



### IECEX TEST REPORT COVER

R Reference Number .....	DE/BVS/ExTR16.0014/03	
ExTR Free Reference Number .....	DE/BVS/16/2028/N3	A 20230169 / 343020600
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Approved by + signature (ExCB) .....	Dr.-Ing. Michael Wittler	
Date of issue .....	2023-04-03	
Ex Testing Laboratory (ExTL) .....	DEKRA Testing and Certification GmbH – Location Bochum	
Address .....	Dinnendahlstr. 9 44809 Bochum, Germany	
Ex Certification Body (ExCB) .....	DEKRA Testing and Certification GmbH – Certification Body	
Address .....	Dinnendahlstr. 9 44809 Bochum, Germany	
Applicant's name .....	holthausen elektronik GmbH	
Address .....	Wevelinghoven 38, 41334 Nettetal, Germany	
Standards associated with this ExTR package .....	IEC 60079-0:2017, Ed. 7.0 IEC 60079-11:2011, Ed. 6.0	
Clauses considered .....	All clauses applicable considered	
Test Report Form Number .....	ExTR Cover_7 (released 2018-02)	
Related Amendments, Corrigenda or ISHs .....	IEC 60079-0:2017; Ed. 7.0 ISH1:2019 + ISH2:2019, COR1:2020 IEC 60079-11:2011, Ed. 6.0 Corr. 1:2012 IEC 60079-11:2011, Ed. 6.0 ISH 1:2014 + ISH 2:2016 + ISH 3:2016 + ISH 4:2019 + ISH 5:2019 + ISH 6:2019	
Test item description .....	Transmitters	
Model/type reference .....	ESW-small Ex-i 10-**_E, ESW-small Ex-i 10-**_T_E, ESW-small Ex-i M 10-**_E, ESW-small Ex-i M 10-**_T_E, ESW-small Ex-i SIL 10-**_E, ESW-small Ex-i SIL 10-**_T_E, ESW-small Ex-i M-SIL 10-**_E, ESW-small Ex-i M-SIL 10-**_T_E	
Code (e.g. Ex __ II__ T__ ).....	Ex ia IIC T4 Gb	
Rating .....	See below	

ExTR Package Contents
Assembled ExTR documents and Additional reference material:
IECEX Test Report Cover
IECEX Test Report: IEC 60079-0, Edition 7
IECEX Test Report: IEC 60079-11, Edition 6

Manufacturer's name .....	holthausen elektronik GmbH
Address .....	Wevelinghoven 38, 41334 Nettetal, Germany
Trademark .....	
Certificate No. (optional) .....	IECEx BVS 16.0010 issue No: 3
QAR Reference No. (optional) .....	DE/TUR/QAR/12.0002/03
<b>Particulars: Test item vs. Test requirements</b>	
Classification of installation and use .....	: stationary
Ingress protection .....	: >IP20
Rated ambient temperature range (°C).....	: -40 °C... 50 °C (types without ending “_T”) -40 °C... 65 °C (types with ending “_T”)
<b>General remarks:</b>	
<p>The test results presented in this ExTR package relate only to the item or product tested.</p> <ul style="list-style-type: none"> <li>▪ "(See Attachment #)" refers to additional information appended to the ExTR package.</li> <li>▪ "(See appended table)" refers to a table appended to the ExTR package.</li> <li>▪ Throughout this ExTR package, a point is used as the decimal separator.</li> <li>▪ <i>Where the term "N/A" appears in any part of an ExTR package, it indicates that the associated issue was considered "Not applicable" to the involved evaluation.</i></li> <li>▪ <i>In accordance with IECEx 02, a Receiving ExCB may request a sample of the Ex equipment and copies of the documentation referred to in an ExTR Cover.</i></li> </ul> <p>The technical content of this ExTR package shall not be reproduced except in full without the written approval of the Issuing ExCB and ExTL.</p> <p>The transmitters have as well been certified under Directive 2014/34/EU under BVS 15 ATEX E 109 with test and assessment report BVS PP 15.2223 EU incl. supplement 3.</p>	

## General product information:

### Subject and Type

Transmitter types	ESW-small Ex-i 10-**_E,	ESW-small Ex-i 10-**_T_E,
	ESW-small Ex-i M 10-**_E,	ESW-small Ex-i M 10-**_T_E,
	ESW-small Ex-i SIL 10-**_E,	ESW-small Ex-i SIL 10-**_T_E,
	ESW-small Ex-i M-SIL 10-**_E,	ESW-small Ex-i M-SIL 10-**_T_E

The type characteristic "M" (for maritime) marks transmitters with sea water resistant enclosure for use on ships.

The type characteristic "\_T" marks transmitters with extended ambient temperature range.

The type ending "\_E" marks transmitters with the changed cable parameters.

In the complete type designation, the asterisks are replaced by numerals indicating different variations of the transmitter which differ in measuring range, frequency range and signal evaluation. These variants are not relevant for explosion protection.

### Description of the product

The transmitters type ESW-small Ex-i... are electronic vibration monitors. They are mounted to the monitored machine with a threaded bolt and transform the vibrations into a 4-20 mA-current signal.

The transmitters are passive intrinsically safe apparatus and are suitable for use in areas requiring EPL Gb. All circuits have level of protection IIC ia.

The transmitters have a stainless steel enclosure with removable lid.

The electronic is molded inside the enclosure. An indication-LED is protruding from the encapsulation; it is visible after unscrewing the lid of the enclosure.

The transmitters are supplied via a permanently connected cable (max. 25 m length).

All listed types have the electronic (Schematics, BOM and layout revision G) or (Schematics, BOM and layout revision H).

The transmitters differ only in the enclosure material resp. encapsulant:

Variants with type characteristic „M“: anodized stainless steel enclosure

Variants without type characteristic "M": stainless steel enclosure

Variants with type characteristic "\_T": encapsulant Wepuran VU 4452/61 HE or Wepuran VU 4452/71 HE

Variants without type characteristic "\_T": encapsulant Wepuran VU 4453/61 HE

Variants with type characteristic "SIL" do not differ from variants without this supplement.

### Listing of all components used referring to older standards

None

### Parameters

#### 1 Electrical data

Supply and signal circuit

permanently connected cable, wires white (+) and brown (-) or blue (+) and brown (-) or 1 (+) and 2 (-)

Maximum input voltage	$U_i$	DC	28.8	V
Maximum input current	$I_i$		125	mA
Maximum input power	$P_i$		1	W

The effective capacitance  $C_i$  and effective inductance  $L_i$  of the apparatus are composed of the (concentrated) capacitance and inductance of the apparatus and the parameters of the connected cable:

Effective concentrated capacitance		10	nF
Effective concentrated inductance		30	$\mu$ H
Cable capacitance		0.3	nF/m
Cable inductance		0.8	$\mu$ H/m

#### 2 Ambient temperature range

$T_a$

for types without ending „_T“:	-40 °C...50 °C
for types with ending „_T“:	-40 °C...65 °C

<b>Details of change (applicable only when revising an existing ExTR package):</b> <ul style="list-style-type: none"> <li>Due to other cable parameters, the type designation is changed.</li> </ul>	
<b>Copy of Marking Plate:</b> Exemplarily for type Ex-i M 10-25_E: <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px;">  <div style="display: flex; justify-content: space-between;"> <div> <b>holthausen</b>              elektronik GmbH           </div> <div>             wevelinghoven 38              D-41334 Nettetal              www.esw.eu           </div> </div> <p>Type:            ESW<sup>®</sup>small Transmitter Ex-i M 10-25_E            Ⓜ II 2G Ex ia IIC T4 Gb</p> <p>Ser.Nr.: <b>5422 – 0509</b>            BVS 15 ATEX E 109            IECEx BVS 16.0010            -40°C &lt; T<sub>a</sub> &lt; 50°C    Ⓒ 0035</p> </div>	Exemplarily for type Ex-i M 10-25_T_E: <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px;">  <div style="display: flex; justify-content: space-between;"> <div> <b>holthausen</b>              elektronik GmbH           </div> <div>             wevelinghoven 38              D-41334 Nettetal              www.esw.eu           </div> </div> <p>Type:            ESW<sup>®</sup>small Transmitter Ex-i M 10-25_T_E            Ⓜ II 2G Ex ia IIC T4 Gb</p> <p>Ser.Nr.: <b>5422 – 0509</b>            BVS 15 ATEX E 109            IECEx BVS 16.0010            -40°C &lt; T<sub>a</sub> &lt; 50°C    Ⓒ 0035</p> </div>
<b>Details regarding ‘trade agent’ / ‘local assembler’ application in accordance with OD 203:</b> N / A	
<b>Testing not fully performed by ExTL staff at the above ExTL address:</b> Supplement 1: The R <sub>th</sub> -values of the encapsulated components were determined on specification and under supervision of BVS at the applicant’s laboratory.	
<b>National differences considered as part of this evaluation:</b> N / A	
<b>“Specific Conditions of Use” / “Schedule of Limitations”:</b> N / A	
<b>Routine tests:</b> The manufacturer shall carry out the routine verifications and tests by IEC 60079-0:2017 necessary to ensure that the subject produced complies with the specification submitted to the testing station together with the prototype or sample. He shall also make any routine verifications and tests required by the respective IEC Standards.	
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Technical Documents (part of BVS PP 15.2223 EU / N3)			
Title:	Drawing No.:	Rev. Level:	Date (yyyy.mm.dd):
Description of changes			2023.03.16
Type plate			2023.03.16
user manual			2023.03.16

Material zu HE6096 Rev.H_E ESW-small-Transmitter (auf Anfrage M SIL) vollständig  ESW-small-Transmitter (auf Anfrage Ex-i M SIL) vollständig  5 pages		H_E	2023.03.16
<b>Technical Documents (part of BVS PP 15.2223 EU / N2)</b>			
<b>Title:</b>	<b>Drawing No.:</b>	<b>Rev. Level:</b>	<b>Date (yyyy.mm.dd):</b>
Änderungsbeschreibung			2022.03.10
Vollständige Schaltung, HE 6096_Rev_H		H	2019.03.26
Bestückung TOP-Seite, HE6096_Rev-H		H	2019.03.26
Bestückung BOTTOM-Seite, HE6096_Rev-H		H	2019.03.26
Layout TOP-Seite, HE6096_Rev-H		H	2019.03.26
Layout BOTTOM-Seite, HE6096_Rev-H		H	2019.03.26
<b>Parts lists</b>			
Material zu HE6096 Rev.H ESW-small-Transmitter (auf Anfrage M SIL) vollständig  ESW-small-Transmitter (auf Anfrage Ex-i M SIL) vollständig  5 pages		H	2022.02.22

Technical Documents (part of BVS PP 15.2223 EU / N1)			
Title:	Drawing No.:	Rev. Level:	Date (yyyy.mm.dd):
Beschreibung der Änderungen, 2 pages			2017.12.01
Vollständige Schaltung, HE 6096_Rev_G		G	2017.12.01
Bestückung TOP-Seite, HE6096_Rev-G		G	2017.12.01
Bestückung BOTTOM-Seite, HE6096_Rev-G		G	2017.12.01
Layout TOP-Seite, HE6096_Rev-G		G	2017.12.01
Layout BOTTOM-Seite, HE6096_Rev-G		G	2017.12.01
Parts lists			
Material zu HE6096 Rev.G mit Bauteilinformationen, ESW-small-Transmitter Ex-i, Ex-i-M, Ex-i-SIL, Ex-i M-SIL vollständige Bestückung, 8 pages			2017.12.01
Material zu HE6096 Rev.G mit Bauteilinformationen, ESW-small-Transmitter Ex-i_T, Ex-i-M_T, Ex-i-SIL_T, Ex-i M-SIL_T vollständige Bestückung, 8 pages			2017.12.01
Manuals			
ESW-small-Transmitter Ex-i **, 16 pages			2018.06.01
ESW-small-Transmitter Ex-i **, 16 Seiten			2018.06.01
Product datasheets			
ESW-small-Transmitter Ex-i..., 4 pages			2018.06.01
ESW-small-Transmitter Ex-i..._T, 4 pages			2018.06.01
Technical data			
ESW-small-Transmitter Ex-i 10-**, 2 pages			2018.06.11
ESW-small-Transmitter Ex-i 10-**_T, 2 pages			2018.06.11

Technical Documents (part of BVS PP 15.2223 EU / N1)			
Title:	Drawing No.:	Rev. Level:	Date (yyyy.mm.dd):
ESW-small-Transmitter Ex-i M 10-**, 2 pages			2018.06.11
ESW-small-Transmitter Ex-i M 10-**_T, 2 pages			2018.06.11
ESW-small-Transmitter Ex-i M-SIL 10-**, 2 pages			2018.06.11
ESW-small-Transmitter Ex-i M-SIL 10-**_T, 2 pages			2018.06.11
ESW-small-Transmitter Ex-i SIL 10-**, 2 pages			2018.06.11
ESW-small-Transmitter Ex-i SIL 10-**_T, 2 pages			2018.06.11

Technical Documents which remain valid (part of BVS PP 15.2223 EU)			
Title:	Drawing No.:	Rev. Level:	Date (yyyy.mm.dd):
Beschreibungsdokument, 8 pages			2015.10.27
Ergänzung zu Montageanweisung 4.4.9a des ESW small Transmitter Ex-i M 10-yy			2015.10.27