Megaton Systems (Pty) Ltd T/A
MTEx Laboratories

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VAT/BTW No.: 4830273027, Reg No.: 2012/055110/07, T0749.

Ontploffingvoorkomingstegnologie
Explosion Prevention Technologies

ACCREDITED TEST LABORATORY

IN TERMS OF THE ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

INSPECTION AUTHORITY CERTIFICATE

ENDRESS+HAUSER (PTY) LTD.
P.O. BOX 783996
SANDTON
2146

Issued: 2021/02/16
Expire: 2023/11/13
Revision: 2
Job File: 1156

Equipment: Measuring Systems
Manufacturer: Endress+Hauser Flowtec AG
Address: Kägenstrasse 7, 4153 Reinach BL 1, Switzerland
Model/Type: Promass *** **-**********+#**#, CNGmass DCI 8*F**-**********+#**#, Cubemass DCI 8C***-**********+#**#
Serial No.: Units imported between Issued and Expiry dates.

Applicant:

ENDRESS+HAUSER (PTY) LTD.

Inspection Authority Number**: MTEx-S/20.0366 X**

Ex Rating: Refer to clause 1.

Standards used:

SANS 60079-0: 2012 Ed.5 **IEC 60079-0: 2011 Ed.6**	**Explosive atmospheres – Part 0: General requirements.**
SANS 60079-1: 2015 Ed.5 **IEC 60079-1: 2014 Ed.7**	**Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d".**
SANS 60079-11: 2012 Ed.4 **IEC 60079-11: 2011 Ed.6**	**Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i".**
SANS 60079-26: 2019 Ed.3 **IEC 60079-26: 2014 Ed.3**	**Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga.**
SANS 60079-31: 2014 Ed.2 **IEC 60079-31: 2013 Ed.2**	**Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t".**
SANS 60079-7: 2019 Ed.4 **IEC 60079-7: 2015 Ed.4**	**Explosive atmospheres - Part 7: Equipment protection by increased safety "e".**

Reviewed by + signature (ExTL):	J. Venter	
Approved by + signature (ExCB): (MTEx Laboratories Technical Signatory)	D. Young	

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mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA
AIA Number: E1

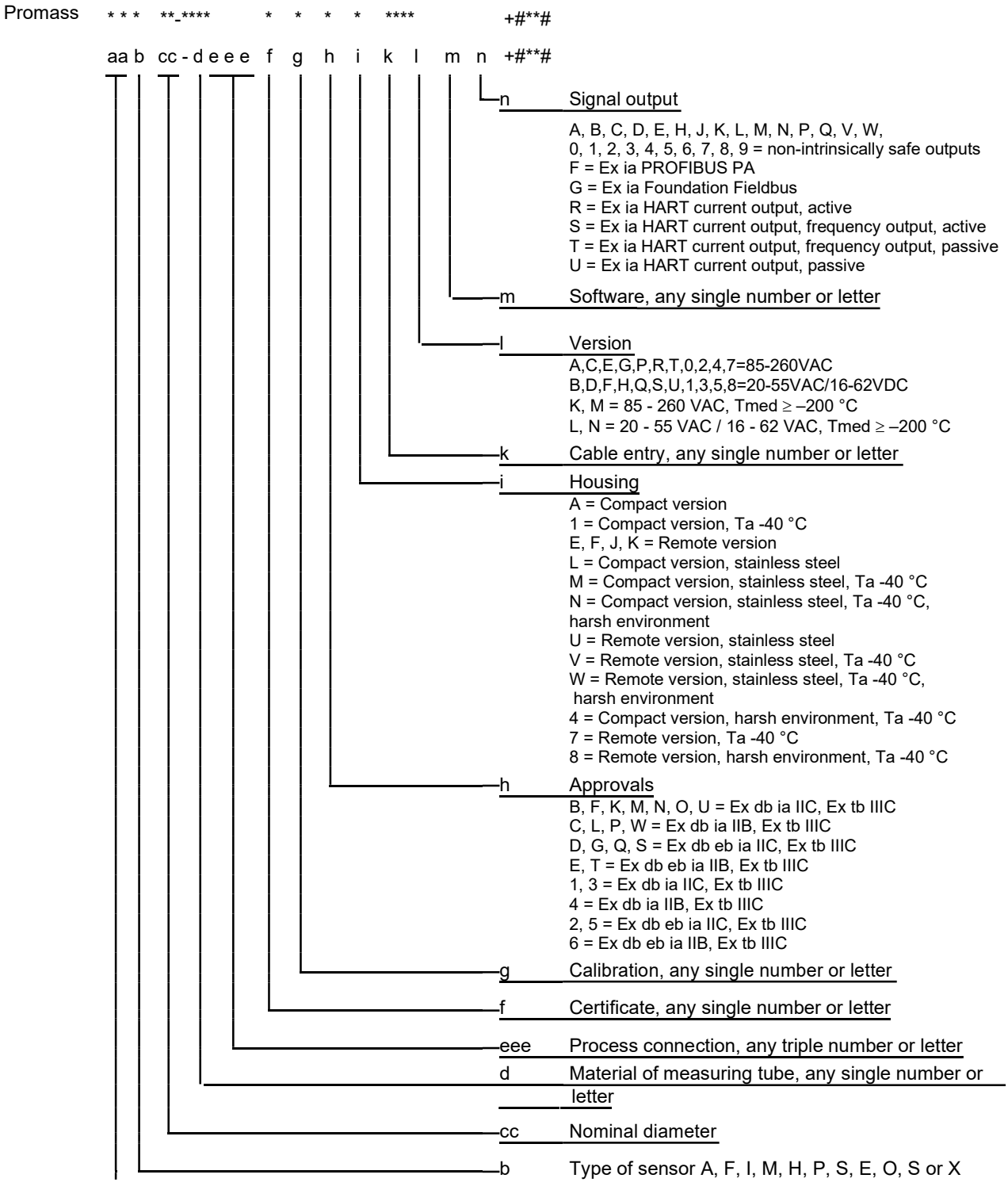
employment & labour
Department:
Employment and Labour
REPUBLIC OF SOUTH AFRICA
AIA Number: CL016

Template Ref: MTExDOC 101 Rev 6 (2020/05/28)
Print Date: 2021-02-16

1. OVERVIEW

General product information:
Subject and Type

Measuring system type Promass *** **-**********+#**#
Instead of the *** in the complete denomination letters and numerals will be inserted which characterize the following modifications:



aa Transmitter electronic 40, 80, 83 or 84

Measuring system type CNGmass DCI 8*F **-**********+#**#

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize the following modifications:

CNGmass DCI 8 * F * * - * * * * * * * * * * * * * +#**#

a F b b - c d d d e f g h i k l m +#**#

m Signal output

A, B, C, D, E, H, J, K, L, M, N, P, Q, V, W,
0, 1, 2, 3, 4, 5, 6, 7, 8, 9 = non-intrinsically safe outputs
F = Ex ia PROFIBUS PA
G = Ex ia Foundation Fieldbus
R = Ex ia HART current output, active
S = Ex ia HART current output, frequency output, active
T = Ex ia HART current output, frequency output, passive
U = Ex ia HART current output, passive

l Software, any single number or letter

k Version

A,C,E,G,P,R,T,0,2,4,7=85-260VAC
B,D,F,H,Q,S,U,1,3,5,8=20-55VAC/16-62VDC
K, M = 85 - 260 VAC, Tmed ≥ –200 °C
L, N = 20 - 55 VAC / 16 - 62 VAC, Tmed ≥ –200 °C

i Cable entry, any single number or letter

h Housing

A = Compact version
1 = Compact version, Ta -40 °C
E, F, J, K = Remote version
L = Compact version, stainless steel
M = Compact version, stainless steel, Ta -40 °C
N = Compact version, stainless steel, Ta -40 °C, harsh environment
U = Remote version, stainless steel
V = Remote version, stainless steel, Ta -40 °C
W = Remote version, stainless steel, Ta -40 °C, harsh environment
4 = Compact version, Ta -40 °C, harsh environment
7 = Remote version, Ta -40 °C
8 = Remote version, Ta -40 °C, harsh environment

g Approvals

B, K, M, N, 8 = Ex db ia IIC, Ex tb IIIC
D, S = Ex db eb ia IIC, Ex tb IIIC

f Calibration, any single number or letter

e Certification/Treatment, any single number or letter

dd Process connection, any triple number or letter

c Material of measuring tube, any single number or letter

bb Size 08, 15, 25

a Version, any single number or letter

Template: MTExDOC101 Rev 6
Approve date :(2020-05-28)

Measuring system type Cubemass DCI 8C***-********** +#**#

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize modifications:

Cubemass DCI 8C * * *-* * * * * * * * * * * * +#**#

a b b - c c d e f g h i k l m n +#**#

Without influence on explosion protection

n Calibration, any single number or letter

m Secondary containment, any single number or letter

l Process connection, any single number or letter

k Tube, any single number or letter

i Cable entry, any single number or letter

h Housing

A = Compact version
1 = Compact version, Ta -40 °C
E, F, J, K = Remote version
L = Compact version, stainless steel
M = Compact version, stainless steel, Ta -40 °C
N = Compact version, stainless steel, Ta -40 °C, harsh environment
U = Remote version, stainless steel
V = Remote version, stainless steel, Ta -40 °C
W = Remote version, stainless steel, Ta -40 °C, harsh environment
4 = Compact version, Ta -40 °C, harsh environment
7 = Remote version, Ta -40 °C
8 = Remote version, Ta -40 °C, harsh environment

g Language, any single number or letter

f Display, any single number or letter

e Power supply / Version

A, C, E, G, P, R,T, 0, 2, 4, 7 = 85 - 260 VAC
B, D, F, H, Q, S, U, 1, 3, 5, 8 = 20 - 55 VAC /16–62 VDC
K, M = 85 - 260 VAC, Tmed ≥ –200 °C
L, N = 20 - 55 VAC /16 - 62 VAC, Tmed ≥ –200 °C

d Signal output

A, B, C, D, E, H, J, K, L, M, N, P, Q, V, W, 0, 1, 2, 3,4, 5, 6, 7, 8, 9 = non-intrinsically safe outputs
F = Ex ia PROFIBUS PA
G = Ex ia Foundation Fieldbus
R = Ex ia HART current output, active
S = Ex ia HART current output, frequency output, active
T = Ex ia HART current output, frequency output, passive
U = Ex ia HART current output, passive

cc Approvals

81,84, NH, TA = Ex db ia IIC, Ex tb IIIC
82, NI = Ex db eb ia IIC, Ex tb IIIC

bb Size 01, 02, 04, 06

a Version, any single number or letter

Description

The measuring system, which serves for mass measurement according to the Coriolis principle, comprises of a transmitter with flanged sensor (compact construction) or a transmitter (separate construction) connected to a sensor by a cable.

The measuring system type Promass *** **-**********+#**#, CNGmass DCI 8*F**-**********+#**# and Cubemass DCI 8C***-**********+#**# is mounted inside the enclosure Proline G02 resp. G12, certified under IECEx BVS 06.0012 U, Test Report DE/BVS/06/2091. For the transmitter see IECEx BVS 06.0006 U, Test Report DE/BVS/06/2074. For the sensors see IECEx BVS 10.0007 U, Test Report DE/BVS/10/2018.

The possible variations are as follows

Listing of all used components

Subject and type	Certificate	Standards
Transmitter enclosure type Proline G02 and G12	IECEx BVS 06.0012 U (DE/BVS/06/2091)	IEC 60079-0:2011 IEC 60079-1:2014 IEC 60079-7:2015 IEC 60079-31:2013
Coriolis Sensors type Promass*, Sensor*	IECEx BVS 10.0007 U[2] (DE/BVS/10/2018/N2)	IEC 60079-0:2011 IEC 60079-11:2011 IEC 60079-31:2008
Transmitter electronics type Promag 5*a, Promass 40/8*a, Proline Prosonic Flow 9*a, T-mass 6*a	IECEx BVS 06.0006 U (DE/BVS/06/2074)	IEC 60079-0:2011 IEC 60079-11:2011

[1] No applicable technical differences
[2] Technical differences evaluated and found satisfactory

Marking

Compact Versions

Type/Order code	Marking Gas	Marking Dust
Promass **M DN8…80-******2)1)***F)+#**# Promass **I DN8…80-******2)1)***F)+#**# Promass **3) DN8…50-******2)1)***F)+#**# Promass **A DN1…4-******2)1)***F)+#**# Promass **F DN8…250-******2)1)***F)+#**# Promass **O DN80…250-******2)1)***F)+#**# Promass **E DN8…80-******2)1)***F)+#**# Promass **X DN350-******2)1)***F)+#**# Cubemass DCI 8C***-D)F)***1)*****+#**#	Ex db ia IIC T1-T6 Gb	Ex tb IIIC T** Db

Promass **M DN8…80-******2)1)***E)+#**# Promass **I DN8…80-******2)1)***E)+#**# Promass **3) DN8…50-******2)1)***E)+#**# Promass **A DN1…4-******2)1)***E)+#**# Promass **F DN8…250-******2)1)***E)+#**# Promass **O DN80…250-******2)1)***E)+#**# Promass **E DN8…80-******2)1)***E)+#**# Promass **X DN350-******2)1)***E)+#**# Cubemass DCI 8C***-D)E)***1)*****+#**#	Ex db ia [ia Ga] IIC T1-T6 Gb	Ex tb [ia Da] IIIC T** Db
Promass **M DN80-******4)1)***F)+#**# Promass **I DN41/50/51/80-******4)1)***F)+#**# Promass **F DN80…250-******4)1)***F)+#**# Promass **O DN80…250-******4)1)***F)+#**# Promass **3) DN50-******4)1)***F)+#**# Promass **E DN80-******4)1)***F)+#**# Promass **X DN350-******4)1)***F)+#**#	Ex db ia IIB T1-T6 Gb	Ex tb IIIC T** Db
Promass **M DN80-******4)1)***E)+#**# Promass **I DN41/50/51/80-******4)1)***E)+#**# Promass **F DN80…250-******4)1)***E)+#**# Promass **O DN80…250-******4)1)***E)+#**# Promass **3) DN50-******4)1)***E)+#**# Promass **E DN80-******4)1)***E)+#**# Promass **X DN350-******4)1)***E)+#**#	Ex db ia [ia Ga] IIB T1-T6 Gb	Ex tb [ia Da] IIIC T** Db
Promass **M DN8…80-******5)1)***F)+#**# Promass **I DN8…80-******5)1)***F)+#**# Promass **3) DN8…50-******5)1)***F)+#**# Promass **A DN1…4-******5)1)***F)+#**# Promass **F DN8…250-******5)1)***F)+#**# Promass **O DN80…250-******5)1)***F)+#**# Promass **E DN8…80-******5)1)***F)+#**# Promass **X DN350-******5)1)***F)+#**# Cubemass DCI 8C***-B)F)***1)*****+#**#	Ex db eb ia IIC T1-T6 Gb	Ex tb IIIC T** Db
Promass **M DN8…80-******5)1)***E)+#**# Promass **I DN8…80-******5)1)***E)+#**# Promass **3) DN8…50-******5)1)***E)+#**# Promass **A DN1…4-******5)1)***E)+#**# Promass **F DN8…250-******5)1)***E)+#**# Promass **O DN80…250-******5)1)***E)+#**# Promass **E DN8…80-******5)1)***E)+#**# Promass **X DN350-******5)1)***E)+#**# Cubemass DCI 8C***-B)E)***1)*****+#**#	Ex db eb ia [ia Ga] IIC T1-T6 Gb	Ex tb [ia Da] IIIC T** Db
Promass **M DN80-******6)1)***F)+#**# Promass **I DN41/50/51/80-******6)1)***F)+#**# Promass **F DN80…250-******6)1)***F)+#**# Promass **O DN80…250-******6)1)***F)+#**# Promass **3) DN50-******6)1)*** F)+#**# Promass **E DN80-******6)1)*** F)+#**# Promass **X DN350-******6)1)***F)+#**#	Ex db eb ia IIB T1-T6 Gb	Ex tb IIIC T** Db
Promass **M DN80-******6)1)***E)+#**# Promass **I DN41/50/51/80-******6)1)***E)+#**# Promass **F DN80…250-******6)1)***E)+#**# Promass **O DN80…250-******6)1)***E)+#**# Promass **3) DN50-******6)1)***E)+#**#	Ex db eb ia [ia Ga] IIB T1-T6 Gb	Ex tb [ia Da] IIIC T** Db

Promass **E DN80-******6)1)***E)+#**# Promass **X DN350-******6)1)***E)+#**#		
Promass **F DN8…250-******7)1)***F)+#**# Promass **O DN80…250-******7)1)***F)+#**# Promass **X DN350-******7)1)***F)+#**#	Ex db ia IIC T1-T6 Ga/Gb 9)	Ex tb IIIC T** Db
Promass **F DN8…250-******7)1)*** E)+#**# Promass **O DN80…250-******7)1)***E)+#**# Promass **X DN350-******7)1)***E)+#**#	Ex db ia [ia Ga] IIC T1-T6 Ga/Gb 9)	Ex tb [ia Da] IIIC T** Db
Promass **F DN80…250-******41)***F)+#**# Promass **O DN80…250-******41)***F)+#**# Promass **X DN350-******41)***F)+#**#	Ex db ia IIB T1-T6 Ga/Gb 9)	Ex tb IIIC T** Db
Promass **F DN80…250-******41)***E)+#**# Promass **O DN80…250-******41)***E)+#**# Promass **X DN350-******41)***E)+#**#	Ex db ia [ia Ga] IIB T1-T6 Ga/Gb 9)	Ex tb [ia Da] IIIC T** Db
Promass **F DN8…250-******8)1)***F)+#**# Promass **O DN80…250-******8)1)***F)+#**# Promass **X DN350-******8)1)***F)+#**#	Ex db eb ia IIC T1-T6 Ga/Gb 9)	Ex tb IIIC T** Db
Promass **F DN8…250-******8)1)***E)+#**# Promass **O DN80…250-******8)1)***E)+#**# Promass **X DN350-******8)1)***E)+#**#	Ex db eb ia [ia Ga] IIC T1-T6 Ga/Gb 9)	Ex tb [ia Da] IIIC T** Db
Promass **F DN80…250-******61)***F)+#**# Promass **O DN80…250-******61)***F)+#**# Promass **X DN350-******61)***F)+#**#	Ex db eb ia IIB T1-T6 Ga/Gb 9)	Ex tb IIIC T** Db
Promass **F DN80…250-******61)***E)+#**# Promass **O DN80…250-******61)***E)+#**# Promass **X DN350-******61)***E)+#**#	Ex db eb ia [ia Ga] IIB T1-T6 Ga/Gb 9)	Ex tb [ia Da] IIIC T** Db
CNGmass DCI 8*F **-******A)1)***F)+#**#	Ex db ia IIC T1-T5 Gb	Ex tb IIIC T** Db
CNGmass DCI 8*F **-******A)1)***E)+#**#	Ex db ia [ia Ga] IIC T1-T5 Gb	Ex tb [ia Da] IIIC T** Db
CNGmass DCI 8*F **-******C)1)***F)+#**#	Ex db eb ia IIC T1-T5 Gb	Ex tb IIIC T** Db
CNGmass DCI 8*F **-******C)1)***E)+#**#	Ex db eb ia [ia Ga] IIC T1-T5 Gb	Ex tb [ia Da] IIIC T** Db

1. At this place A, L, M, N, 1 or 4 will be inserted
2. At this place B, F, K, M, N, O or U will be inserted
3. At this place H, P or S will be inserted
4. At this place C, L, P or W will be inserted
5. At this place D, G, Q or S will be inserted
6. At this place E or T will be inserted
7. At this place 1 or 3 will be inserted
8. At this place 2 or 5 will be inserted
9. Comment: Zone 0 inside measuring tube

A) At this place B, K, M, N or 8 will be inserted
B) At this place 82 or NI will be inserted
C) At this place D or S will be inserted
D) At this place 81, 84, NH or TA will be inserted
E) At this place F, G, R, S, T or U will be inserted
F) At this place A, B, C, D, E, H, J, K, L, M, N, P, Q, V, W, 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9 will be inserted

Remote version
Transmitter

Type/Order code	Marking Gas	Marking Dust
Promass *** **-******2)1)***F)+#**# Promass *** **-******7)1)***F)+#**#	Ex db [ia Ga] IIC T1-T6 Gb	Ex tb [ia Da] IIIC T** Db

Cubemass DCI 8C***-D)F)***1)*****+#**#		
Promass *** **-******2)1)***E)+#**# Promass *** **-******7)1)***E)+#**# Cubemass DCI 8C***-D)E)***1)*****+#**#	Ex db [ia Ga] IIC T1-T6 Gb	Ex tb [ia Da] IIIC T** Db
Promass *** **-******4)1)***F)+#**# Promass *** **-******41)***F)+#**#	Ex db [ia Ga] IIB T1-T6 Gb	Ex tb [ia Da] IIIC T** Db
Promass *** **-******4)1)***E)+#**# Promass *** **-******41)***E)+#**#	Ex db [ia Ga] IIB T1-T6 Gb	Ex tb [ia Da] IIIC T** Db
Promass *** **-******5)1)***F)+#**# Promass *** **-******8)1)***F)+#**# Cubemass DCI 8C***-B)F)***1)*****+#**#	Ex db eb [ia Ga] IIC T1-T6 Gb	Ex tb [ia Da] IIIC T** Db
Promass *** **-******5)1)***E)+#**# Promass *** **-******8)1)***E)+#**# Cubemass DCI 8C***-B)E)***1)*****+#**#	Ex db eb [ia Ga] IIC T1-T6 Gb	Ex tb [ia Da] IIIC T** Db
Promass *** **-******6)1)***F)+#**# Promass *** **-******61)***F)+#**#	Ex db eb [ia Ga] IIB T1-T6 Gb	Ex tb [ia Da] IIIC T** Db
Promass *** **-******6)1)***E)+#**# Promass *** **-******61)***E)+#**#	Ex db eb [ia Ga] IIB T1-T6 Gb	Ex tb [ia Da] IIIC T** Db
CNGmass DCI 8*F **-******A)1)***F)+#**#	Ex db [ia Ga] IIC T1-T5 Gb	Ex tb [ia Da] IIIC T** Db
CNGmass DCI 8*F **-******A)1)***E)+#**#	Ex db [ia Ga] IIC T1-T5 Gb	Ex tb [ia Da] IIIC T** Db
CNGmass DCI 8*F **-******C)1)***F)+#**#	Ex db eb [ia Ga] IIC T1-T5 Gb	Ex tb [ia Da] IIIC T** Db
CNGmass DCI 8*F **-******C)1)***E)+#**#	Ex db eb [ia Ga] IIC T1-T5 Gb	Ex tb [ia Da] IIIC T** Db

1. At this place E, F, J, K, U, V, W, 7 or 8 will be inserted
2. At this place B, F, K, M, N, O or U will be inserted
3. At this place C, L, P or W will be inserted
4. At this place D, G, Q or S will be inserted
5. At this place E or T will be inserted
6. At this place 1 or 3 will be inserted
7. At this place 2 or 5 will be inserted

A) At this place B, K, M, N or 8 will be inserted
B) At this place 82 or NI will be inserted
C) At this place D or S will be inserted
D) At this place 81, 84, NH or TA will be inserted
E) At this place F, G, R, S, T or U will be inserted
F) At this place A, B, C, D, E, H, J, K, L, M, N, P, Q, V, W, 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9 will be inserted

Sensor

Type/Order code	**Marking Gas**	**Marking Dust**
Promass **M DN8…80-******1)*****+#**# Promass **I DN8…80-******1)*****+#**# Promass **3)DN8…50-******1)*****+#**# Promass **A DN1…4-******1)*****+#**# Promass **F DN8…250-******1)*****+#**# Promass **O DN80…250-******1)*****+#**# Promass **E DN8…80-******1)*****+#**# Promass **X DN350-******1)*****+#**# Promass **M DN8…80-******5)*****+#**# Promass **I DN8…80-******5)*****+#**# Promass **3) DN8…50-******5)*****+#**# Promass **A DN1…4-******5)*****+#**# Promass **F DN8…250-******5)*****+#**# Promass **O DN80…250-******5)*****+#**#	Ex ia IIC T1-T6 Gb	Ex ia tb IIIC T** Db

Promass **E DN8…80-******5)*****+#**# Promass **X DN350-******5)*****+#**# Sensor C 8C* DN1...6-D)**********+#**# Sensor C 8C* DN1...6-B)**********+#**#		
Promass **M DN80-******4)*****+#**# Promass **I DN41/50/51/80-******4)*****+#**# Promass **F DN80…250-******4)*****+#**# Promass **O DN80…250-******4)*****+#**# Promass **3) DN50-******4)*****+#**# Promass **E DN80-******4)*****+#**# Promass **X DN350-******4)*****+#**# Promass **M DN80-******6)*****+#**# Promass **I DN41/50/51/80-******6)*****+#**# Promass **F DN80…250-******6)*****+#**# Promass **O DN80…250-******6)*****+#**# Promass **3) DN50-******6)*****+#**# Promass **X DN350-******6)*****+#**#	Ex ia IIB T1-T6 Gb	Ex ia tb IIIC T** Db
Promass **F DN8…250-******7)*****+#**# Promass **O DN80…250-******7)*****+#**# Promass **X DN350-******7)*****+#**# Promass **F DN8…250-******8)*****+#**# Promass **O DN80…250-******8)*****+#**# Promass **X DN350-******8)*****+#**#	Ex ia IIC T1-T6 Ga/Gb 9)	Ex ia tb IIIC T** Db
Promass **F DN80…250-******4*****+#**# Promass **O DN80…250-******4*****+#**# Promass **X DN350-******4*****+#**# Promass **F DN80…250-******6*****+#**# Promass **O DN80…250-******6*****+#**# Promass **X DN350-******6*****+#**#	Ex ia IIB T1-T6 Ga/Gb 9)	Ex ia tb IIIC T** Db
Promass FP DN8…25-******A)*****+#**# Promass FP DN8…25-******C)*****+#**#	Ex ia IIC T1-T5 Gb	Ex ia tb IIIC T** Db

1. At this place B, F, K, M, N, O or U will be inserted
2. At this place H, P or S will be inserted
3. At this place C, L, P or W will be inserted
4. At this place D, G, Q or S will be inserted
5. At this place E or T will be inserted
6. At this place 1 or 3 will be inserted
7. At this place 2 or 5 will be inserted
8. Comment: Zone 0 inside measuring tube

A) At this place B, K, M, N or 8 will be inserted
B) At this place 82 or NI will be inserted
C) At this place D or S will be inserted
D) At this place 81, 84, NH or TA will be inserted

2. REASON FOR REVIEW

Revision 0: ARP 0108 requirement.
Revision 1 & 2: Editorial Corrections.

3. DOCUMENTATION PROVIDED

- IECEx Certificate of Conformity (IECEx BVS 06.0019 X Issue No 4.).
- IEC Quality Assessment Report (DE/TUN/QAR06.0004/08)

4. ELECTRICAL / SAFETY PARAMETERS

1. Power supply (terminals no. 1 (L/+) and 2 (N/-)

Nominal Voltage		AC	85 to 260	V
pure AC version		DC	16 to 62	V
DC/AC version		AC	20 to 55	V
Or				
max. voltage	U^m	AC	260	V

2. I/O-Circuits

2.1. Non-intrinsically safe I/O-Circuits

Type	Terminal No.	Safety Parameters
Promass*** ** _ **********1)+#**# CNGmass DCI 8*F **-**********1)+#**# Cubemass DCI 8C***-**1)*********+#**# with 1) = A, B, C, D, E, H, J, K, L, M, N, P, Q, V, W, 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9	20…27	U_m = 260 V, I_{max} = 0.5 A

2.2. Intrinsically safe I/O-Circuits

Type	Terminal No	Safety Parameters	
		Ex ia IIC	
Promass *** **-**********1)+#**# CNGmassDCI 8*F **-**********1)+#**# Cubemass DCI 8C***-**1)*********+#**# with 1) = F or G	26 and 27	U_i = 30 V I_i = 600 mA P_i = 8.5 W C_i ≤ 5 nF L_i ≤ 10 µH	
Promass *** **-**********R+#**# CNGmass DCI 8*F **-**********R+#**# Cubemass DCI 8C***-**R*********+#**#	24 and 25 26 and 27	U_o = 21.8 V I_o =90 mA P_o = 491 mW	
		C_o = 0.16 µF L_o =4.1mH	C_o =1.16 µF L_o= 15mH
		U_i = 30 V I_i = 10 mA P_i = 300 mW C_i ≤ 6 nF L_i = negligible	
Promass *** **-**********S+#**# CNGmass DCI 8*F **-**********S+#**# Cubemass DCI 8C***-**S*********+#**#	24 and 25	U = 30 V I_i = 500 mA P_i = 600 mW C_i ≤ 6 nF L_i = negligible	
	26 and 27	U_o = 21.8 V I_o = 90 mA P_o = 491 mW	
		C_o = 0.16 µF	C_o = 1.16 µF

		L_o = 4.1 mH	L_o= 15 mH
		U_i= 30 V I_i = 10 mA P_i = 300 mW C_i ≤ 6 nF L_i = negligible	
Promass *** **-**********T+#**# CNGmass DCI 8*F **-**********T+#**# Cubemass DCI 8C***-**T*********+#**#	24 and 25	U_i = 30 V I_i =500 mA P_i = 600 mW C_i ≤ 6 nF L_i = negligible	
	26 and 27	U_i = 30 V I_i = 100 mA P_i =1.25 W C_i ≤ 6 nF L_i = negligible	
Promass *** **-**********U+#**# CNGmass DCI 8*F **-**********U+#**# Cubemass DCI 8C***-**U*********+#**#	24 and 25 26 and 27	U_i = 30 V I_i = 100 mA P_i = 1.25 W C_i ≤ 6 nF L_i = negligible	

2.3. Intrinsically safe sensor circuits

Terminals / Plugs	4,5	6,7	8	9,10	11,12	41,42
Signal	S1 + S1 -	S2 + S2 -	GND	TM + TM -	TT + TT -	UErr + UErr -
Designation	Sensor Circuit		Pipe ground	Temperature circuit		Exciter circuit

For the connection of the remote sensor using an Endress+Hauser supplied multicore cable with a max. cable length of 120 m and the following max values:
Cable Inductance ≤ 0.5 µH per meter
Cable capacitance ≤ 0.5 nF per meter

3. Thermal Parameters

3.1. Medium temperature

Type	Medium Temperature
Promass **E**-**********+#**#	-40 °C ≤ T_{Med} ≤ 140 °C -50 °C ≤ T_{Med} ≤ 200 °C (only for Promass E DN80)
Promass **I**-**********+#**# Promass **M**-**********+#**#	-50 °C ≤ T_{Med} ≤ 150 °C
Promass **A**-**********+#**# Promass **F**-**********+#**# Promass **O**-**********+#**# Promass **H**-**********+#**# Promass **P**-**********+#**# Promass **S**-**********+#**#	-50 °C ≤ T_{Med} ≤ 200 °C -50 °C ≤ T_{Med} ≤ 350 °C (only for Promass F(HT)

Promass **X**-**********+#**#	
Promass **A**-*******(E,F,J,K,U,V,W,7,8)*(K,L,M,N)**+#**# Promass **F**-*******(E,F,J,K,U,V,W,7,8)*(K,L,M,N)**+#**# Promass **O**-*******(E,F,J,K,U,V,W,7,8)*(K,L,M,N)**+#**# Promass **H**-*******(E,F,J,K,U,V,W,7,8)*(K,L,M,N)**+#**# Promass **P**-*******(E,F,J,K,U,V,W,7,8)*(K,L,M,N)**+#**# Promass **S**-*******(E,F,J,K,U,V,W,7,8)*(K,L,M,N)**+#**# Promass **E80-*******(E,F,J,K,U,V,W,7,8)*(K,L,M,N)**+#**# Promass **X**-*******(E,F,J,K,U,V,W,7,8)*(K,L,M,N)**+#**#	-200 °C ≤ T_{Med} ≤ 200 °C
CNGmass DCI 8*F **-**********+#**#	-50 °C ≤ T_{Med} ≤ 150 °C
CNGmass DCI 8*F **-*******(E,F,J,K,U,V,W,7,8)*(K,L,M,N)**+#**#	-200 °C ≤ T_{Med} ≤ 150 °C
Cubemass DCI 8C***-**********+#**#	-50 °C ≤ T_{Med} ≤ 200 °C
Cubemass DCI 8C***-***(K,L,M,N)**(E,F,J,K,U,V,W,7,8)*****+#**#	-200 °C ≤ T_{Med} ≤ 200 °C

3.2. Ambient temperature range

Compact Version

Type	Ambient temperature range
Promass *****-*******(A,L)****+#**# CNGmass DCI 8*F **-*******(A,L)****+#**# Cubemass DCI 8C***-******(A,L)*****+#**#	-20 °C ≤ T_a ≤ 60 °C
Promass *****-*******(1,4,M,N)****+#**# CNGmass DCI 8*F **-*******(1,4,M,N)****+#**# Cubemass DCI 8C***-******(1,4,M,N)*****+#**#	-40 °C ≤ T_a ≤ 60 °C

Remote version, transmitter and sensor

Type	Ambient temperature range
Promass *****-*******(E,F,J,K,U)****+#**# CNGmass DCI 8*F **-*******(E,F,J,K,U)****+#**# DCI 8C***-******(E,F,J,K,U)*****+#**#	-20 °C ≤ T_a ≤ 60 °C
Promass *****-*******(7,8,V,W)****+#**# CNGmass DCI 8*F**-*******(7,8,V,W)****+#**# Cubemass DCI 8C***-******(7,8,V,W)*****+#**#	-40 °C ≤ T_a ≤ 60 °C

3.3. The relationship between maximum ambient, medium temperatures, temperature class and maximum surface temperature

Compact Version

Temperature table	Max. medium temperature [°C]					
Temperature class	T6	T5	T4	T3	T2	T1
max. surface temperature, Group III	85 °C	100 °C	135 °C	200 °C	300°C	450°C
T_a = 45 °C:						
Promass E DN8/15/25/40/50	45	100	130	140	140	140
Promass P/S DN8	45	65	100	160	200	200
T_a = 50 °C:						
Promass M DN8/15	55	95	130	150	150	150
Promass M DN25/40	60	95	130	150	150	150
Promass M DN50	65	95	130	150	150	150
Promass M DN80	65	80	110	150	150	150
Promass F DN8/15/25/40	55	95	130	150/170*)	200*)	200*)

Promass F DN50	60	95	130	150/170*)	200*)	200*)
Promass F DN80/100/150/250	60	75	110	150/170*)	200*)	200*)
Promass I DN8/15/16/25	60	95	130	150	150	150
Promass I DN26/40/41/50/51/80	70	85	120	150	150	150
Promass H DN8	50	65	100	160	200	200
Promass H DN15/25/40/50	60	75	115	180	200	200
Promass E DN25/40/50	50	100	130	140	140	140
Promass P/S DN8	–	65	100	160	200	200
Promass P/S DN15/25	50	75	115	180	200	200
Promass P/S DN40	55	75	115	180	200	200
Promass P/S DN50	60	75	110	180	200	200
Promass O DN80/100/150/250	60	75	110	150/170*)	200*)	200*)
Promass X DN350	60	75	110	150/170*)	200*)	200*)
T_a = 60 °C:						
Promass A DN1/2/4	60	95	130	150	200	200
Promass M DN8/15	55	95	100	100	100	100
Promass M DN25/40	60	95	100	100	100	100
Promass M DN50	65	95	100	100	100	100
Promass M DN80	65	80	100	100	100	100
Promass F DN8/15/25/40	55	95	100	100	100	100
Promass F DN50	60	95	100	100	100	100
Promass F DN80/100/150/250	60	75	100	100	100	100
Promass I DN8/15/16/25	60	95	130	150*)	150*)	150*)
Promass I DN26/40/41/50/51/80	70	85	120	150*)	150*)	150*)
Promass H DN8	50	65	100	160	200*)	200*)
Promass H DN15/25/40/50	60	75	115	160/180*)	200*)	200*)
Promass E DN8/15/25/40/50	-	100	130	140	140	140
Promass E DN80	60	75	110	150/170*)	200*)	200*)
Promass F(HT) DN25/50/80	65	80	110*)	175*)	265*)	350*)
Promass P/S DN8	–	65	100	160	200*)	200*)
Promass P/S DN15/25/40	–	75	115	160/180*)	200*)	200*)
Promass P/S DN50	60	75	110	160/180*)	200*)	200*)
Promass O DN80/100/150/250	60	75	100	100	100	100
Promass X DN350	60	75	100	100	100	100

*) For the listed medium temperature the measuring unit shall not be installed such a way that the transmitter enclosure is located above the sensor.

CNGmass DCI 8*F with sensor Promass FP

Temperature table	Max. medium temperature [°C]					
Temperature class	T6	T5	T4	T3	T2	T1
max. surface temperature, Group III	85 °C	100 °C	135 °C	200 °C	300°C	450°C
T_a = 60 °C:						
Promass FP DN8/15	-	80	130	130	150	150
Promass FP DN25	-	95	130	150	150	150

Cubemass DCI 8C* with Sensor C

Temperature table	Max. medium temperature [°C]					
Temperature class	T6	T5	T4	T3	T2	T1

max. surface temperature, Group III	85 °C	100 °C	135 °C	200 °C	300°C	450°C
T_a = 50 °C:						
Sensor C DN1/2/4/6	50	95	130	150	200	200
T_a = 60 °C:						
Sensor C DN1/2/4/6	-	95	130	150	200	200

Remote version
Transmitter

At an ambient temperature of 60 °C the interior temperature and therefore the surface temperature is ≤ 80 °C. The remote version transmitter therefore has temperature class T6.

Sensor

Temperature table	Max. medium temperature [°C]					
Temperature class	T6	T5	T4	T3	T2	T1
max. surface temperature, Group III	85 °C	100 °C	135 °C	200 °C	300°C	450°C
T_a = 45 °C:						
Promass E DN8/15/25/40/50	45	100	130	140	140	140
Promass P/S DN8	45	65	100	160	200	200
T_a = 50 °C:						
Promass E DN25/40/50	50	100	130	140	140	140
Promass P/S DN8	–	65	100	160	200	200
Promass P/S DN15/25	50	75	115	180	200	200
Promass P/S DN40	55	75	115	180	200	200
T_a = 60 °C:						
Promass A DN1/2/4	60	95	130	150	200	200
Promass M DN8/15	55	95	100	100	100	100
Promass M DN25/40	60	95	100	100	100	100
Promass M DN50	65	95	100	100	100	100
Promass M DN80	65	80	100	100	100	100
Promass F DN8/15/25/40	55	95	100	100	100	100
Promass F DN80/100/150/250	60	75	100	100	100	100
Promass I DN8/15/16/25	60	95	130	150*)	150*)	150*)
Promass I DN26/40/41/50/51/80	70	85	120	150*)	150*)	150*)
Promass H DN8	50	65	100	160	200*)	200*)
Promass H DN15/25/40/50	60	75	115	160/180*)	200*)	200*)
Promass E DN8/15/25/40/50	-	100	130	140	140	140
Promass E DN80	60	75	110	150/170*)	200*)	200*)
Promass F(HT) DN25/50/80	65	80	110*)	175*)	265*)	350*)
Promass P/S DN8	–	65	100	160	200*)	200*)
Promass P/S DN15/25/40	–	75	115	160/180*)	200*)	200*)
Promass P/S DN50	60	75	110	160/180*)	200*)	200*)
Promass O DN80/100/150/250	60	75	100	100	100	100
Promass X DN350	60	75	100	100	100	100

CNGmass DCI 8*F with sensor Promass FP

Temperature table	Max. medium temperature [°C]					
Temperature class	T6	T5	T4	T3	T2	T1
max. surface temperature,	85 °C	100 °C	135 °C	200 °C	300°C	450°C

Group III						
T_a = 60 °C:						
Promass FP DN8/15	–	80	130	130	150	150
Promass FP DN25	–	95	130	150	150	150

Cubemass DCI 8C* with Sensor C

Temperature table	Max. medium temperature [°C]					
Temperature class	T6	T5	T4	T3	T2	T1
max. surface temperature, Group III	85 °C	100 °C	135 °C	200 °C	300°C	450°C
T_a = 50 °C:						
Sensor C DN1/2/4/6	50	95	130	150	200	200
T_a = 60 °C:						
Sensor C DN1/2/4/6	-	95	130	150	200	200

Ingres Protection IP6X

5. INSTALLATION INSTRUCTIONS

The instructions provided with the product shall be followed in detail to assure safe operation.

6. CONDITIONS OF CERTIFICATE (X)

- 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 be employed only for those media, for which the wetted parts are known to be suitable (for EPL Ga).

- For the application of the transmitters in an ambient temperature of less than -20 °C suitable cable and cable entries or conduit entries certified for this condition shall be used. Entry holes which are not needed shall be closed by stopping plugs separately certified for this purpose.

- Some of the dimensions of the flameproof joints exceed the permissible minimum values or go below the permissible maximum values which are given by IEC 60079-1:2014. For information concerning these dimensions contact the manufacturer.

7. MARKING

For validity purposes, the following marking must be added to all equipment covered by this certificate:

Manufacturer: Endress+Hauser Flowtec AG
Supplier: Endress+Hauser (Pty) Ltd.
Equipment: Measuring systems
Model/Type: Promass *** **-**********+#**#, CNGmass DCI 8*F**-**********+#**#, Cubemass DCI 8C***-**********+#**#
IA Number: MTEx-S/20.0366 X
Ex Rating: Refer to clause 1.
Serial No.: -----

Note: It is the responsibility of the supplier to ensure that the marking label complies with the ARP 0108.

MTEx Laboratories

End of Report