EXPLOLABS
Explosion Prevention Services
(Pty) Ltd
Reg No: 1999/027771/07

7 Spanner Rd / PO Box 467
Olifantsfontein
1665
Tel: +27 (11) 316 4601
Fax: +27 (11) 316 5670
E-mail: admin-mgr@explolabs.co.za

GOVERNMENT APPROVED TEST LABORATORY

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

IA CERTIFICATE

Date Issued: **30 May 2023**
*Expiry date: **30 May 2026**

Issue: 8

Ex – Type Examination Certificate

Certificate Number: **S-XPL/10.0120**
Equipment: **Microwave barrier**
Model / Type: **VEGAMIP MPR61(*).******R/T*** & MPT61(*).******T*** & MPR62(*).******R/T*****
Applicant: **VEGA Grieshaber KG**
Am Hohenstein 113, 77761 Schiltach
Germany
Manufacturer: **VEGA Grieshaber KG**
Serial No: All serial numbers imported between issued- and expire date and all serial numbers covered by a valid report or acceptable product certification mark.

Supplied by
VEGA Grieshaber KG
Identified by Inspection Authority number
S-XPL/10.0120

And as described in the Explolabs file number **XPL/11048/10.0120 Issue 8** is hereby certified "Explosion Protected (Refer to clause 1, for Ex Rating)", having been examined and inspected in accordance with the relevant requirements of South African Standards.

SANS 60079-0: 2012 Ed 5 **IEC 60079-0: 2011 Ed 6**	Explosive atmospheres Part 0: Equipment — General requirements
SANS 60079-31: 2014 Ed 2 **IEC 60079-31: 2013 Ed 2**	Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"

Risk of ignition provided:

Protection afforded	Equipment Protection Level (EPL) Group	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
Very high	Da Group III	Two independent means of protection or safe even when two faults occur independently of each other	Equipment remains functioning in zones 20, 21 and 22	See manual
High	Db Group III	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains functioning in zones 21 and 22	
Enhanced	Dc Group III	Suitable for normal operation	Equipment remains functioning in zone 22	

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 9(2) of the Occupational Health and Safety Act, provided that the apparatus is used as relevant in accordance with:

i) SANS 10086 and IEC/SANS 61241-14 requirements as applicable;
ii) Any conditions mentioned in the above report;
iii) Any relevant requirements and codes of practice enforced in terms of the Mine Health and Safety Act or Occupational Health and Safety Act; and
iv) Any restrictions and conditions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health and Safety.
v) A revision certificate replaces all previous version of the certificate.
vi) * - Only covers equipment Imported between the "Issued" and "Expire" dates.
vii) If and when your QAN (Quality Assurance Notification) Certificate for your equipment manufacturer expires during the valid period of the IA Certification (issued for your equipment) and a new certificate is not submitted the existing IA Certification will then be cancelled. It is thus the client's responsibility to always submit the updated and valid QAN certificate(s) to Explolabs (Pty) Ltd

This certificate supersedes all previous documents bearing the reference no XPL/11048/10.0120 Issue 7.

1. GENERAL

The marking of the Microwave barrier shall include the following:

Ex ta IIIC T* Da
Ex ta/tb IIIC T* Da/Db
Ex ta/tc IIIC T* Da/Dc
Ex tb IIIC T* Db
IP66
***max. surface temperature see manual**

Product description
Subject and type
Microwave barrier type
VEGAMIP MPR61(*).** * ** * * * * * * (Receiver)

Additional equipment
X – without
* - antenna extension, air purge connection etc.

Cable entry/cable gland
M – M20x1.5/with
N – 1/2NPT/without
J – 1/2NPT/with
* - separately certified cable glands and blind plugs (M20x1.5 or 1/2NPT)

Housing/protection
A – aluminium/IP66
V – stainless steel 316L/IP66
H – Al special colour/IP66/68 0.2bar

Electronics
R – power supply DC 20…72 V/AC 20…253 V
T – power supply DC 20…55 V
Load DC 20…55 V, 400 mA

Seal process fitting
* - FKM, FFKM…

Process fitting see manual

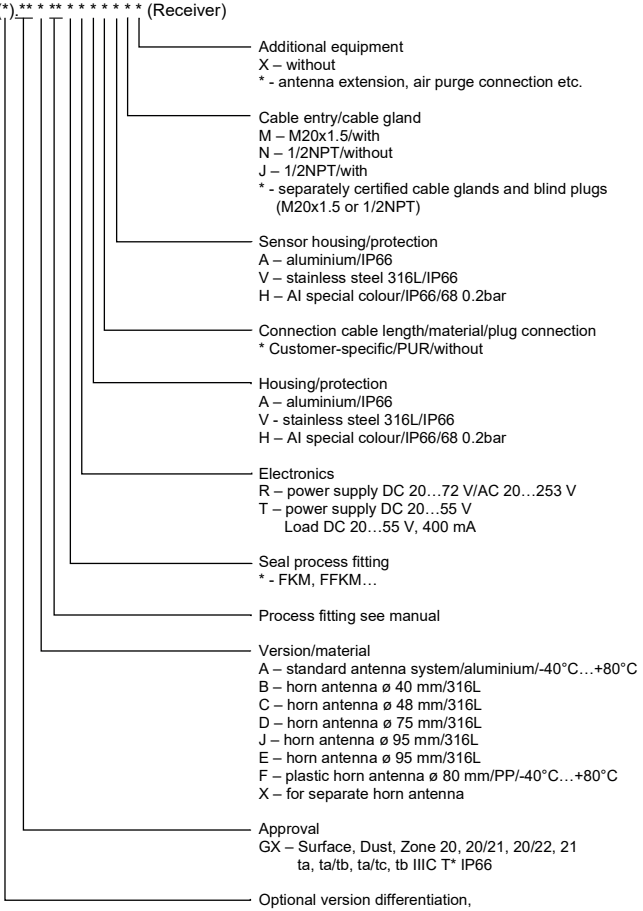
Version/material
A – standard antenna system/aluminium/-40°C…+80°C
B – horn antenna ø 40 mm/316L
C – horn antenna ø 48 mm/316L
D – horn antenna ø 75 mm/316L
J – horn antenna ø 95 mm/316L
E – horn antenna ø 95 mm/316L
F – plastic horn antenna ø 80 mm/PP/-40°C…+80°C
X – for separate horn antenna

Approval
GX – Surface, Dust, Zone 20, 20/21, 20/22, 21
ta, ta/tb, ta/tc, tb IIIC T* IP66
DK - Surface, Dust, Zone 20, 20/21, 20/22, 21
ta, ta/tb, ta/tc, tb IIIC T* IP66 +
Surface, Gas, Zone 0/1, 1 Ex db IIC T6 Ga/Gb, Gb[1]

Optional version differentiation,
Without relevant for explosion protection

[1] The assessment for use in explosive gas atmospheres is not part of this test report.

Microwave barrier type
VEGAMIP MPR62(*)-** * ** * * * * * * * * (Receiver)



Microwave barrier type
VEGAMIP MPT61(*).** * ** * T * * * (Transmitter)

Additional equipment
X – without
* - antenna extension, air purge connection etc.

Cable entry/cable gland
M – M20x1.5/with
N – 1/2NPT/without
J – 1/2NPT/with
* - separately certified cable glands and blind plugs (M20x1.5 or 1/2NPT)

Housing/protection
A – aluminium/IP66
V – stainless steel 316L/IP66
H – Al special colour/IP66/68 0.2bar

Electronics
T – power supply DC 20…72 V / AC 20…253 V

Seal process fitting
* - FKM, FFKM…

Process fitting
**see manual

Version/material
A – standard antenna system/aluminium/-40°C…+80°C
B – horn antenna ø 40 mm/316L
C – horn antenna ø 48 mm/316L
D – horn antenna ø 75 mm/316L
J – horn antenna ø 95 mm/316L
E – horn antenna ø 95 mm/316L
F – plastic horn antenna ø 80 mm/PP/-40°C…+80°C
X – for separate horn antenna

Approval
GX – Surface, Dust, Zone 20, 20/21, 20/22, 21 ta, ta/tb, ta/tc, tb IIIC T* IP66
DK - Surface, Dust, Zone 20, 20/21, 20/22, 21 ta, ta/tb, ta/tc, tb IIIC T* IP66 + Surface, Gas, Zone 0/1, 1 Ex db IIC T6 Ga/Gb, Gb[1]

Optional version differentiation,
Without relevant for explosion protection

[1] The assessment for use in explosive gas atmospheres is not part of this test report.

Description
Reason for the supplement:
- Optional process connector
- Adjustment of model code

Description of Product
The microwave barrier type VEGAMIP MP*6* is used to measure a level limit in areas with combustible dust. It is based on radar and uses microwaves in GHz range. It can be installed in any Zone or partition wall.
The VEGAMIP consists of a transmitting and a receiving unit which are mounted separately. Each unit is built of a housing with electronic insert and connected antenna, extensions and rinsing connection are possible. The receiving unit VEGAMIP MPR62 consists of two mechanical and electrical separated components, connected via rated cable. Further there are different versions based on various antennas and electronic inserts.
The enclosure is separately certified (BVS 14 ATEX E 121 U).

Parameters
Electrical data
VEGAMIP MPT61(*).GX/DK****T***

Input
Supply voltage
(terminals 1, 2 in the terminal compartment)

	AC	20…253 V, 50/60 Hz
	DC	20…72 V
Power consumption	AC	1.8 VA
	DC	ca. 1.3 W

VEGAMIP MPR61/62(*).**********
VEGAMIP MPR61(*).GX/DK****R***
VEGAMIP MPR62(*).GX****R***
Input
Supply voltage
(terminals 1, 2 in the terminal compartment)

	AC	20…253 V, 50/60 Hz
	DC	20…72 V
Power consumption	AC	1.8 VA
	DC	ca. 1.3 W

Relay circuit (maximal data)
Contact set 1 (terminals 3, 4, 5)

	AC	253 V, 5 A
Contact set 2 (terminals 5, 7, 8)	DC	30 V, 4 A
	DC	125 V, 0.2 A

VEGAMIP MPR61(*).GX/DK****T***
VEGAMIP MPR62(*).GX****T***
Input
Supply voltage
(terminals 1, 2 in the terminal compartment)

	DC	20…55 V
Power consumption		< 1 W

Signal circuit (maximal data)
Terminals 4, 5 in the terminal compartment)

U_{LOAD} = DC 20…55 V
I_{LOAD} ≤ 400 mA

High frequency parameters
Transmitting-/emitting frequency K-Band ca. 24 GHz
Output radiating power (normal operation)

	P_{EIRP}	0.1 W
Max. output radiating power (2 faults)		
	P_{EIRP}	0.2 W

Thermal data
Permitted ambient temperature range
At the sensor (in zone 20 or 21)

VEGAMIP MPR/T6*(*).GX/DK****R/T***	-40°C…+130°C
VEGAMIP MPR/T6*(*).GX/DKA/F****R/T***	-40°C…+80°C
High temperature version	
VEGAMIP MPR/T6*(*).GX/DK****R/T***	-60°C…+250°C

Ceramics version

VEGAMIP MPR/T6*(*).GX/DK****R/T***	-170°C…+450°C

At the electronics enclosure (in zone 20, 21 or 22)

VEGAMIP MPR/T6*(*).GX/DK****R/T***	-40°C…+60°C

Max. surface temperature T
The max. surface temperature is the higher one of the following:

At the sensor (in Zone 20 or 21)	process temperature + 3K
At the electronics enclosure (in Zone 20, 21 or 22)	limited by thermos fuse to 102°C

Degrees of protection according to IEC/SANS 60529, IP66

Based on the following documentation: BVS 09 ATEX E 132 Supplement 5

2. INSTALLATION INSTRUCTIONS

It is the manufacturer's responsibility to supply installation instructions with each unit offered for sale as required by IEC/SANS 60079-0 Clause 30

3. SPECIAL CONDITIONS OF USE (X)

None

4. CONDITIONS OF CERTIFICATION

All production units must be covered by a QAN (Quality Assurance Notification), Product Mark Scheme or batch evaluation.

5. MARKING

The following (or similar) information have to be clearly and permanently marked on all units:

Supplier	: VEGA Grieshaber KG
Manufacturer	: VEGA Grieshaber KG
Equipment	: Microwave barrier
Model/Type	: VEGAMIP MPR61(*).******R/T*** & MPT61(*).******T*** & MPR62(*).******R/T*****
Serial No.	: ---
Ex Rating	: Ex ta IIIC T* Da Ex ta/tb IIIC T* Da/Db Ex ta/tc IIIC T* Da/Dc Ex tb IIIC T* Db IP66 *max. surface temperature see manual
IA Certificate No	: S-XPL/10.0120

Responsible Testing Officer:

D Maree
Technical Specialist

EXPLOLABS EXPLOSION PREVENTION SERVICES