauser Remote Display type DKX001
Approval code: CS, CZ, BS		U_N = 3.3V, I_N = 150mA
Approval code: CM, CN, C5, C6, BI, BJ, BL, BM, BN	Remote display type DKX001 is not intended to be connected to these transmitter electronics	

Service interface

Approval code: BA, BB, B7, C1, C2, C7	Terminal Service Interface	Service Interface shall only be installed: - in areas which are known to be non hazardous with a non intrinsically safe circuit U_N = 3.3 V, U_M = 250 V_{AC} or - to an intrinsically safe circuit with Ui = 10V, Ii = n.a., Pi = na., Ci = 200nF, Li = 0
Approval code: BC, BD, B8, CC, CD, CE, C3, C4, C8		Service Interface shall only be installed: - to an non intrinsically safe circuit with U_N = 3.3V, U_M = 250V_{AC} or - to an intrinsically safe circuit with Ui = 10V, Ii = n.a., Pi = na., Ci = 200nF, Li = 0
Approval code: BS, BI, BJ, BL, BM, BN, CS, CM, CN, CZ, C5, C6		U_N = 3.3V

Aenderungen:						Ersetzt durch: Ersatz für: Ersteller: FES / Bn FILE: M:\Zeichng\FES0259\E\FES0259F.doc
	A	10.05.2016 / Bn	F	01.03.2023 / DOMI		
	B	20.02.2018 / Bn	G			
	C	10.07.2019 / Bn	H			
	D	29.09.2021 / Bn	J			
	E	12.07.2022 / Bn	K			

Control Drawing IECEx, ATEX, CSA, $_C$CSA$_{US}$

Zone 1, Zone 21, Cl.I Div.1, Div.2, Cl.II, Cl.III, Cl.I Zone 1, Cl.I Zone 2

Electrical Parameter Transmitter

Proline 300/500

Massstab

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	01.03.2023	DOMI
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

Proline Promass A/E/F/H/I/O/P/Q/S/X 300 **Proline Cubemass C 300**

Notes: Pages 1 and 2 apply to versions with extended order code covering: 8*3B** – dd… O8*3B** – dd… 8x3Bxx – dd… O8x3Bxx – dd…
with approval option cCSAus / CSA: dd = CC, CD, CE, C1, C2, C3, C4
IECEx / ATEX: dd = BA, BB, BC, BD

Temperature table for versions with sensor not insulated

Sensor	Size / DN	T_{med}		$T_{a,max}$	$T_{med,max}$ (°C)					
		min (°C)	max (°C)	(°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01…04	-50	205	50	50	95	130	150	205	205
				60	---	95	130	150	205	205
Cubemass C	01…06	-50	205	50	50	95	130	150	205	205
				60	---	95	130	150	205	205
Promass E	08…50	-50	205	50	50	100	130	130	205	205
				55	---	80	100	130	205	205
				60	---	(80)	(100)	(130)	(205)	(205)
	80	-50	205	50	50	75	110	170	205	205
				55	---	75	110	170	205	205
				60	---	(75)	(110)	(170)	(205)	(205)
Promass F	08…15	-50	150	50	50	95	130	150	150	150
				60	---	95	130	150	150	150
		-50	240	50	50	95	130	160	240	240
				60	---	95	130	160	(240)	(240)
		-200	240	50	50	95	100	160	240	240
				60	---	95	100	160	(240)	(240)
	15…25	-50 / -200	350	50	45	95	130	175	275	350
				60	---	95	130	175	275	350
	25…40	-50	150	50	50	95	130	150	150	150
				60	---	95	130	150	150	150
		-50	240	50	50	95	130	170	240	240
				60	---	95	130	170	(240)	(240)
		-200	240	50	50	95	100	170	240	240
				60	---	95	100	170	(240)	(240)
	50	-50	150	50	50	95	130	150	150	150
				60	---	95	130	150	150	150
		-50	240	50	50	95	130	160	240	240
				60	---	95	130	160	(240)	(240)
		-200	240	50	50	95	100	160	240	240
				60	---	95	100	160	(240)	(240)
	80…250	-50	150	50	50	75	110	150	150	150
				60	---	75	110	150	150	150
		-50	240	50	50	75	110	170	240	240
				60	---	75	110	170	(240)	(240)
		-200	240	50	50	75	110	170	240	240
				60	---	75	110	170	(240)	(240)
	50…250	-50 / -200	350	50	45	85	120	175	275	350
				60	---	85	120	175	275	350
Promass H	8	-50 / -200	205	50	50	65	100	160	205	205
				60	---	65	100	160	205	205
	15…50	-50 / -200	205	50	50	75	115	180	205	205
				60	---	75	115	180	205	205
Promass S, P	8	-50	150	45	45	65	100	150	150	150
				60	---	65	100	150	150	150
		-50	205	45	45	65	100	160	205	205
				60	---	65	100	160	205	205
	15…50	-50	150	50	50	75	115	150	150	150
				60	---	75	115	150	150	150
		-50	205	50	50	75	115	180	205	205
				60	---	75	115	180	205	205

Sensor	Size / DN	T_{med}		$T_{a,max}$	$T_{med,max}$ (°C)					
		min (°C)	max (°C)	(°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass I	8, 15 15FB, 25	-50	150	50	50	95	130	150	150	150
				60	---	95	120	(150)	(150)	(150)
	25FB, 40 40FB, 50	-50	150	50	50	85	120	150	150	150
				60	---	85	120	(150)	(150)	(150)
	50FB, 80	-50	150	50	50	85	120	150	150	150
				60	---	85	120	(150)	(150)	(150)
Promass O	80…250	-50	205	50	50	75	110	170	205	205
				55	---	75	110	170	205	205
				60	---	75	110	170	(205)	(205)
Promass X	350	-50	205	50	50	90	120	170	205	205
				55	---	90	120	170	205	205
				60	---	(90)	(120)	(170)	(205)	(205)
Promass Q	25…250	-50 / -200	240	50	50	75	110	160	240	240
				60	---	75	110	160	240	240

Notes:
(1) Ta,min = -40°C, -50°C respectively (see nameplate)
(2) values in brackets are applicable for installation where the transmitter is not installed above the sensor
(3) for applicable version with maximum medium temperatue and minimum medium temperature see nameplate

Restriction of Ta,min for versions (Promass sensor F, H, Q) used at Tmed,min < -50°C

Tmed,min	-50°C	-75°C	-100°C	-125°C	-150°C	-175°C	-200°C
Ta,min	-50°C	-47°C	-45°C	-43°C	-41°C	-39°C	-37°C

Notes: (1) This table is applicable only for the Proline Promass 300 with Ex db or XP rated enclosures and for a period when the flowmeter is in non-operating condition, until the transmitter is heated up

Aenderungen:						Ersetzt durch:
	A	10.05.2016 / Bn	F	09.06.2021 / Bn		Ersatz für:
	B	24.10.2016 / Bn	G	15.07.2023 / DOMI		Ersteller: FES / Bn
	C	03.05.2017 / Bn	H			FILE: M:\Zeichng\FES0263\G\FES0263G.doc
	D	04.07.2018 / Bn	J			
	E	22.10.2019 / Bn	K			

Control Drawing IECEx, ATEX, CSA, cCSAus

Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1

Thermal Parameter

Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

Continued of previous page

Temperature table for versions with sensor insulated (for insulation refer to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T_{med} min (°C)	T_{med} max (°C)	$T_{a,max}$ (°C)	$T_{med,max}$ (°C) T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01 … 04	-50	205	50	50	95	130	150	205	205
				55	---	(95)	(130)	(150)	(205)	(205)
Cubemass C	01 … 06	-50	205	50	---	95	130	150	205	205
				55	---	(95)	(130)	(150)	(205)	(205)
Promass E	08 …50	-50	205	50	50	100	130	130	205	205
				55	---	(100)	(130)	(130)	(205)	(205)
	80	-50	205	45	50	75	110	170	205	205
				50	---	75	110	170	205	205
				55	---	(75)	(110)	(170)	(205)	(205)
Promass F	08 … 15	-50	150	50	50	95	130	150	150	150
				60	---	95	110	(150)	(150)	(150)
		-50 / -200	240	50	50	95	130	160	240	240
				55	---	95	(130)	(160)	(240)	(240)
				60	---	95	110	110	110	110
	15 … 25	-50 / -200	350	50	45	95	130	175	275	350
				60	---	95	130	175	275	350
	25 … 40	-50	150	50	50	95	130	150	150	150
				60	---	95	110	(150)	(150)	(150)
		-50 / -200	240	50	50	95	130	170	240	240
				55	---	95	(130)	(170)	(240)	(240)
				60	---	95	110	110	110	110
	50	-50	150	50	50	95	130	150	150	150
				60	---	95	110	(150)	(150)	(150)
		-50 / -200	240	50	50	95	130	160	240	240
				55	---	95	(130)	(160)	(240)	(240)
				60	---	95	110	110	110	110
	80 … 250	-50	150	50	50	75	110	150	150	150
				60	---	75	110	(150)	(150)	(150)
		-50 / -200	240	50	50	75	110	170	240	240
				55	---	75	110	(170)	(240)	(240)
				60	---	75	110	110	110	110
	50 … 250	-50 / -200	350	50	45	85	120	175	275	350
				60	---	85	120	175	275	350
Promass H	8	-50 / -200	205	50	50	65	100	160	205	205
				55	---	65	100	(160)	(205)	(205)
				60	---	65	100	100	100	100
	15 … 50	-50 / -200	205	50	50	75	115	180	205	205
				55	---	75	115	(180)	(205)	(205)
				60	---	75	115	115	115	115
Promass S, P	8	-50	150	45	45	65	100	150	150	150
				50	---	65	100	150	150	150
				60	---	65	100	125	(150)	(150)
		-50	205	45	45	65	100	160	205	205
				50	---	65	100	160	205	205
				60	---	65	100	115	(205)	(205)
	15 … 50	-50	150	50	50	75	115	150	150	150
				60	---	75	115	125	(150)	(150)
		-50	205	50	50	75	115	180	205	205
				60	---	75	115	(150)	(150)	(150)
Promass I	8, 15 15FB, 25	-50	150	50	50	95	130	150	150	150
				60	---	95	120	(150)	(150)	(150)
	25FB, 40 40FB, 50	-50	150	50	50	85	120	150	150	150
				60	---	85	120	(150)	(150)	(150)
	50FB, 80	-50	150	50	50	85	120	150	150	150
				60	---	85	120	(150)	(150)	(150)

Sensor	Size / DN	T_{med} min (°C)	T_{med} max (°C)	$T_{a,max}$ (°C)	$T_{med,max}$ (°C) T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass O	80 … 250	-50	205	50	50	75	110	170	205	205
				55	---	(75)	(110)	(170)	(205)	(205)
Promass X	350	-50	205	50	50	90	120	170	205	205
				55	---	(90)	(120)	(170)	(205)	(205)
Promass Q	25 … 250	-50 / -200	240	50	50	75	110	160	240	240
				55	---	(75)	(110)	(160)	(240)	(240)

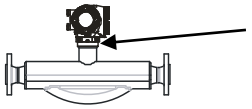
Notes:
(1) Ta,min = -40°C, -50°C respectively (see nameplate)
(2) values in brackets are applicable for installation where the transmitter is not installed above the sensor
(3) for applicable version with maximum medium temperatue and minimum medium temperature see nameplate

Temperature table for versions with sensor insulated (for insulation not in compliance to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T_{max} to be measured at reference point at sensor neck (°C) T6 (85C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	all	59	72	75	76	77	77

Notes:
(1) for safe use temperatures shall not exceed all of the following:
- temperature table for versions with sensor not insulated (refer to table above)
- temperature at reference point as listed in this table
- Ta,min = -40°C, -50°C respectively (see nameplate)
- for maximum medium temperatue and minimum medium temperature see nameplate

(2) location of reference point



Restriction of Ta,min for versions (Promass sensor F, H, Q) used at Tmed,min < -50°C

Tmed,min	-50°C	-75°C	-100°C	-125°C	-150°C	-175°C	-200°C
Ta,min	-50°C	-47°C	-45°C	-43°C	-41°C	-39°C	-37°C

Notes:
(1) This table is applicable only for the Proline Promass 300 with Ex db or XP rated enclosures and for a period when the flowmeter is in non-operating condition, until the transmitter is heated up

Aenderungen:					
	A	10.05.2016 / Bn	F	09.06.2021 / Bn	
	B	24.10.2016 / Bn	G	15.07.2023 / DOMI	
	C	03.05.2017 / Bn	H		
	D	04.07.2018 / Bn	J		
	E	22.10.2019 / Bn	K		

Ersetzt durch:

Ersatz für:

Ersteller: FES / Bn

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Control Drawing IECEx, ATEX, CSA, cCSAus

Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1

Thermal Parameter

Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

Proline Promass A/E/F/H/I/O/P/Q/S/X 500 **Proline Cubemass C 500**

Notes: Pages 3 and 4 apply to versions with extended order code covering: 8*5*** – dd*******B… O8*5*** – dd*******B… 8x5Bxx – dd*******B… O8x5Bxx – dd*******B…
with approval option cCSAus / CSA: dd = CC, CD, CE, C1, C2, C3, C4
IECEx / ATEX: dd = BA, BB, BC, BD

Temperature table for versions with sensor not insulated

Sensor	Size / DN	T_{med}		$T_{a,max}$	$T_{med,max}$ (°C)					
		min (°C)	max (°C)	(°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A (type 8A5B)	01 … 04	-50	205	60	60	95	130	150	205	205
Promass A (type 8A5C)	01 … 04	-50	205	55	55	95	130	150	205	205
				60	---	95	130	150	205	205
Cubemass C	01 … 06	-50	205	50	50	95	130	150	205	205
				60	---	95	130	150	205	205
Promass E	08 …50	-50	205	50	50	100	130	130	205	205
				60	---	100	130	130	205	205
	80	-50	205	60	60	75	110	170	205	205
Promass F	08 … 15	-50 / -60	150	55	50	95	130	150	150	150
				60	---	95	130	150	150	150
		-50 / -60 / -200	240	55	50	95	130	160	240	240
				60	---	95	130	160	240	240
	15 … 25	-50 / -200	350	60	70	95	130	175	265	350
	25 … 40	-50 / -60	150	55	55	95	130	150	150	150
				60	---	95	130	150	150	150
		-50 / -60 / -200	240	55	55	95	130	170	240	240
				60	---	95	130	170	240	240
	50	-50 / -60	150	55	55	95	130	150	150	150
				60	---	95	130	150	150	150
		-50 / -60 / -200	240	60	60	95	130	170	240	240
	80 … 250	-50 / -60	150	55	55	75	110	150	150	150
				60	---	75	110	150	150	150
		-50 / -60 / -200	240	60	60	75	110	170	240	240
	50 … 250	-50 / -200	350	60	70	85	120	175	265	350
Promass H	8	-50 / -200	205	50	50	65	100	160	205	205
				60	---	65	100	160	205	205
	15 … 50	-50 / -200	205	60	60	75	115	180	205	205
Promass S, P	8	-50	150	45	45	65	100	150	150	150
				60	---	65	100	150	150	150
		-50	205	45	45	65	100	160	205	205
				60	---	65	100	160	205	205
	15 … 40	-50	150	50	50	75	115	150	150	150
				60	---	75	115	150	150	150
		-50	205	50	50	75	115	180	205	205
				60	---	75	115	180	205	205
	50	-50	150	60	60	75	115	150	150	150
		-50	205	60	60	75	115	180	205	205

Sensor	Size / DN	T_{med}		$T_{a,max}$	$T_{med,max}$ (°C)					
		min (°C)	max (°C)	(°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass I	8, 15 15FB, 25	-50	150	60	60	95	130	150	150	150
	25FB, 40, 40FB, 50, 50FB, 80	-50	150	60	70	85	120	150	150	150
Promass O	80 … 250	-50	205	60	60	75	110	170	205	205
Promass X	350	-50 / -60	205	60	70	90	120	170	205	205
Promass Q	25 … 250	-50 / -60 / -200	240	60	55	75	110	160	240	240

Notes: (1) Ta,min = -40°C, -50°C / -60°C respectively (see nameplate)
(2) for applicable version with maximum medium temperatue and minimum medium temperature see nameplate

Transmitter for all versions:

$T_{a,max}$ (°C)	
T6 (85°C)	T5 (100°C)
55	60

Notes: (1) Ta,min = -50°C (for limitation see name plate)

Aenderungen:					
	A	10.05.2016 / Bn	F	09.06.2021 / Bn	
	B	24.10.2016 / Bn	G	15.07.2023 / DOMI	
	C	03.05.2017 / Bn	H		
	D	04.07.2018 / Bn	J		
	E	22.10.2019 / Bn	K		

Ersetzt durch:

Ersatz für:

Ersteller: FES / Bn

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Control Drawing IECEx, ATEX, CSA, cCSAus

Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1

Thermal Parameter

Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		

Continued of previous page

Temperature table for versions with sensor insulated (for insulation refer to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T_{med} min (°C)	T_{med} max (°C)	$T_{a,max}$ (°C)	$T_{med,max}$ (°C) T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A (type 8A5B)	01 … 04	-50	205	50	60	95	130	150	(180)	(180)
				60	60	95	130	150	150	150
Promass A (type 8A5C)	01 … 04	-50	205	50	60	95	130	150	(180)	(180)
				55	55	95	130	150	150	150
				60	---	95	130	150	150	150
Cubemass C	01 … 06	-50	205	50	60	95	130	150	(180)	(180)
				60	---	95	130	150	150	150
Promass E	08 …50	-50	205	50	50	100	130	130	205	205
				60	---	100	130	130	205	205
	80	-50	205	60	60	75	110	170	205	205
Promass F	08 … 15	-50 / -60	150	55	50	95	130	150	150	150
				60	---	95	130	150	150	150
		-50 /-60 / -200	240	55	50	95	130	160	240	240
				60	---	95	130	160	240	240
	15 … 25	-50 / -200	350	60	70	95	130	175	265	350
	25 … 40	-50 / -60	150	55	55	95	130	150	150	150
				60	---	95	130	150	150	150
		-50 / -60 / -200	240	55	55	95	130	170	240	240
				60	---	95	130	170	240	240
	50	-50 / -60	150	55	55	95	130	150	150	150
				60	---	95	130	150	150	150
		-50 / -60 / -200	240	60	60	95	130	170	240	240
	80 … 250	-50 / -60	150	55	55	75	110	150	150	150
				60	---	75	110	150	150	150
		-50 / -60 / -200	240	60	60	75	110	170	240	240
	50 … 250	-50 / -200	350	60	70	85	120	175	265	350
Promass H	8	-50 / -200	205	50	50	65	100	160	205	205
				60	---	65	100	160	205	205
	15 … 50	-50 / -200	205	60	60	75	115	180	205	205
Promass S, P	8	-50	150	45	45	65	100	150	150	150
				60	---	65	100	150	150	150
		-50	205	45	45	65	100	160	205	205
				60	---	65	100	160	205	205
	15 … 40	-50	150	50	50	75	115	150	150	150
				60	---	75	115	150	150	150
		-50	205	50	50	75	115	180	205	205
				60	---	75	115	180	205	205
	50	-50	150	60	60	75	115	150	150	150
		-50	205	60	60	75	115	180	205	205
Promass I	8, 15 15FB, 25	-50	150	60	60	95	130	150	150	150
	25FB, 40, … 80	-50	150	60	70	85	120	150	150	150
Promass O	80 … 250	-50	205	60	60	75	110	170	205	205

Sensor	Size / DN	T_{med} min (°C)	T_{med} max (°C)	$T_{a,max}$ (°C)	$T_{med,max}$ (°C) T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass X	350	-50 / -60	205	60	70	90	120	170	205	205
Promass Q	25 … 250	-50 / -60 / -200	240	60	55	75	110	160	240	240

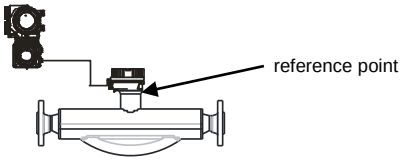
Notes: (1) Ta,min = -40°C, -50°C / -60°C respectively (see nameplate)
(2) values in brackets are applicable for installation where the sensor enclosure is not installed above the sensor
(3) for applicable version with max. medium temperatue and min. medium temperature see nameplate

Temperature table for versions with sensor insulated
(for insulation not in compliance to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T_{max} to be measured at reference point at sensor neck (°C) T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	all	63	72	84	91	91	91

Notes: (1) for safe use temperatures shall not exceed all of the following:
- temperature table for versions with sensor not insulated (refer to table above)
- temperature at reference point as listed in this table
- Ta,min = -40°C, -50°C respectively (see nameplate)
- for maximum medium temperatue and minimum medium temperature see nameplate

(2) location of reference point



Transmitter for all versions:

$T_{a,max}$ (°C)	
T6 (85°C)	T5 (100°C)
55	60

Notes: (1) Ta,min = -50°C (for limitation see name plate)

Aenderungen:					
	A	10.05.2016 / Bn	F	09.06.2021 / Bn	
	B	24.10.2016 / Bn	G	15.07.2023 / DOMI	
	C	03.05.2017 / Bn	H		
	D	04.07.2018 / Bn	J		
	E	22.10.2019 / Bn	K		

Ersetzt durch:

Ersatz für:

Ersteller: FES / Bn

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Control Drawing IECEx, ATEX, CSA, cCSAus

Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1

Thermal Parameter

Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

Proline Promass A/E/F/H/I/O/P/Q/S/X 500 **Proline Cubemass C 500**

Notes: Pages 5 and 6 apply to versions with extended order code covering: 8*5*** – dd*******A… O8*5*** – dd*******A… 8x5Bxx – dd*******A… O8x5Bxx – dd*******A…

with approval option cCSAus / CSA: dd = CM, CN, C5, C6

IECEx / ATEX: dd = BI, BJ, BM, BN

Temperature table for versions with sensor not insulated

Sensor	Size / DN	T_{med} min (°C)	T_{med} max (°C)	$T_{a,max}$ (°C)	$T_{med,max}$ (°C) T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A (type 8A5B)	01…04	-50	205	35	60	95	130	150	205	205
				50	---	95	130	150	205	205
				60	---	---	130	150	205	205
Promass A (type 8A5C)	01…04	-50	205	35	55	95	130	150	205	205
				50	---	95	130	150	205	205
				55	---	---	130	150	205	205
				60	---	---	130	150	190	190
Cubemass C	01…06	-50	205	35	40	75	130	150	205	205
				50	---	75	130	150	205	205
				55	---	---	130	150	205	205
				60	---	---	130	150	160	160
Promass E	08…50	-50	205	35	40	60	130	130	205	205
				50	---	60	130	130	205	205
				60	---	---	130	130	205	205
	80	-50	205	35	40	60	110	170	205	205
				50	---	60	110	170	205	205
				60	---	---	110	170	205	205
Promass F	08…40	-50	150	35	40	65	130	150	150	150
				50	---	65	130	150	150	150
				60	---	---	130	130	130	130
		-50 / -200	240	35	40	65	130	170	240	240
				50	---	65	130	170	240	240
				60	---	---	130	170	240	240
	50	-50	150	35	40	65	130	150	150	150
				50	---	65	130	150	150	150
				60	---	---	130	130	130	130
		-50 / -200	240	35	40	65	130	160	240	240
				50	---	65	130	160	240	240
				60	---	---	130	160	240	240
	15…25	-50 / -200	350	35	40	80	130	175	275	350
				50	---	80	130	175	275	350
				60	---	---	130	175	240 (275)	240 (350)
	80…250	-50	150	35	40	65	110	150	150	150
				50	---	65	110	150	150	150
				60	---	---	110	130	130	130
		-50 / -200	240	35	40	65	110	170	240	240
				50	---	65	110	170	240	240
				60	---	---	110	170	240	240
	50…250	-50 / -200	350	35	40	80	120	175	275	350
				50	---	80	120	175	275	350
				60	---	---	120	175	240 (275)	240 (350)
Promass S, P	8	-50	150	35	45	65	100	150	150	150
				50	---	65	100	150	150	150
				60	---	---	100	150	150	150
		-50	205	35	45	65	100	160	205	205
				50	---	65	100	160	205	205
				60	---	---	100	160	205	205
	15…50	-50	150	35	45	65	110	150	150	150
				50	---	65	110	150	150	150
				60	---	---	110	150	150	150

Sensor	Size / DN	T_{med} min (°C)	T_{med} max (°C)	$T_{a,max}$ (°C)	$T_{med,max}$ (°C) T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass S, P	15…50	-50	205	35	45	65	110	180	205	205
				50	---	65	110	180	205	205
				60	---	---	110	180	205	205
Promass H	8	-50 / -200	205	35	40	65	100	160	205	205
				50	---	65	100	160	205	205
				60	---	---	100	160	205	205
	15…50	-50 / -200	205	35	40	65	115	180	205	205
				50	---	65	115	180	205	205
				60	---	---	115	180	205	205
Promass I	8, 80	-50	150	35	45	70	115	140	140	150
				50	---	70	115	140	140	150
				55	---	---	115	140	140	150
				60	---	---	115	140	140	140
Promass O	80 … 250	-50	205	35	45	65	110	170	205	205
				50	---	65	110	170	205	205
				60	---	---	110	170	205	205
Promass X	350	-50	205	35	45	65	110	170	205	205
				50	---	65	110	170	205	205
				60	---	---	110	170	205	205
Promass Q	25 … 250	-50 / -200	240	35	45	65	100	160	240	240
				50	---	65	100	160	240	240
				60	---	---	100	160	240	240

Notes: (1) Ta,min = -40°C, -50°C respectively (see nameplate)
(2) values in brackets are applicable for installation where the transmitter is not installed above the sensor
(3) for applicable version with maximum medium temperatue and minimum medium temperature see nameplate

Transmitter for all versions:

Type of enclosure	$T_{a,max}$ (°C) Ordinary location	T6 (85°C)	T5 (100°C)	T4 (135°C)
aluminium	60	---	45	60
plastic	60	---	---	---

Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate)
plastic enclosure: Ta,min = -40°C

Aenderungen:				
	A	10.05.2016 / Bn	F	09.06.2021 / Bn
	B	24.10.2016 / Bn	G	15.07.2023 / DOMI
	C	03.05.2017 / Bn	H	
	D	04.07.2018 / Bn	J	
	E	22.10.2019 / Bn	K	

Ersetzt durch:

Ersatz für:

Ersteller: FES / Bn

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Control Drawing IECEx, ATEX, CSA, cCSAus

Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1

Thermal Parameter

Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

Temperature table for versions with sensor insulated (for insulation refer to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T_{med} min (°C)	T_{med} max (°C)	$T_{a,max}$ (°C)	$T_{med,max}$ (°C) T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01 … 04	-50	205	35	40	90	90	150	150	150
				40	---	90	90	150	150	150
				45	---	---	90	150	150	150
				50	---	---	90	120	120	120
Cubemass C	01 … 06	-50	205	35	40	90	100	150	150	150
				40	---	90	100	150	150	150
				45	---	---	100	150	150	150
				50	---	---	100	120	120	120
Promass E	08 …50	-50	205	35	40	55	130	160	205	205
				50	---	55	130	160	205	205
	80	-50	205	35	40	55	110	170	205	205
				50	---	55	110	170	205	205
Promass F	08…40	-50	150	35	40	60	130	130	130	130
				45	---	60	130	130	130	130
				50	---	---	130	130	130	130
		-50 / -200	240	35	40	60	130	170	240	240
				45	---	60	130	170	240	240
				50	---	---	130	170	240	240
	50	-50	150	35	40	60	130	130	130	130
				45	---	60	130	130	130	130
				50	---	---	130	130	130	130
		-50 / -200	240	35	40	60	130	160	240	240
				45	---	60	130	160	240	240
				50	---	---	130	160	240	240
	15 … 25	-50 / -200	350	35	40	80	130	175	275	350
				50	---	80	130	175	275	350
				60	---	---	130	175	240 (275)	240 (350)
	80 … 250	-50	150	35	40	60	110	130	130	130
				45	---	60	110	130	130	130
				50	---	---	110	130	130	130
		-50 / -200	240	35	40	60	110	170	240	240
				45	---	60	110	170	240	240
				50	---	---	110	170	240	240
	50 … 250	-50 / -200	350	35	40	80	120	175	275	350
				50	---	80	120	175	275	350
				60	---	---	120	175	240 (275)	240 (350)
Promass S, P	8	-50	150	35	40	55	100	150	150	150
				45	---	55	100	150	150	150
				50	---	---	100	120	120	120
		-50	205	35	40	55	100	160	205	205
				50	---	55	100	160	205	205
				55	---	---	100	160	205	205
	15 … 50	-50	150	35	40	55	110	150	150	150
				45	---	55	110	150	150	150
				50	---	---	110	120	120	120
		-50	205	35	40	55	100	180	205	205
				50	---	55	100	180	205	205
				55	---	---	100	180	205	205
Promass I	8, 80	-50	150	35	45	70	90	150	150	150
				45	---	70	90	150	150	150
				50	---	---	90	120	120	---
Promass O	80 … 250	-50	205	35	40	55	110	170	205	205
				50	---	55	110	170	205	205
Promass X	350	-50	205	35	40	55	120	170	205	205
				50	---	55	120	170	205	205
				55	---	---	120	170	205	205

Sensor	Size / DN	T_{med} min (°C)	T_{med} max (°C)	$T_{a,max}$ (°C)	$T_{med,max}$ (°C) T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass Q	25 … 250	-50 / -200	240	35	40	55	100	160	240	240
				50	---	55	100	160	240	240
Promass H	8	-50 / -200	205	35	40	65	100	160	205	205
				45	---	65	100	160	205	205
				55	---	---	100	160	205	205
	15 … 50	-50 / -200	205	35	40	65	115	180	205	205
				45	---	65	115	180	205	205
				55	---	---	115	180	205	205

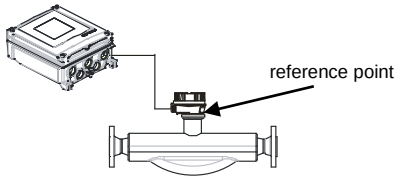
Notes: (1) Ta,min = -40°C, -50°C respectively (see nameplate)
(2) for applicable version with maximum medium temperatue and minimum medium temperature see nameplate

Temperature table for versions with sensor insulated
(for insulation not in compliance to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T_{max} to be measured at reference point at sensor neck (°C) T6 (80°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	all	45	64	82	82	85	85

Notes: (1) for safe use temperatures shall not exceed all of the following:
- temperature table for versions with sensor not insulated (refer to table above)
- temperature at reference point as listed in this table
- Ta,min = -40°C, -50°C respectively (see nameplate)
- for maximum medium temperatue and minimum medium temperature see nameplate

(2) location of reference point



Transmitter for all versions:

Type of enclosure	$T_{a,max}$ (°C) Ordinary location	T6 (85°C)	T5 (100°C)	T4 (135°C)
aluminium	60	---	45	60
plastic	60	---	---	---

Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate)
plastic enclosure: Ta,min = -40°C

Aenderungen:				
	A	10.05.2016 / Bn	F	09.06.2021 / Bn
	B	24.10.2016 / Bn	G	15.07.2023 / DOMI
	C	03.05.2017 / Bn	H	
	D	04.07.2018 / Bn	J	
	E	22.10.2019 / Bn	K	

Ersetzt durch:

Ersatz für:

Ersteller: FES / Bn

FILE: M:\Zeichng\FES0263\G\FES0263G.doc

Control Drawing IECEx, ATEX, CSA, cCSAus

Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1

Thermal Parameter

Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

This Installation Drawing applies to the flowmeters:

	flowmeter	flowmeter OEM version	replacement transmitter	replacement transmitter OEM version
Proline Promass 300 / Proline Cubemass 300:	8*3B** – ddeffgh…	O8*3B** – ddeffgh…	8x3Bxx – ddeffgh…	8x3Bxx – ddeffgh…
Proline Promass 500 / Proline Cubemass 500:	8*5B** – ddeffgh**B…	O8*5B** – ddeffgh**B…	8x5Bxx – ddeffgh**B…	8x5Bxx – ddeffgh**B…
	8*5B** – ddeffghi*A…	O8*5B** – ddeffghi*A…	8x5Bxx – ddeffghi*A…	8x5Bxx – ddeffghi*A…

where **dd** = approval code, **e** = power supply code, **ff** = IO1 code, **g** = IO2 code, **h** = IO3 code, **i** = IO4 code

General notes to products:

1. **FOR COMPLETE INSTALLATION DRAWING SEE ADDITIONAL INSTALLATION DRAWINGS.**
   ASSIGNMENT OF INSTALLATION DRAWINGS:
   FES0259 -> ELECTRICAL PARAMETERS TO ALL ABOVE LISTED FLOWMETERS
   FES0263 -> THERMAL PARAMETERS TO ALL ABOVE LISTED FLOWMETERS
2. Install per Canadian Electrical Code (CEC) resp. National Electrical Code (NEC) ANSI/NFPA 70 using threaded conduit or other wiring methods in accordance with articles 500 to 510.
3. The flowmeters Proline Promass 300, Proline Promass 500, Proline Cubemass 300 and Proline Cubemass 500 must be integrated into the potential equalisation system by means of earthing connection facilities or alternatively via pipe, but only if the ground connection via pipe according to national regulations can be assured.
4. Control room equipment shall not use or generate more than 250 V rms or VDC.
5. Cable glands shall be suitable for a temperature range of minimum specified Ta to maximum Ta + 20°C and shall be certified for the intended use.
6. Use supply wires suitable for 20°C above ambient temperature.
7. Proline Promass 300/500 and Proline Cubemass 300/500 with type of sensors A, C, E, F, H, O, P, Q, S and X are Dual Seal devices. See nameplate for maximum working pressure.
8. WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
   AVERTISSEMENT – RISQUE D'EXPLOSION – LA SUBSTITUTION DES COMPOSANTS RISQUE DE NUIRE À LA SÉCURITÉ INTRINSÈQUE DU PRODUIT
9. The equipment shall only be used for fluids where all process-wetted materials are adequately resistant to the fluid.
10. The cross-sectional area of the PE conductor connected to the protective earthing facilities located inside and outside the enclosure shall not exceed 4mm^2.
11. If the stainless steel label or tag is not bonded to earth, the maximum average capacitance of the nameplate or tag is max. 30pF bonded to a coated metallic enclosure. This shall be considered to determine suitability of the flowmeter in a specific application.
12. The Proline Promass 300/500 and Proline Cubemass 300/500 Flowmeter is designed for the following range of environmental conditions:
    - Outdoor use
    - Environmental conditions:
      - Pollution Degree: 4 (Macro), 2 (Micro) for all version
      - Pollution Degree: 2 (Macro), 2 (Micro) for plastic transmitter enclosure with Ex ic sensor outputs
    - Overvoltage category II
    - Mode of operation: continuous
    - Altitude 2000m

Aenderungen:						Ersetzt durch:
	A	12.05.2016 / Bn	F	01.03.2023 / DOMI		
	B	24.10.2016 / Bn	G			Ersatz für:
	C	21.04.2017 / Bn	H			Ersteller: FES / Bn
	D	20.02.2018 / Bn	J			FILE: M:\Zeichng\FES0268\E\FES0268E.doc
	E	07.07.2021 / Bn	K			

	Massstab			
Control Drawing CSA, cCSAus		Gezeichnet	12.05.2016	Bn
Cl.I Division 1, Cl.II, Cl.III, Class I Zone 1, Zone 21		Geprüft		
General Requirements		Ex-geprüft	01.03.2023	DOMI
Proline Promass 300/500, Proline Cubemass 300/500		Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

Notes to XP / Ex db / AEx db:

1. Enclosures with Ex db / AEx db rated terminal compartment: Use only suitably certified Ex db / AEx db cable glands, appropriately ingress and temperature rated for their point of mounting. If conduit entries are used, seals must be installed immediately adjacent to the enclosure.
2. Enclosures with XP rating: Enclosures are factory sealed when using in ambient temperature of not lower than -40°C.
   Sensor enclosures with XP rating: Enclosures are factory sealed.
3. WARNING – AFTER DE-ENERGIZING, DELAY 10 MINUTES BEFORE OPENING ENCLOSURE IN TYPE OF PROTECTION EX D
   AVERTISSEMENT – APRÈS AVOIR COUPÉ L'ALIMENTATION, ATTENDRE 10 MINUTES AVANT D'OUVRIR UN BOITIER DE PROTECTION DE TYPE EX D
4. Unused cable entry shall be closed with approved sealing plugs or conduit seals that correspond to the type of protection.
5. Flameproof joints shall not be repaired.

Notes to Ex eb / AEx eb:

1. Enclosures with Ex eb / AEx eb rated terminal compartment: Use only suitably certified Ex eb / AEx eb cable glands, appropriately ingress and temperature rated for their point of mounting.
2. Unused cable entry shall be closed with approved sealing plugs that correspond to the type of protection.
3. To ensure the degree of protection is maintained, it shall be ensured that the cover seal of enclosures with flat seals is installed with no bends in the seal surface before securing the cover. Seals that are not flat shall be replaced.

Notes to IS / Ex i / AEx i:

1. When connecting the intrinsically safe circuits of explosion protection category "ia" of the measuring device to certified intrinsically safe circuits of explosion protection category "ib" with the explosion group IIC and IIB respectively, the explosion protection changes to Ex ib IIC and Ex ib IIB respectively. Intrinsically safe circuits of explosion protection category "ib" are suitable for areas which require EPL Gb apparatus.
2. The connection circuit for Remote Display type DKX001 provides an intrinsically safe circuit with type of protection IS, Ex ia, AEx ia. For assessment of installation see additional drawing "FES0259" as amendment to this control drawing.
3. Versions 8*5*** – *********A********** + #**#, O8*5*** – *********A********** + #**#:
   For interconnection of transmitter to sensor any cable may be used with the following requirements:
   - L/R ≤ 0.0089 mH/Ω and C_{cable} ≤ 760nF for group IIC, L/R ≤ 0.0356 mH/Ω and C_{cable} ≤ 4.2µF for group IIB
     or
   - L_{cable} ≤ 26µH and C_{cable} ≤ 760nF for group IIC, L_{cable} ≤ 104µH and C_{cable} ≤ 4.2µF for group IIB
4. Versions 8*5*** – *********B********** + #**#, O8*5*** – *********B********** + #**#:
   For interconnection of transmitter to sensor use a cable with a maximum length of 120m if the following parameters are not exceeded:
   Cable inductance C_{cable} ≤ 0.5 mH/km and cable capacitance L_{cable} ≤ 0.5 µF/km

Notes to Cl.II, Cl.III / Ex tb:

1. Class II Group G: The maximum temperature of process shall not exceed 165°C/329°F.
2. An additional assessment is required to ensure the suitability of the device to explosive gas-air and dust-air mixtures occurring simultaneously.
3. The housing may only be opened for a brief period. During this time the user shall ensure that dust does not enter the electronic housing.
4. A dust-tight conduit seal shall be used when installed in Class II & III environments.

Aenderungen:						Ersetzt durch:
	A	12.05.2016 / Bn	F	01.03.2023 / DOMI		
	B	24.10.2016 / Bn	G			Ersatz für:
	C	21.04.2017 / Bn	H			Ersteller: FES / Bn
	D	20.02.2018 / Bn	J			FILE: M:\Zeichng\FES0268\E\FES0268E.doc
	E	07.07.2021 / Bn	K			

Control Drawing CSA, cCSAus Cl.I Division 1, Cl.II, Cl.III, Class I Zone 1, Zone 21 General Requirements Proline Promass 300/500, Proline Cubemass 300/500	Massstab	Gezeichnet	12.05.2016	Bn
		Geprüft		
		Ex-geprüft	01.03.2023	DOMI
		Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

Notes to Remote Display type DKX001 and ODKX001:

1. Observe additional control drawing of Remote Display type DKX001, ODKX001 respectively if used.
2. Assignment of order codes to certificate of Remote Display type DKX001 or ODKX001 if ordered separately:

Model code of flowmeter with approval code dd =	**Model code of remote display type DKX001 and ODKX001** (refer to certificate CSA 160686-70030937)		
CC, CD or CE	DKX001-(CE/CG)****	or	ODKX001-(CE/CG)*****
C1, C2, C3 or C4	DKX001-(CI/CK/CL)****	or	ODKX001-(CI/CK/CL)*****

Notes to External Antenna and Antenna Bushing H337:

1. An external antenna is not permitted for transmitters with terminal compartment in type of protection XP or Ex d.
2. Any passive omni-directional RF antenna with or without cable is permitted to be connected to the output connector socket Type N of the antenna bushing when meeting the following parameters:
   a) The antenna shall have an impedance of at least 50Ω.
   b) The rated frequency range of the antenna shall not exceed 1710MHz … 6000MHz.
   c) The RF antenna and the RF antenna cable shall be fitted with a Type N connector plug (MIL-STD-348).
   The antenna supplied by Endress+Hauser meets those requirements.
3. The antenna bushing shall be mounted wrench tight to the transmitter enclosure to maintain the ingress protection of the enclosure.
4. The coupling nut of the Type N connector plug shall be hand tightened only.
5. The enclosure of the antenna bushing shall be securely connected to local earth, typically via the enclosure to which it is connected.

Notes to Proline flowmeters using stainless steel hygienic enclosure:

1. Covers shall be first closed hand-tight and then additionally 45 degrees turned for tightening.
2. The transmitter shall not be installed vertically above the sensor.

Aenderungen:						Ersetzt durch:
	A	12.05.2016 / Bn	F	01.03.2023 / DOMI		
	B	24.10.2016 / Bn	G			Ersatz für:
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	D	20.02.2018 / Bn	J			FILE: M:\Zeichng\FES0268\E\FES0268E.doc
	E	07.07.2021 / Bn	K			

Control Drawing CSA, cCSAus

Cl.I Division 1, Cl.II, Cl.III, Class I Zone 1, Zone 21

General Requirements

Proline Promass 300/500, Proline Cubemass 300/500

Massstab

Gezeichnet	12.05.2016	Bn
Geprüft		
Ex-geprüft	01.03.2023	DOMI
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach