



Certificate of Compliance

Certificate: 2515397

Master Contract: 153857

Project: 80136346

Date Issued: 2023-09-06

Issued To: Vega Grieshaber KG
Am Hohenstein 113
Schiltach, Baden-Württemberg, 77761
Germany

Attention: Thomas Roming

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: Amandeep Singh Khatra
Amandeep Singh Khatra



PRODUCTS

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT – For Hazardous Locations

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

Class I Div 1 Groups A, B, C and D T6...T1

Ex db IIC Gb

Ex ia/db IIC T6...T1 Ga/Gb

Class I Zone 1 AEx db IIC T6...T1 Gb

Class I Zone 0/1, AEx ia/db IIC T6...T1 Ga/Gb

VEGAFLEX 80 Series Level Measuring Equipment, Models VEGAFLEX 81, VEGAFLEX 82 and VEGAFLEX 86

Rating (Ex d compartment)

9.6 to 35 VDC for 2-wire 4-20 mA/HART “Electronics” model codes A and H;

90 to 253 VAC, 50/60 Hz for 4-wire 4-20 mA/HART “Electronics” model code B;



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9.6 to 48 VDC, 20 to 42 VAC, 50/60 Hz for 4-wire 4-20 mA/HART “Electronics” model code I;
 9 to 32 VDC for Foundation Fieldbus “Electronics” model code F;
 9 to 32 VDC for Profibus PA “Electronics” model code P;
 8-30 V DC, max. 5 VDC Modbus signal for Modbus “Electronics” model codes U and W.

(Terminals 5, 6, 7, 8) – For connection to VEGADIS 81 connected per XP/Ex d wiring methods

Enclosure Type 4X, IP66/67; Ambient temperature range -50°C to +60°C, T6...T1;
 Process Pressure: Depends on the Process connection and on the Sensor Version, for details refer to the Safety Instructions and manual 46266

VEGAFLEX Model	Ambient temperature range (electronics)	Process temperature (at sensor)	Temperature code
81, 82, 86	-50°C to +46°C	-60°C to +80°C	T6
81, 82, 86	-50°C to +60°C	-60°C to +95°C	T5
81, 82, 86	-50°C to +60°C	-60°C to +130°C	T4
81, 82, 86	-50°C to +60°C	-60°C to +195°C	T3
86	-50°C to +60°C	-60°C to +290°C	T2
86	-50°C to +60°C	-60°C to +440°C	T1

Low Process temperature version

Temperature code	Ambient temperature range (electronics)	Process temperature (at sensor)	Temperature code
81, 82, 86	-50°C to +46°C	-196°C to +80°C	T6
81, 82, 86	-50°C to +60°C	-196°C to +95°C	T5
81, 82, 86	-50°C to +60°C	-196°C to +130°C	T4
81, 82, 86	-50°C to +60°C	-196°C to +195°C	T3
86	-50°C to +60°C	-196°C to +290°C	T2
86	-50°C to +60°C	-196°C to +440°C	T1

*Depends on the version, for details refer to the manual and safety instructions 46266

FX81(a).bedhijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA) or V (Various)
- c = Approval: E or Q
- d = Version/Material:
 One digit alphanumeric variable for combination of version and material:
Versions:
 Coax with single or multiple hole (ø21.3mm or 42.2mm),
 Exchangeable rod (ø8mm – 12mm),



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Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight
Exchangeable coated cable (ø4mm) with uncoated centering weight

Materials:

304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,

hi = Process Fitting/Material:

Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

j = Seal/Process Temperature: [Not safety relevant]

One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions

k = Electronics: A, H, P, F, B, I, U or W

l = Supplementary Electronics: X or Z

m = Housing/Protection: A, H, V, D, S, W

n = Cable Entry/Connection: 1, D, N, Q

single digit representing suitable for the type of protection and NRTL rated connection or cable gland

o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X

p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX82(a).bcehijklmnop

a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

b = Certification: C (CSA) or V (Various)

c = Approval: E or Q

e = Version/Material:

One digit alphanumeric variable for combination of version and material:

Exchangeable cable (ø6-11mm) with gravity weight / PA coated (gravity weight is uncoated),

Exchangeable rod (ø16mm)

Materials:

304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating

hi = Process Fitting/Material:

Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

j = Seal/Process Temperature:

One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions

k = Electronics: A, H, P, F, B, I, U or W

l = Supplementary Electronics: X or Z

m = Housing/Protection: A, H, V, D, S, W

n = Cable Entry/Connection: 1, D, N, Q



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single digit representing suitable for the type of protection and NRTL rated connection or cable gland

- o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X
- p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX86(a).bcghijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA) or V (Various)
- c = Approval: E or Q
- g = Version/Material:
One digit alphanumeric variable for combination of version and material:
Coax with single or multiple hole (ø21.3mm or 42.2mm),
Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight,
Exchangeable rod (ø8mm-16mm)

Materials:

304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,

- hi = Process Fitting/Material:
Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.
- j = Seal/Process Temperature:
One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions
- k = Electronics: A, H, P, F, B, I, U or W
- l = Supplementary Electronics: X or Z
- m = Housing/Protection: A, H, V, D, S, W
- n = Cable Entry/Connection: 1, D, N, Q
single digit representing suitable for the type of protection and NRTL rated connection or cable gland
- o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X
- p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

Notes:

1. For FX80 series without barrier and also for FLEX FX 80H with 2-chamber housing and implemented Auxiliary Electronics PLICSZEKX
2. For FX80 series connected to other passive instruments (e.g. VEGADIS61/81) certified for the location and using appropriate wiring method.
3. * Cable glands only allowed for zone applications



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Conditions of Acceptability

1. At the plastic parts of the microwave sensors type VEGAFLEX 81, 82, 83, 86; there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. At the metallic parts of the microwave sensors type series VEGAFLEX 81, 82, 83, 86 made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
3. To avoid risks by pendulum or vibration the respective parts of the microwave sensors type VEGAFLEX 81, 82, 83, 86 have to be secured effectively against these dangers. Observe manual of the manufacturer.
4. The medium tangent materials have to be resistant to the media. Observe manual of the manufacturer.
5. The flameproof housing (when used as Zone 0, Zone 1 or XP application) of this equipment must be provided with cable entries or conduits which are certified according to IEC 60079-0 and IEC 60079-1. The connection cables, the cable entries and the conduits have to be suitable for the ambient temperature range.
6. VEGAFLEX FX8*(*).*VE/Q***B/I/U*****. The PA terminal of the Ex-d connection room (internal or external screw terminal) has to be connected with the potential equalization of the explosion hazardous area.
7. The permissible process temperature at the sensor resp. the permissible ambient temperature at the electronics housing and the maximum surface temperature T* at the electronics housing depending on the ambient temperature range can be taken from the operating instructions.

Ex db[ia] IIC T6...T1Gb

Class I Zone 1 AEx db[ia] IIC T6...T1Gb

Ex ia/db [ia] IIC T6...T1 Ga/Gb

Class I Zone 0/1 AEx ia/db [ia] IIC T6...T1 Ga/Gb

CL I, DIV 1, GP ABCD T6...T1

VEGAFLEX 80 Series Level Measuring Equipment, Models VEGAFLEX 81, VEGAFLEX 82, VEGAFLEX 83 and VEGAFLEX 86 with barriers, providing intrinsically safe output per Installation Control Drawing 46265, Ambient temperature range -40°C to +60°C, T6-T1; IP66/67, Enclosure Type 4X; Dual seal*

Operation ratings (at connection compartment, double chamber housing):

9.6 to 35 VDC for 2-wire 4-20 mA/HART "Electronics" model codes A and H;

90 to 253 VAC, 50/60 Hz for 4-wire 4-20 mA/HART "Electronics" model code B;

9.6 to 48 VDC, 20 to 42 VAC, 50/60 Hz for 4-wire 4-20 mA/HART "Electronics" model code I



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8-30 V DC, max. 5 VDC Modbus signal for Modbus “Electronics” model codes U

(Terminals 5, 6, 7, 8) – For connection to VEGADIS 81 (in Ex ia compartment)

Max permissible cable parameters:

$L_{cable} = 212 \mu\text{H}$;

$C_{cable} = 1.98 \mu\text{F}$

When using the supplied VEGA connection cable, the permissible cable length is 341 m

VEGAFLEX Model	Ambient temperature range (electronics)	Process temperature (at sensor)	Temperature code
All	-40°C to +46°C	-60°C to +80°C	T6
All	-40°C to +60°C	-60°C to +95°C	T5
All	-40°C to +60°C	-60°C to +130°C	T4
81, 82, 86	-40°C to +60°C	-60°C to +195°C	T3
86	-40°C to +60°C	-60°C to +290°C	T2
86	-40°C to +60°C	-60°C to +440°C	T1

Low Process temperature version

Temperature code	Ambient temperature range (electronics)	Process temperature (at sensor)	Temperature code
All	-40°C to +46°C	-196°C to +80°C	T6
All	-40°C to +60°C	-196°C to +95°C	T5
All	-40°C to +60°C	-196°C to +130°C	T4
81, 82, 86	-40°C to +60°C	-196°C to +195°C	T3
86	-40°C to +60°C	-196°C to +290°C	T2
86	-40°C to +60°C	-196°C to +440°C	T1

Process Pressure: (Depends on the Process connection and on the Sensor Version) for details refer to the Safety Instructions and manual.

VEGAFLEX model	Process temp.	Ambient temperature	Temperature Code
All	80°C max	46°C max	T6
All	95°C max	60°C max	T5
All	130°C max	60°C max	T4
FLEX 83	150°C max**	60°C max	T3
FLEX 81/82 and 86	195°C max**	60°C max	T3
FLEX 86	295°C max**	60°C max	T2
FLEX 86	440°C max**	60°C max	T1



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- * Dual seal – only dual chamber housings (Option Code D,S,W)
**Depends on the version, for details refer to the manual and safety instructions

FX81(a).bcdhijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
b = Certification: C (CSA) or V(Various)
c = Approval: D or P
d = Version/Material:
One digit alphanumeric variable for combination of version and material:
Coax with single or multiple hole (ø21.3mm or 42.2mm),
Exchangeable rod (ø8mm – 12mm),
Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight
Exchangeable coated cable (ø4mm) with uncoated centering weight
Materials:
304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,
hi = Process Fitting/Material:
Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.
j = Seal/Process Temperature:
One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions
k = Electronics: A, B, H, I or U
l = Supplementary Electronics: X
m = Housing/Protection: D, L, M, S, T or W
n = Cable Entry/Connection: 1, D, N, Q,
single digit representing suitable for the type of protection and NRTL rated connection or cable gland
o = Indicating/Adjustment Module PLICSCOM: A, F, K or X
p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX82(a).bcehijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
b = Certification: C (CSA) or V(Various)
c = Approval: D or P
e = Version/Material:
One digit alphanumeric variable for combination of version and material:
Exchangeable cable (ø6-11mm) with gravity weight / PA coated (gravity weight is uncoated),



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Exchangeable rod ($\phi 16\text{mm}$)

Materials:

304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,

hi = Process Fitting/Material

Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

j = Seal/Process Temperature:

One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions

k = Electronics: A, B, H, I or U

l = Supplementary Electronics: X

m = Housing/Protection: D, L, M, S, T or W

n = Cable Entry/Connection: 1, D, N, Q,

single digit representing suitable for the type of protection and NRTL rated connection or cable gland

o = Indicating/Adjustment Module PLICSCOM: A, F, Kor X

p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX83(a).bcfhijklmnop

a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

b = Certification: C (CSA) or V(Various)

c = Approval: D or P

f = Version/Material:

One digit alphanumeric variable for combination of version and material:

Exchangeable rod ($\phi 8\text{mm}$), ($R_a < 0.76 \mu\text{m}$),

Exchangeable rod ($\phi 8\text{mm}$), can be autoclaved ($R_a < 0.76 \mu\text{m}$),

Exchangeable rod ($\phi 8\text{mm}$), electropolished ($R_a < 0.38 \mu\text{m}$),

Exchangeable rod ($\phi 8\text{mm}$), electropolished, can be autoclaved ($R_a < 0.38 \mu\text{m}$),

Coated cable ($\phi 4\text{mm}$ / PFA) with gravity weight, Coated rod ($\phi 10\text{mm}$ / PFA)

Materials:

304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,

hi = Process Fitting/Material:

Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

j = Seal/Process Temperature:

One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions

k = Electronics: A, B, H, I or U

l = Supplementary Electronics: X

m = Housing/Protection: D, L, M, S, T or W

n = Cable Entry/Connection: 1, D, N, Q



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- single digit representing suitable for the type of protection and NRTL rated connection or cable gland
- o = Indicating/Adjustment Module PLICSCOM: A, F, K or X
 - p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX86(a).beghijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA) or V(Various)
- c = Approval: D or P
- g = Version/Material:

One digit alphanumeric variable for combination of version and material:

- Coax with single or multiple hole (ø21.3mm or 42.2mm), without or with reference distance,
- Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight,
- Exchangeable rod (ø8mm-16mm)

Materials:

304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,

- hi = Process Fitting/Material
Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.
- j = Seal/Process Temperature:
One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions
- k = Electronics: A, B, H, I or U
- l = Supplementary Electronics: X
- m = Housing/Protection: D, L, M, S, T or W
- n = Cable Entry/Connection: 1, D, N, Q
single digit representing suitable for the type of protection and NRTL rated connection or cable gland
- o = Indicating/Adjustment Module PLICSCOM: A, F, K or X
- p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

Note: Cable glands only allowed for zone applications

Conditions of Acceptability

1. At the plastic parts of the microwave sensors type VEGAFLEX 81, 82, 83, 86; there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. At the metallic parts of the microwave sensors type series VEGAFLEX 81, 82, 83, 86 made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.



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3. To avoid risks by pendulum or vibration the respective parts of the microwave sensors type VEGAFLEX 81, 82, 83, 86 have to be secured effectively against these dangers. Observe manual of the manufacturer.
4. The medium tangent materials have to be resistant to the media. Observe manual of the manufacturer.
5. The flameproof housing (when used as Zone 0, Zone 1 or XP application) of this equipment must be provided with cable entries or conduits which are certified according to IEC 60079-0 and IEC 60079-1. The connection cables, the cable entries and the conduits have to be suitable for the ambient temperature range.
6. VEGAFLEX FX8*(*)/*VD/P****B/I/U*****: The PA terminal of the Ex-d connection room (internal or external screw terminal) has to be connected with the potential equalization of the explosion hazardous area.
7. The permissible process temperature at the sensor resp. the permissible ambient temperature at the electronics housing and the maximum surface temperature T* at the electronics housing depending on the ambient temperature range can be taken from the operating instructions.

**Class I Div 2 Groups A, B, C and D;
CL II, III, DIV 2, GP FG**

VEGAFLEX 80 Series Level Measuring Equipment, Models VEGAFLEX 81, VEGAFLEX 82, VEGAFLEX 83 and VEGAFLEX 86

Supply Voltage

9.6 to 35 VDC for 2-wire 4-20 mA/HART “Electronics” model codes A and H;
8-30 V DC, max. 5 VDC Modbus signal for Modbus “Electronics” model codes U

Type 4X IP66/67; Ambient temperature range -40°C to +60°C, T6-T1; Dual seal*
Process Pressure: Depends on the Process connection and on the Sensor Version, for details refer to the Safety Instructions and manuals 48191

VEGAFLEX Model	Ambient temperature range (electronics)	Process temperature (at sensor)	Temperature code
All	-40°C to +60°C	-60°C to +80°C	T6
All	-40°C to +60°C	-60°C to +100°C	T5
All	-40°C to +60°C	-60°C to +135°C	T4
81, 82, 86	-40°C to +60°C	-60°C to +200°C	T3
86	-40°C to +60°C	-60°C to +300°C	T2
86	-40°C to +60°C	-60°C to +450°C	T1



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Low Process temperature version

Temperature code	Ambient temperature range (electronics)	Process temperature (at sensor)	Temperature code
All	-40°C to +60°C	-196°C to +80°C	T6
All	-40°C to +60°C	-196°C to +100°C	T5
All	-40°C to +60°C	-196°C to +135°C	T4
81, 82, 86	-40°C to +60°C	-196°C to +200°C	T3
86	-40°C to +60°C	-196°C to +300°C	T2
86	-40°C to +60°C	-196°C to +450°C	T1

* Dual seal – only dual chamber housings (Option code D,S,W)

** Depends on the version, for details refer to the manual and safety instructions

FX81(a).bcdhijklmnop

a = Optional selectable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

b = Certification: C (CSA)

c = Approval: A or N

d = Version/Material:

One digit alphanumeric variable for combination of version and material:

Coax with single or multiple hole (ø21.3mm or 42.2mm),

Exchangeable rod (ø8mm – 12mm),

Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight

Exchangeable coated cable (ø4mm) with uncoated centering weight

Materials:

304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,

hi = Process Fitting/Material:

Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

j = Seal/Process Temperature:

One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions

k = Electronics: A, H or U

l = Supplementary Electronics: X or Z

m = Housing/Protection: A, D, H, V, W, ≠ S

n = Cable Entry/Connection: 1, D, N, Q

single digit representing suitable for the type of protection and NRTL rated connection or cable gland

o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X

p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties



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FX82(a).bcehijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA)
- c = Approval: A or N
- e = Version/Material:
- One digit alphanumeric variable for combination of version and material:
 - Exchangeable cable (ø6-11mm) with gravity weight / PA coated (gravity weight is uncoated),
 - Exchangeable rod (ø16mm)
 - Materials:
 - 304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,
- hi = Process Fitting/Material
 - Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.
- j = Seal/Process Temperature:
 - One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions
- k = Electronics: A H or U
- l = Supplementary Electronics: X or Z
- m = Housing/Protection: A, D, H, V, W, S
- n = Cable Entry/Connection: 1; D, N, Q,
 - single digit representing suitable for the type of protection and NRTL rated connection or cable gland
- o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X
- p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX83(a).bcfhijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA)
- c = Approval: A or N
- f = Version/Material:
- One digit alphanumeric variable for combination of version and material:
 - Exchangeable rod (ø8mm), (Ra<0.76 µm),
 - Exchangeable rod (ø8mm), can be autoclaved (Ra<0.76µm),
 - Exchangeable rod (ø8mm), electropolished (Ra<0.38µm),
 - Exchangeable rod (ø8mm), electropolished, can be autoclaved (Ra<0.38µm),
 - Coated cable (ø4mm / PFA) with gravity weight, Coated rod (ø10mm / PFA)
 - Materials:
 - 304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,
- hi = Process Fitting/Material



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Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

j = Seal/Process Temperature:

One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions

k = Electronics: A, H or U

l = Supplementary Electronics: X or Z

m = Housing/Protection: A, D, H, V, W, S

n = Cable Entry/Connection: 1, D, N, Q,

single digit representing suitable for the type of protection and NRTL rated connection or cable gland

o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X

p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX86(a).bcghijklmnop

a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

b = Certification: C (CSA)

c = Approval: A or N

g = Version/Material:

One digit alphanumeric variable for combination of version and material:

Coax with single or multiple hole (ø21.3mm or 42.2mm), without or with reference distance,

Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight,

Exchangeable rod (ø8mm-16mm)

Materials:

304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,

hi = Process Fitting/Material

Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

j = Seal/Process Temperature:

One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions

k = Electronics: A, H or U

l = Supplementary Electronics: X or Z

m = Housing/Protection: A, D, H, V, W, S

n = Cable Entry/Connection: 1, D, N, Q,

single digit representing suitable for the type of protection and NRTL rated connection or cable gland

o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X

p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties



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Notes:

1. For FX80 series connected to other passive instruments (e.g. VEGADIS61/81) certified for the location and using appropriate wiring method.
2. Cable glands only allowed for zone applications

Conditions of Acceptability

1. For Dust application (Class II, Class III, and Group III application), The guided radar sensors type VEGAFLEX FX8*(*)..CA/N****A/H/U**** and VEGAFLEX FX8*(*)..CA/N****A/HZ*** have to be installed in such a way, that process-related electrostatical charges, e.g. due to passing media, can be excluded.
2. For Dust application (Class II, Class III, and Group III application), the max process temperature is restricted to +135°C.
3. The permissible process temperature at the sensor resp. the permissible ambient temperature at the electronics housing and the maximum surface temperature T* at the electronics housing depending on the ambient temperature range can be taken from the operating instructions.

Class II Div 1, Groups E, F and G; Class III

Ex ta IIIC T*°C Da;

Ex tb IIIC T* °C Db;

Ex ta/tb IIIC T* °C Da/Db ;

Ex ta/tc IIIC T*°C Da/Dc;

Zone 20 AEx ta IIIC T*°C Da;

Zone 21 AEx tb IIIC T*°C Db;

Zone 20/21 Ex ta/tb IIIC T*°C Da/Db ;

Zone 20/22 Ex ta/tc IIIC T*°C Da/Dc;

VEGAFLEX 80 Series Level Measuring Equipment, Models VEGAFLEX 81, VEGAFLEX 82, VEGAFLEX 83 and VEGAFLEX 86,

9.6 to 35 VDC for 2-wire 4-20 mA/HART “Electronics” model codes A and H;

90 to 253 VAC, 50/60 Hz for 4-wire 4-20 mA/HART “Electronics” model code B;

9.6 to 48 VDC, 20 to 42 VAC, 50/60 Hz for 4-wire 4-20 mA/HART “Electronics” model code I;

9 to 32 VDC for Foundation Fieldbus “Electronics” model code F;

9 to 32 VDC for Profibus PA “Electronics” model code P;

8-30 V DC, max. 5 VDC Modbus signal for Modbus “Electronics” model codes U and W.

Enclosure Type 4X IP66/67; Ambient temperature range -40°C to +60°C,T*;

Process Pressure: Depends on the Process connection and on the Sensor Version, for details refer to the Safety Instructions and manual 49452

* Dual seal – only dual chamber housings (Option Code D,S,W)



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Process temperature range :

FX81(*).*****j*****

J (Order Code Seal options)	Process temperature
A	-40°C to +80°C
D	-20°C to +150°C
F	-40°C to +150°C
G	-40°C to +150°C
L	-20°C to +200°C
M	-40°C to +150°C
N	-40°C to +150°C
P	-20°C to +150°C

FX82(*).*****j*****

J (Order Code Seal options)	Process temperature
A	-40°C to +80°C
B	-40°C to +80°C
F	-40°C to +150°C
H	-40°C to +150°C
K	-20°C to +200°C

FX83(*).*****j*****

J (Order Code Seal options)	Process temperature
X	-40°C to +150°C
E	-20°C to +150°C
C	-20°C to +130°C
T	-20°C to +150°C

FX86(*).*****j*****

J (Order Code Seal options)	Process temperature
1	-196°C to +280°C
2	-196°C to +400°C
3	-20°C to +250°C

Max surface temperature (Div 1/Zone 20/Zone21)

Order Code	Max surface temperature (T*)
FX8(*)*/VR/H/I/J*****/A/HX*****, Pmax <2W	Ambient temperature + 86K



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FX8*(*).*\VR/H/I/J****A/HZ****, Pmax <2W	
FX8*(*).*\VR/H/I/J****P/FX****, Pmax <2W	
FX8*(*).*\VR/H/I/J****U/WX****, Pmax <2W	

Max surface temperature (Div 2/Zone 22):

Order Code	Max surface temperature (T*)
FX8*(*).*\VR/H/I/J****A/HX****	Ambient temperature + 38K
FX8*(*).*\VR/H/I/J****A/HZ****	Ambient temperature + 38K
FX8*(*).*\VR/H/I/J****P/FX****	Ambient temperature + 20K
FX8*(*).*\VR/H/I/J****U/WX****	Ambient temperature + 24K

FX81(a).bcdhijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA) or V(Various)
- c = Approval: R
- d = Version/Material:
One digit alphanumeric variable for combination of version and material:
Coax with single or multiple hole (ø21.3mm or 42.2mm),
Exchangeable rod (ø8mm – 12mm),
Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight
Exchangeable coated cable (ø4mm) with uncoated centering weight
Materials:
304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,
- hi = Process Fitting/Material
Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.
- j = Seal/Process Temperature: A, B, D, F, G, H, I, J, L, M, N, O, P
One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions
- k = Electronics: A, H, P, F, B, I, U or W
- l = Supplementary Electronics: X or Z
- m = Housing/Protection: A, D, H, V, W, S
- m = Cable Entry/Connection: 1, D, N, Q
single digit representing suitable for the type of protection and NRTL rated connection or cable gland
- o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X
- p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties



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FX82(a). bcdehijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA)
- c = Approval: R
- e = Version/Material:
- One digit alphanumeric variable for combination of version and material:
Exchangeable cable (ø6-11mm) with gravity weight / PA coated (gravity weight is uncoated),
Exchangeable rod (ø16mm)
Materials:
304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,
- hi = Process Fitting/Material
Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.
- j = Seal/Process Temperature: A, B, F, H, K
One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions
- k = Electronics: A, B, H, P, F, I or U or W
- l = Supplementary Electronics: X or Z
- m = Housing/Protection: A, D, H, V, W, S
- n = Cable Entry/Connection: 1, D, N, Q
single digit representing suitable for the type of protection and NRTL rated connection or cable gland
- o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X
- p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX83(a).bcfhijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA)
- c = Approval: R
- f = Version/Material:
- One digit alphanumeric variable for combination of version and material:
Exchangeable rod (ø8mm), (Ra<0.76 µm),
Exchangeable rod (ø8mm), can be autoclaved (Ra<0.76µm),
Exchangeable rod (ø8mm), electropolished (Ra<0.38µm),
Exchangeable rod (ø8mm), electropolished, can be autoclaved (Ra<0.38µm),
Coated cable (ø4mm / PFA) with gravity weight, Coated rod (ø10mm / PFA)
Materials:
304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,
- hi = Process Fitting/Material



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Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

- j = Seal/Process Temperature: C, E, T, X
One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions
- k = Electronics: A,-B, H, P, F, I or U or W
- l = Supplementary Electronics: X or Z
- m = Housing/Protection: A, D, H, V, W, S
- n = Cable Entry/Connection: 1, D, N, Q
single digit representing suitable for the type of protection and NRTL rated connection or cable gland
- o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X
- p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX86(a).bcghijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA)
- c = Approval: R
- g = Version/Material:
One digit alphanumeric variable for combination of version and material:
 - Coax with single or multiple hole (ø21.3mm or 42.2mm), without or with reference distance,
 - Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight,
 - Exchangeable rod (ø8mm-16mm)
- Materials:
304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,
- hi = Process Fitting/Material
Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.
- j = Seal/Process Temperature: 1, 2 or 3
One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions
- k = Electronics: A, B, H, P, F, I or U or W
- l = Supplementary Electronics: X or Z
- m = Housing/Protection: A, D, H, V, W, S
- n = Cable Entry/Connection: 1, D, N, Q
single digit representing suitable for the type of protection and NRTL rated connection or cable gland
- o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X
- p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

Notes:



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1. For FX80 series connected to other passive instruments (e.g. VEGADIS61/81) certified for the location and using appropriate wiring method.
2. Cable glands only allowed for zone applications

Conditions of Acceptability

1. At the plastic parts of the microwave sensors type VEGAFLEX 81, 82, 83, 86; there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. At the metallic parts of the microwave sensors type series VEGAFLEX 81, 82, 83, 86 made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
3. To avoid risks by pendulum or vibration the respective parts of the microwave sensors type VEGAFLEX 81, 82, 83, 86 have to be secured effectively against these dangers. Observe manual of the manufacturer.
4. For Dust application (Class II, Class III, and Group III application), The guided radar sensors type VEGAFLEX FX8*(*).*VR/H/I/J****A/H/P/F/B/I/U**** and VEGAFLEX FX8*(*).*VR/H/I/J****A/HZ*** have to be installed in such a way, that process-related electrostatic charges, e.g. due to passing media, can be excluded.
5. For Dust application (Class II, Class III, and Group III application), the max process temperature is restricted to +135°C.
- 6.
7. The permissible process temperature at the sensor resp. the permissible ambient temperature at the electronics housing and the maximum surface temperature T* at the electronics housing depending on the ambient temperature range can be taken from the operating instructions.
8. (For EPL Da or Db application) The cable glands as well as the blanking elements, if used, have to be separately assessed and certified in accordance with IEC 60079-31. In the end-use application the degree of protection min IP6X shall be maintained in accordance with IEC 600079-0 and in compliance with IEC 60529.
9. For installation in EPL Da areas, the maximum power provided to the guided radar sensors type VEGAFLEX FX8*(*).*VR/H/I/J****A/HX****, VEGAFLEX FX8*(*).*VR/H/I/J ****A/HZ****, VEGAFLEX FX8*(*).*VR/H/I/J ****P/FX**** and VEGAFLEX FX8*(*).*VR/H/I/J ****UX**** must be limited to $P_{max} \leq 2$ W. Where appropriate, an external protective device shall be used.

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 US Standards

Class I Div 1, Groups A, B, C and D T6...T1;
Ex ia IIC T6...T1Ga; Class I Zone 0 AEx ia IIC T6...T1Ga
Ex ia IIC T6...T1 Gb; Class I Zone 1 AEx ia IIC T6...T1Gb
Ex ia IIC T6...T1 Ga/Gb; Class I Zone 0/1 AEx ia IIC T6...T1 Ga/Gb



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VEGAFLEX 80 Series Level Measuring Equipment, Models VEGAFLEX 81, VEGAFLEX 82, VEGAFLEX 83 and VEGAFLEX 86 without barrier when installed per Installation Control Drawing 47736, ambient temperature range -40°C to +60°C, T6-T1; IP66/67 Enclosure Type 4X; Dual seal*

Supply and signal circuit entity parameters (Option Code A/H Electronics)

(Terminals 1[+],2) in Ex I electronics and connection compartment

$U_i = 30\text{ V}$; $I_i = 131\text{ mA}$; $P_i = 983\text{ mW}$; $C_i = 0\text{ }\mu\text{F}$; $L_i = 5\text{ }\mu\text{H}$

Version with fixed cable: $L = 0.55\text{ }\mu\text{H/m}$, $C_{i\text{ wire/wire}} = 58\text{ pF/m}$, $C_{i\text{ wire/screen}} = 270\text{ pF/m}$

Supply and signal circuit entity parameters (Option Code P/F Electronics)

(Terminals 1[+],2) in Ex I electronics and connection compartment

$U_i = 17.5\text{ V}$; $I_i = 500\text{ mA}$; $P_i = 5.5\text{ W}$

The apparatus is suitable for connection to a fieldbus system according to the FISCO concept (IEC 60079-11), e. g. Profibus PA.

or

$U_i = 24\text{ V}$; $I_i = 250\text{ mA}$; $P_i = 1.2\text{ W}$

Version with fixed cable: $L = 0.55\text{ }\mu\text{H/m}$, $C_{i\text{ wire/wire}} = 58\text{ pF/m}$, $C_{i\text{ wire/screen}} = 270\text{ pF/m}$

When used with supplementary electronics (Z) i.e. Additional current output:

Supply and signal circuit II entity parameters

(Terminals 7[+], 8[-])

$U_i = 30\text{ V}$; $I_i = 131\text{ mA}$; $P_i = 983\text{ mW}$; $C_i = 0\text{ }\mu\text{F}$; $L_i = 5\text{ }\mu\text{H}$

(Terminals 5, 6, 7, 8) – For connection to VEGADIS 81:

Max permissible cable parameters:

$L_{\text{cable}} = 212\text{ }\mu\text{H}$;

$C_{\text{cable}} = 1.98\text{ }\mu\text{F}$

When using the supplied VEGA connection cable, the permissible cable length is 341 m

Spring contacts (For connection only to PLICSOM accessory)

HF Circuit: Max length of supplied coaxial cable shall not exceed 50m for all versions of VEGAFLEX 8x

Temperature code	Ambient temperature range (at electronics)	Process temperature (at sensor)
T6	-40°C to +46°C	-60°C to +80°C
T5	-40°C to +60°C	-60°C to +95°C
T4	-40°C to +60°C	-60°C to +130°C
T3	-40°C to +60°C	-60°C to +195°C
T2	-40°C to +60°C	-60°C to +290°C
T1	-40°C to +60°C	-60°C to +440°C



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Low Process temperature version

Temperature code	Ambient temperature range (at electronics)	Process temperature (at sensor)
T6	-40°C to +46°C	-196°C to +80°C
T5	-40°C to +60°C	-196°C to +95°C
T4	-40°C to +60°C	-196°C to +130°C
T3	-40°C to +60°C	-196°C to +195°C
T2	-40°C to +60°C	-196°C to +290°C
T1	-40°C to +60°C	-196°C to +440°C

* Dual seal – only dual chamber housings (Option D,S,W)

FX81(a).bcdhijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA) or V(Various)
- c = Approval: C or O
- d = Version/Material:
One digit alphanumeric variable for combination of version and material:
Coax with single or multiple hole (ø21.3mm or 42.2mm),
Exchangeable rod (ø8mm – 12mm),
Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight
Exchangeable coated cable (ø4mm) with uncoated centering weight
Materials:
304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,
- hi = Process Fitting/Material
Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.
- j = Seal/Process Temperature:
One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions
- k = Electronics: A, H, P, F
- l = Supplementary Electronics: X, Z
- m = Housing/Protection: 3, 4, 5, 8, A, C, D, F, G, H, J, L, M, S, T, V, W
- n = Cable Entry/Connection: 1, D, N, Q
- o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X
- p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties



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FX82(a).bcehijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA) or V(Various)
- c = Approval: C or O
- e = Version/Material:
- One digit alphanumeric variable for combination of version and material:
Exchangeable cable (ø6-11mm) with gravity weight / PA coated (gravity weight is uncoated),
Exchangeable rod (ø16mm)
Materials:
304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,
- hi = Process Fitting/Material
Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.
- j = Seal/Process Temperature:
One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions
- k = Electronics: A, H, P, F
- l = Supplementary Electronics: X, Z
- m = Housing/Protection: 3, 4, 5, 8, A,-C, D, F, G, H, J, L, M, S, T, V, W
- n = Cable Entry/Connection: 1, D, N, Q
- o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X
- p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX83(a).bcfhijklmnop

- a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties
- b = Certification: C (CSA) or V(Various)
- c = Approval: C or O
- f = Version/Material:
- One digit alphanumeric variable for combination of version and material:
Exchangeable rod (ø8mm), (Ra<0.76 µm),
Exchangeable rod (ø8mm), can be autoclaved (Ra<0.76µm),
Exchangeable rod (ø8mm), electropolished (Ra<0.38µm),
Exchangeable rod (ø8mm), electropolished, can be autoclaved (Ra<0.38µm),
Coated cable (ø4mm / PFA) with gravity weight, Coated rod (ø10mm / PFA)
Materials:
304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,
- hi = Process Fitting/Material:



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Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

j = Seal/Process Temperature:

One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions

k = Electronics: A, H, P, F

l = Supplementary Electronics: X, Z

m = Housing/Protection: 3, 4, 5, 8, A,-C, D, F, G, H, J, L, M, S, T, V, W

n = Cable Entry/Connection: 1, D, N, Q

o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X

p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

FX86(a).bcghijklmnop

a = Optional electable parameter for internal information, options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

b = Certification: C (CSA) or V(Various)

c = Approval: C or O

g = Version/Material:

One digit alphanumeric variable for combination of version and material:

Coax with single or multiple hole (ø21.3mm or 42.2mm), without or with reference distance,

Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight,

Exchangeable rod (ø8mm-16mm)

Materials:

304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819), Duplex (1.4462), 1.4435 (BN2), PFA coating,

hi = Process Fitting/Material

Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

j = Seal/Process Temperature:

One digit alphanumeric variable for appropriate seals suitable for the application including given process temperature, required IP or NEMA rating, and environmental conditions

k = Electronics: A, H, P, F

l = Supplementary Electronics: X, Z

m = Housing/Protection: 3, 4, 5, 8, A,-C, D, F, G, H, J, L, M, S, T, V, W

n = Cable Entry/Connection: 1, D, N, Q

o = Indicating/Adjustment Module PLICSCOM: A, B, F, K, L or X

p = Additional certificates: Options not affecting safety, one digit alphanumeric variable referring to non-electrical properties

Note: For FX80 series without safety relevant barrier and also for FLEX FX 80H with 2-chamber housing and implemented Auxiliary Electronics PLICSZEKX, PLICSZE-ZSA



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Conditions of Acceptability

1. At the plastic parts of the microwave sensors type VEGAFLEX 81, 82, 83, 86; there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. At the metallic parts of the microwave sensors type series VEGAFLEX 81, 82, 83, 86 made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
3. To avoid risks by pendulum or vibration the respective parts of the microwave sensors type VEGAFLEX 81, 82, 83, 86 have to be secured effectively against these dangers. Observe manual of the manufacturer.
4. The medium tangent materials have to be resistant to the media. Observe manual of the manufacturer.
5. The permissible process temperature at the sensor resp. the permissible ambient temperature at the electronics housing and the maximum surface temperature T^* at the electronics housing depending on the ambient temperature range can be taken from the operating instructions.



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APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements
ANSI/ISA 61010-1 (3 rd Edition)	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
CAN/CSA C22.2 No. 94.2:20	Enclosures for Electrical Equipment, Environmental Considerations
ANSI/UL 50E-2020 <i>Third Edition</i>	Enclosures for Electrical Equipment, Environmental Considerations
CSA C22.2 No. 213-17 + <i>UPD 1 (2018) + UPD 2 (2019)</i>	Non-incendive Electrical Equipment for Use in Class I and II, Division 2, and Class III Hazardous (Classified) Locations
ANSI/UL 121201-2019 <i>Ninth Edition</i>	Non-incendive Electrical Equipment for Use in Class I and II, Division 2, and Class III Hazardous (Classified) 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. 60079-11:14 (R2018)	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”
CAN/CSA-C22.2 No. 60079-31:15	Explosive atmospheres – Part 31: Equipment protection by enclosure “t”
CSA C22.2 NO. 60079-26:16 3 rd Edition	Explosive Atmospheres - Part 26: Equipment with Equipment Protection Level (EPL) Ga
ANSI/UL 60079-0-2020 Seventh Edition	Explosive atmospheres – Part 0: Equipment – General requirements
ANSI/UL 60079-1-2015 Seventh Edition	Explosive Atmospheres – Part 1: Equipment Protection by Flameproof Enclosures “d”
ANSI/UL 60079-11-2018 Sixth Edition	Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “i”
ANSI/UL 60079-31-2015 Second Edition	Explosive atmospheres – Part 31: Equipment protection by enclosure “t”
ANSI/UL 60079-26-2017 3 rd Edition	Explosive Atmospheres - Part 26: Equipment with Equipment Protection Level (EPL) Ga
CSA C22.2 No. 25-17	Enclosures for Use in Class II Groups E, F and G Hazardous locations
CSA C22.2 No. 30: 20	Explosion-Proof enclosures for Use in Class Hazardous locations
FM 3600:2018	Electric Equipment for use in Hazardous (Classified) Locations General Requirements
FM 3610: 2018	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division I, Hazardous (Classified) Locations
FM 3616:2011	Dust-Ignition proof Electrical equipment
FM 3615: 2018	Explosion proof electrical equipment
ISA 12.27.01:2011	Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids



Certificate: 2515397
Project: 80136346

Master Contract: 153857
Date Issued: 2023-09-06

MARKINGS

As per descriptive report

Notes:

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





Supplement to Certificate of Compliance

Certificate: 2515397

Master Contract: 153857

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80136346	2023-09-06	Update to Report 2515397 to address points noted in FC# 153858, FIR & update the applicable standards and technical product changes.
70007628	2016-02-10	Update to report 2515397 to revise drawings.
70027899	2015-04-23	Update of the report 2515397 to make changes.
70006756	2015-03-26	Update to report 2515397 to add housing options "H".
70013974	2014-10-24	Update to the report 2515397 to include minor drawings update.
2747968	2014-10-10	Update to include separation of Class I, Div 2 and Class II, Div 1 versions, revised drawings and model code update.
2718065	2014-05-07	Update to include revised drawings, label and model code update.
2701668	2014-03-05	Revise the existing report 2679759 in order to separate Ordinary Locations certification from the Hazloc certificate.
2679759	2013-12-05	Update to include PAFF electronics.
2662673	2013-10-24	Update to include PLICSZE-ZSA second current output electronics.
2666254	2013-09-27	Certification of Vegaflex 80 Series to the 61010 requirements
2616958	2013-04-15	Transfer of CSA certificate 2515397 for Vega Flex 80 Series from Vega America (153855) to Vega Germany (153857) and issuing of new certificate under Vega Germany.
2591398	2013-02-26	Update to add all models under letter "c = Approval:" the letter X to show Ordinary (Non-hazardous) locations approval and type 4X enclosure.
2570276	2012-10-26	Update to remove seals A, B, D, F, H, I and O which will not use with Exd version of VEGAFlex 81.



2515397

2012-08-24

CSAc-us certification of VegaFlex 80 Series level measurement.