



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX ETL 17.0050** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 4 Issue 3 (2019-09-05)
Date of Issue: 2020-03-31 Issue 2 (2019-08-30)
Issue 1 (2018-01-12)
Issue 0 (2017-08-18)
Applicant: **Thermo Fisher Scientific**
27 Forge Parkway
Franklin, MA 02038
United States of America
Equipment: **Toxic Vapor Analyzer (Kit) *See General Product Information**
Optional accessory:
Type of Protection: **Intrinsic Safety 'ib', Flameproof 'db'**
Marking: Ex db ib IIC T3 Gb
-10C < Ta < +45C
IECEX ETL 17.0050

Approved for issue on behalf of the IECEx
Certification Body:

Kevin J. Wolf

Position:

Certification Officer

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
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Cortland NY 13045-2995
United States of America

intertek



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Manufacturer: **Thermo Fisher Scientific**
27 Forge Parkway
Franklin, MA 02038
United States of America

Additional manufacturing locations: **Thermo Fisher Scientific (Shanghai) Inst Co. Ltd**
T71-6, No. 211, Qinqiao Road
Jinqiao Export Processing Zone
Pudong
Shanghai 201206, China.
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[US/ETL/ExTR17.0003/00](#)
[US/ETL/ExTR17.0003/03](#)

[US/ETL/ExTR17.0003/01](#)

[US/ETL/ExTR17.0003/02](#)

Quality Assessment Reports:

[GB/ITS/QAR19.0001/00](#)

[US/ETL/QAR16.0006/02](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The product (TVA2020 Toxic Vapor Analyzer) is a complete Kit. This product is a vapor monitor for measuring compounds in air. The product (TVA2020 Toxic Vapor Analyzer (Kit)) comes in four main versions: 1. No Probe, 2. Sampling Probe, 3. Enhanced Probe, or 4. Combination of Sampling and Enhanced Probes. The complete Kit comes with three assemblies: 1. Analyzer with/without probe(s), 2. Battery Charger and 3. USB Barrier. The Analyzer is used in explosive atmospheres alone and the complete kit is used in non-explosive atmospheres only. The Analyzer is powered by Battery Pack. The Complete kit is powered by Mains and Computer.

The Analyzer is a portable gas detection equipment that consist of Battery Pack, Motherboard, Probe options (see above), with/without optional communication modules: 1. Bluetooth and/or 2. GPS or 3. None. The Analyzer uses either FID (Flame Ionization Detection) or PID (Photo Ionization Detection) or both options. The Analyzer includes refillable and replaceable hydrogen cylinder for use by the FID. For operation in Safe Area, the Analyzer is connected to Battery Charger for power and charging of Battery Pack and Computer via USB barrier for downloading data.

The Analyzer uses protection types Ex d (FID assembly) and Ex ib (Other parts of Analyzer). The Battery Charger and USB Barrier are accessories used with Analyzer in non-explosive atmosphere

see Annex for manufacturer documents, ratings, routine test required and IECEx Certified component utilized

SPECIFIC CONDITIONS OF USE: NO



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
See Annex

Annex:

[Annex IECEx ETL 17.0050 -Issue4.pdf](#)



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Annex No. 1		

Certificate changes associated with Issue 4:

1. Change revision of Drawing # 112245-00; From Rev D To Rev E:
This change is to add additional display module to existing components.

Routine Test: N/A

Manufacturer's documents

Drawings associated with Issue 6 of this certificate:

Title:	Drawing No.:	Rev. Level:	Date:
Layout, TVA2020 Motherboard	110362-00	C	10/19/2015
Assy, TVA2020 Motherboard	110363-00.pdf	C01	10/5/2018
BOM, TVA2020 Motherboard	110363-00(BOM).pdf	C01	6/25/2019
Assy, TVA2020 Motherboard w BT & GPS	110363-03	B	5/8/2019
Schematic, TVA2020 Motherboard	110364-00	C	9/10/2015
PUI Audio Indicator Spec Sheet	110501-00	A	8/24/2016
Layout, Bluetooth Board	110427-00	B	7/23/2014
Assy, Bluetooth Board	110428-00.pdf	B01	2/20/2019
BOM, Bluetooth Board	110428-00(BOM).pdf	B01	2/20/2019
Schematic, Bluetooth Board	110429-00	B	8/12/2014
Layout, GPS Board	112351-00	A01	1/10/2014
Assy, GPS Board	112352-00.pdf	A01	8/28/2013
BOM, GPS Board	112352-00(BOM).pdf	A01	8/28/2013
Schematic, GPS Board	112353-00	A01	8/28/2013
Schematic, TVA2020 Pre-Amp/FID	110405-00	C03	1/19/2018
Layout, TVA2020 Pre-Amp/FID	110527-00	C	10/3/2014
Assembly, TVA2020 Pre-Amp/FID	110528-00.pdf	C03	1/19/2018
BOM, TVA2020 Pre-Amp/FID	110528-00(BOM).pdf	C03	1/19/2018
Layout, Pre-Amp Barrier Board	116442-00	B	10/26/2016
BOM, Pre-Amp Barrier Board	116443-00.xls	B	10/26/2016
Assy, Pre-Amp Barrier Board	116443-00.pdf	B	10/26/2016
Schematic, Pre-Amp Barrier Board	116444-00	B	10/26/2016
Layout, TVA2020 Pump Board	110810-00	B	4/27/2017
Assy, TVA2020 Pump Board	110811-00.pdf	B	10/27/2016



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Title:	Drawing No.:	Rev. Level:	Date:
BOM, TVA2020 Pump Board	110811-00(BOM).pdf	B	4/27/2017
Schematics, TVA2020 Pump Board	110812-00	B	10/27/2016
Layout, Probe Head Board	111183-00	E	10/27/2016
Assy, Probe Head Board	111184-00.pdf	E01	2/20/2019
BOM, Probe Head Board	111184-00(BOM).pdf	E01	6/24/2019
Schematics, Probe Head Board	111185-00	E	3/3/2017
Layout, USB Barrier Board	113454-00	C	5/10/2016
Assy, USB Barrier Board	113455-00.pdf	C	5/10/2016
BOM, USB Barrier Board	113455-00(BOM).pdf	C	5/10/2016
Schematics, USB Barrier Board	113456-00	C	5/10/2016
Layout, TVA2020 Battery Charger Board	110927-00	E	6/29/2016
BOM, TVA2020 Battery Charger Board	110928-00(BOM).pdf	E	9/12/2016
Assy, TVA2020 Battery Charger Board	110928-00.pdf	E	6/29/2016
Schematics, TVA2020 Battery Charger Board	110929-00	E	6/29/2016
Label, Charger	114042-XX	D	1/22/2019
Layout, Battery Board	115672-00	D	1/30/2019
Assy, Battery Board	115673-00.pdf	C	11/2/2017
BOM, Battery Board	115673-00(BOM).pdf	C	11/2/2017
Schematics, Battery Board	115674-00	C	11/2/2017
Battery Datasheet, Li-Ion Cell 3.7V- 1.8Ah	112627-00	B	10/9/2015
Potted, Cell	112626-00	C	10/26/2016
Cable Assy, Red Wire	112635-00	B	10/20/2016
Epoxy Datasheet	112639-00	B	10/20/2016
Battery Pack, 6 cells and PCB	112654-00	B	11/11/2015
Epoxy, Potting, Amber	112656-00	B	10/20/2016
Battery	56-011811	E	11/4/2016
Control Document, Flamepath	112846-00	E	10/29/2015
Adapter, Molding	112963-00	E	6/7/2016
Bezel, Display Molding	112964-00	C	10/24/2015



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Title:	Drawing No.:	Rev. Level:	Date:
TVA2020, Casing Front	34-011690-0010	E	10/9/2015
TVA2020, Housing, Front	34-011690-0011	F	10/9/2015
TVA2020, Overmold, Front	34-011690-0012	C	10/9/2015
TVA2020, Casing, Rear	34-011690-0020	D	10/9/2015
TVA2020, Housing, Rear	34-011690-0021	C	10/9/2015
TVA2020, Overmold, Rear	34-011690-0022	C	10/12/2015
Ring, Nozzle Retention	34-011878	B	9/29/2015
Handle, Enhanced Probe, Left	34-011948	B	10/9/2015
Handle, Enhanced Probe, Right	34-011949	B	10/9/2015
Handle, Simple Probe, Right	34-011952	B	10/2/2015
Handle, Simple Probe, Left	34-011953	B	10/2/2015
Pump, TVA2020	111241-00	A	4/9/2012
Sensor, PID	111256-00	C	2/22/2017
*Display Module, LCD Board	112245-00	E	3/24/2020
Ampire, Display	P0152FV	E	Not Available
Interconnection Diagram	114302-XX	D	2/7/2019
Label Drawing, TVA2020	116005-XX	C	7/18/19
Instrument Manual	117061-00	n/a	7/16/2019
TVA2020 Interconnection Table	117506-00	A	8/15/2017
Product Safety Specifications	117576-00	B	7/10/2019
Keypad, TVA2020	117624-00	B	11/21/2018
Enhanced Probe Window (8 x 20)	117625-00	B	2/20/2019
Label, Barrier, TVA2020	117777-XX	B	1/23/2019
NDA Protected Schematics	117851-XX	A	3/22/2017
Assy, Enhanced Probe	56-011950-XXXX	E	11/4/2016
Assy, TVA2020	118641-XXXX	B	2/14/2019
Instrument Manual, China	119943-00	n /a	7/16/2019

*Note: An * is included before the title of documents that are new or revised.*