



(1) **TYPE EXAMINATION CERTIFICATE**

(2) Component Intended for use on/in an Equipment or Protective System for use in Potentially Explosive Atmospheres – **Directive 2014/34/EU**

(3) Type Examination Certificate Number:

SIQ 18 ATEX 043 U

Issue: 1



(4) Product: Power Supply, Types: TIB 080-112EX, TIB 080-124EX, TIB 080-148EX,
TIB 120-112EX, TIB 120-124EX, TIB 120-148EX,
TIB 240-124EX, TIB 240-148EX,
TIB 480-124EX and TIB 480-148EX

Note: Suffix "aaaaa" can be followed by type identification, "a" can be any alphanumeric, blank or dash.

(5) Manufacturer: Traco Electronic AG

(6) Address: Sihlbruggstrasse 111, 6340 Baar, Switzerland

(7) This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) SIQ Ljubljana certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive 2014/34/EU.

The examination and test results are recorded in the confidential test report TEx138/18.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2012 / A11 : 2013

EN 60079-7 : 2015

EN 60079-15 : 2010

(10) The sign "U" is placed after the certificate number. It indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

(11) This Type Examination Certificate relates only to the design and construction of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

II 3 G Ex ec nC IIC Gc

Certification body

Ljubljana, 22 June 2018

Igor Likar

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The Type Examination Certificate is valid only if signed. The certificate may be reproduced only in full and without changes. Any extracts and changes shall be approved by SIQ Ljubljana.

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(13)

SCHEDULE

(14) **Type Examination Certificate Number SIQ 18 ATEX 043 U, Issue: 1**

(15) Description of Product

Power supply, types TIB 080-112EX, TIB 080-124EX, TIB 080-148EX, TIB 120-112EX, TIB 120-124EX, TIB 120-148EX, TIB 240-124EX, TIB 240-148EX, TIB 480-124EX and TIB 480-148EX, is an Ex component intended for use in potentially explosive atmosphere. It is designed in type of explosion protection "ec", except incorporated relays are in type of explosion protection "nC". Enclosure of the apparatus is metallic with degree of protection IP20 and has a clamping device on the back side for DIN rail installation. For connection of the external circuits (input, output and signal) the apparatus is equipped with terminals. On the front side of the unit is potentiometer for adjustment of the output voltage.

Technical data

Electrical ratings:

Input:	100 V a.c. – 240 V a.c.
Output:	TIB 080-112EX: 12 V d.c., 6.7 A d.c. (80 W) TIB 080-124EX: 24 V d.c., 3.4 A d.c. (80 W) TIB 080-148EX: 48 V d.c., 1.7 A d.c. (80 W) TIB 120-112EX: 12 V d.c., 10 A d.c. (120 W) TIB 120-124EX: 24 V d.c., 5 A d.c. (120 W) TIB 120-148EX: 48 V d.c., 2.5 A d.c. (120 W) TIB 240-124EX: 24 V d.c., 10 A d.c. (240 W) TIB 240-148EX: 48 V d.c., 5 A d.c. (240 W) TIB 480-124EX: 24 V d.c., 20 A d.c. (480 W) TIB 480-148EX: 48 V d.c., 10 A d.c. (480 W)
Signal:	Relay's contact: max. 30 V a.c., 1 A

(16) Test Report

TE_x138/18 dated 22 June 2018.

(17) Schedule of Limitations

- Power supply shall be installed in appropriate IP54 enclosure according to EN 60079-0 and EN 60079-7.
- PE conductor must be connected to apparatus (input terminal).
- Do not operate voltage adjustment, unless area is known to be non-hazardous.
- Ambient temperature range at location of installation is specified from -40°C to +70°C. Following deratings must be considered:

All models, except TIB 480-148EX:

- linear derating of 2%/°C above +60°C,

Only TIB 480-148EX:

- linear derating of 1.4%/°C above +55°C for input voltage range of 100 V a.c. – 132 V a.c.
- linear derating of 2%/°C above +60°C for input voltage range of 132 V a.c. – 240 V a.c.



- Power supply is suitable for following temperature classes:

All models, except TIB 480-124EX:

➤ temperature class T4,

Only TIB 480-124EX:

➤ temperature class T3 for input voltage range of 100 V a.c. – 216 V a.c.

➤ temperature class T4 for input voltage of 240 V a.c. $\pm 10\%$.

(18) Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements has been assured by compliance with the requirements of the standards listed under item (9).

(19) Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
TIB 080-112EX			
*Circuit Diagram	CD-MB-080PSX182	2	21. 5. 2018
*Component Position Drawing	CPD-MB-080PSX182	1	21. 5. 2018
*Electrical Assembly Drawing	EAD-MB-080PSX182	2	21. 5. 2018
*PCB Specification	PCB-MB-080PSX182	C	21. 5. 2018
*Transformer Requirement Specification (TR1)	TRS-080PSX182.01	1	5. 6. 2018
*Label Specification	LB-080PSX182/EX.01	1	5. 6. 2018
*Top and bottom PCB Artwork	TIB 080-112EX	/	/
TIB 080-124EX			
*Circuit Diagram	CD-MB-080PSX184	4	12. 1. 2018
*Component Position Drawing	CPD-MB-080PSX184	3	12. 1. 2018
*Electrical Assembly Drawing	EAD-MB-080PSX184	5	12. 1. 2018
PCB Specification	PCB-MB-080PSX184	E	14. 2. 2018
*Transformer Requirement Specification (TR1)	TRS-080PSX184.01	2	12. 1. 2018
*Label Specification	LB-080PSX184/EX.01	1	5. 6. 2018
*Top and bottom PCB Artwork	TIB 080-124EX	/	/
TIB 080-148EX			
*Circuit Diagram	CD-MB-080PSX185	1	23. 2. 2018
*Component Position Drawing	CPD-MB-080PSX185	1	28. 2. 2018
*Electrical Assembly Drawing	EAD-MB-080PSX185	1	23. 2. 2018
*PCB Specification	PCB-MB-080PSX185	C	28. 2. 2018



Title:	Drawing No.:	Rev. Level:	Date:
*Transformer Requirement Specification (TR1)	TRS-080PSX185.01	0	10. 10. 2017
*Label Specification	LB-080PSX185/EX.01	1	5. 6. 2018
*Top and bottom PCB Artwork	TIB 080-148EX	/	/
Common for TIB 080-112EX, TIB 080-124EX and TIB 080-148EX			
*Production Procedure (L1)	PP-IN-080PSX184.01	5	14. 2. 2018
Production Procedure (L2)	PP-IN-080PSX184.02	2	20. 9. 2016
*TIB Installation Instruction	TIB 080	5	2018
Mechanical dimensions drawing	MDD-080PSX184.01	2	27. 2. 2017
Mechanical dimensions drawing	MDD-080PSX184.02	2	27. 2. 2017
Mechanical dimensions drawing	MDD-080PSX184.06	0	29. 9. 2015
TIB 120-112EX			
*Circuit Diagram	CD-MB-120PSX182	0	19. 2. 2018
*Component Position Drawing	CPD-MB-120PSX182	0	19. 2. 2018
*Electrical Assembly Drawing	EAD-MB-120PSX182	0	19. 2. 2018
*PCB Specification	PCB-MB-120PSX182	B	22. 2. 2018
*Transformer Requirement Specification (TR1)	TRS-120PSX182.01	0	15. 1. 2018
*Label Specification	LB-120PSX182/EX.01	0	9. 4. 2018
TIB 120-124EX			
*Circuit Diagram	CD-MB-120PSX184	3	8. 1. 2018
*Component Position Drawing	CPD-MB-120PSX184	3	8. 1. 2018
*Electrical Assembly Drawing	EAD-MB-120PSX184	5	8. 1. 2018
PCB Specification	PCB-MB-120PSX184	D	21. 12. 2017
*Top and bottom PCB Artwork	TIB 120-124EX	/	/
*Transformer Requirement Specification (TR1)	TRS-120PSX184.01	4	12. 1. 2018
*Label Specification	LB-120PSX184/EX.01	0	31. 10. 2017
TIB 120-148EX			
*Circuit Diagram	CD-MB-120PSX185	2	23. 2. 2018
*Component Position Drawing	CPD-MB-120PSX185	2	11. 6. 2018
*Electrical Assembly Drawing	EAD-MB-120PSX185	2	23. 2. 2018
*PCB Specification	PCB-MB-120PSX185	C	14. 5. 2018
*Top and bottom PCB artwork	TIB 120-148EX	/	/



Title:	Drawing No.:	Rev. Level:	Date:
*Transformer Requirement Specification (TR1)	TRS-120PSX185.01	2	24. 5. 2018
*Transformer Requirement Specification (TR2)	TRS-240PSX185.02	1	6. 12. 2017
*Label Specification	LB-120PSX185/EX.01	0	11. 4. 2018
Common for TIB 120-112EX, TIB 120-124EX and TIB 120-148EX			
Production Procedure (L3)	PP-IN-120PSX184.01	2	3. 10. 2016
*Production Procedure (L1)	PP-IN-120PSX184.02	3	14. 2. 2018
Production Procedure (L2)	PP-IN-120PSX184.03	3	12. 12. 2016
Production Procedure (L4)	PP-IN-250PSG184.05	0	31. 7. 2011
*TIB Installation Instruction	TIB 120	5	2018
Mechanical dimensions drawing	MDD-120PSX184.01	3	27. 2. 2017
Mechanical dimensions drawing	MDD-120PSX184.02	3	27. 2. 2017
Mechanical dimensions drawings	MDD-120PSX184.03	0	19.6.2015
Mechanical dimensions drawing (transparent foil)	MDD-240PSX184.05	1	21. 12. 2015
Mechanical dimensions drawing	MDD-120PSX184.06	0	19. 6. 2015
TIB 240-124EX			
*Circuit Diagram	CD-MB-240PSX184	5	8. 1. 2018
*Component Position Drawing	CPD-MB-240PSX184	4	8. 1. 2018
*Electrical Assembly Drawing	EAD-MB-240PSX184	6	8. 1. 2018
PCB Specification	PCB-MB-240PSX184	E	22. 12. 2017
*Top and bottom PCB artwork	TIB 240-124EX	/	/
*Transformer Requirement Specification (TR1)	TRS-240PSX184.01	5	4. 9. 2017
*Label Specification	LB-240PSX184/EX.01	2	31. 10. 2017
TIB 240-148EX			
*Circuit Diagram	CD-MB-240PSX185	2	23. 2. 2018
*Component Position Drawing	CPD-MB-240PSX185	1	22. 11. 2017
*Electrical Assembly Drawing	EAD-MB-240PSX185	2	23. 2. 2018
*PCB Specification	PCB-MB-240PSX185	B	22. 11. 2017
*Transformer Requirement Specification (TR3)	TRS-240PSX185.01	1	6. 12. 2017
*Transformer Requirement Specification (TR2)	TRS-240PSX185.02	0	1. 8. 2017
*Label Specification	LB-240PSX185/EX.01	0	11. 4. 2018



Title:	Drawing No.:	Rev. Level:	Date:
Common for TIB 240-124EX and TIB 240-148EX			
*Artwork: Top, Bottom	TIB 240-124 and TIB 240-148	/	/
Production Procedure (L1)	PP-IN-240PSX184.01	2	8. 7. 2016
*Production Procedure (L2)	PP-IN-240PSX184.02	4	14. 2. 2018
*Production Procedure (L3)	PP-IN-240PSX184.03	3	15. 8. 2017
Production Procedure (L4)	PP-IN-250PSG184.05	0	31. 7. 2011
*TIB Installation Instruction	TIB 240	5	2018
Mechanical dimensions drawing	MDD-240PSX184.01	1	27. 2. 2017
Mechanical dimensions drawing	MDD-240PSX184.02	1	27. 2. 2017
Mechanical dimensions drawing	MDD-240PSX184.03	0	15. 6. 2015
Mechanical dimensions drawing	MDD-240PSX184.04	0	15. 6. 2015
Mechanical dimensions drawing (transparent foil)	MDD-240PSX184.05	1	21. 12. 2015
Mechanical dimensions drawing	MDD-240PSX184.06	0	15. 6. 2015
*Mechanical dimensions drawing (insulation on clamping device)	MDD-240PSX184.08	5	15. 3. 2018
*Mechanical dimensions drawing	MAD-HS-240PSX184.01	2	8. 7. 2016
*Mechanical dimensions drawing	MAD-HS-240PSX184.02	2	8. 7. 2016
TIB 480-124EX			
*Circuit Diagram	CD-MB-480PSX184	7	8. 1. 2018
*Component Position Drawing	CPD-MB-480PSX184	4	19. 2. 2018
*Electrical Assembly Drawing	EAD-MB-480PSX184	9	17. 5. 2018
PCB Specification	PCB-MB-480PSX184	E	21. 12. 2017
*Top and Bottom Artwork	TIB 480-124EX	/	/
Transformer Requirement Specification (TR1)	TRS-480PSX184.01	1	19. 8. 2016
*Label Specification	LB-480PSX184/EX.01	0	31. 10. 2017
TIB 480-148EX			
*Circuit Diagram	CD-MB-480PSX185	1	23. 2. 2018
*Component Position Drawing	CPD-MB-480PSX185	0	13. 11. 2017
*Electrical Assembly Drawing	EAD-MB-480PSX185	2	15. 5. 2018
*PCB Specification	PCB-MB-480PSX185	A	7. 11. 2017
*Artwork: Top	TIB 480-148, 124	/	/
*Artwork: Bottom	TIB 480-148, 124	/	/



Title:	Drawing No.:	Rev. Level:	Date:
*Transformer Requirement Specification (TR1)	TRS-480PSX185.01	0	13. 11. 2017
*Label Specification	LB-480PSX185/EX.01	0	11. 4. 2018
Common for TIB 480-124EX and TIB 480-148EX			
*Production Procedure (L2, L3)	PP-IN-480PSX184.01	2	14. 2. 2018
Production Procedure (L4)	PP-IN-480PSX184.02	3	10. 10. 2016
Mechanical dimensions drawing (L5)	PP-IN-480PSX184.03	2	6. 10. 2016
Production Procedure (L1)	PP-IN-250PSG184.05	0	31. 7. 2011
*Transformer Requirement Specification (TR2)	TRS-480PSX184.03	3	17. 5. 2018
Production Procedure (TR3, TR4)	PP-TR-480PSX184.02	2	17. 1. 2017
*TIB Installation Instruction	TIB 480	5	2018
Mechanical dimensions drawing	MDD-480PSX184.01	4	27. 2. 2017
Mechanical dimensions drawing	MDD-480PSX184.02	1	5. 2. 2016
Mechanical dimensions drawing	MDD-480PSX184.03	0	24. 9. 2015
Mechanical dimensions drawing	MDD-480PSX184.04	0	24. 9. 2015
Mechanical dimensions drawing	MDD-480PSX184.06	3	19. 12. 2016
Mechanical dimensions drawing (transparent foil)	MDD-480PSX184.07	1	5. 2. 2016
*Mechanical dimensions drawing (insulation on clamping device)	MDD-240PSX184.08	5	15. 3. 2018
*Mechanical dimensions drawing	MAD-FP-480PSX184	5	17. 5. 2017
*Mechanical dimensions drawing	MAD-HS-480PSX184.01	0	3. 2. 2016
*Mechanical dimensions drawing	MAD-HS-480PSX184.02	0	3. 2. 2016
*Mechanical dimensions drawing	MAD-HS-480PSX184.03	0	3. 2. 2016
Common for all types			
*ATEX Information	ATEX-TIB	3	2018
Production Procedure, Application of Conformal Coating to PCB Assemblies	Conformal Coating of PCB Assemblies	1	24. 1. 2018
*Label Specification	LB-UL_APPROVAL.110	1	9. 5. 2018

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



(20) Consolidated Certificates

This certificate is a consolidated certificate and reflects the latest status of the certification, including the following:

- Issue 1: - Minimum service temperature was changed from -25°C to -40°C.
- Alternative relays were added.
- Six additional models of the power supply were added: TIB 080-112EX, TIB 080-148EX, TIB 120-112EX, TIB 120-148EX, TIB 240-148EX and TIB 480-148EX.