(1) # TYPE EXAMINATION CERTIFICATE

(2) Product Intended for use in Potentially Explosive Atmospheres – **Directive 2014/34/EU**

(3) Type Examination Certificate Number:

SIQ 14 ATEX 036 X **Issue: 3**

(4) Product: Power supply, types DRF240-24-1/HL-xyz and DRF240-24-1/HLIVS-xyz

(5) Manufacturer: TDK-Lambda UK Ltd

(6) Address: Kingsley Avenue, Ilfracombe, Devon, EX34 8ES, United Kingdom

(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 TEx035/23.

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

EN IEC 60079-0:2018 + AC:2020-02 **EN IEC 60079-7:2015 + A1:2018**

EN IEC 60079-15:2019

Where additional criteria beyond those given here have been used, they are listed at item (18) in the schedule to this certificate.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

(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 T4 Gc

Certification body Ljubljana, 15 March 2023

Bojan Pečavar

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(13) # SCHEDULE

(14) **Type Examination Certificate Number SIQ 14 ATEX 036 X, Issue: 3**

(15) Description of Product

Power supply, types DRF240-24-1/HL-xyz and DRF240-24-1/HLIVS-xyz, is an AC/DC converter and AC/DC or DC/DC converter, respectively. It is installed in metal enclosure with degree of ingress protection of IP20. Power supply is designed in type of protection Ex ec nC and is intended to be used in hazardous area in zone 2, gas group IIC and temperature class T4. Power supply has external terminals for connections and shall be installed in appropriate enclosure with degree of ingress protection of at least IP54 according to EN IEC 60079-0 and EN IEC 60079-7.

Technical data

Allowed ambient temperature is from -25°C to +70°C (1).

(1) For ambient temperature from +60°C to +70°C linear derating from 100% load at +60°C to 75% load at +70°C shall be considered.

Type key:

DRF240-24-1/HL-xyz and DRF240-24-1/HLIVS-xyz

(xyz can be alphanumeric characters or blank and is non explosion protection related information)

Electrical ratings:

- DRF240-24-1/HL-xyz

Input:	100 V – 240 V a.c., 50 Hz / 60 Hz, 2.7 A
Output:	24 V – 28 V d.c., 10 A – 8.6 A, 240 W

- DRF240-24-1/HLIVS-xyz

Input:	100 V – 240 V a.c., 50 Hz / 60 Hz, 2.7 A 108 V – 145 V d.c., 2.7 A
Output:	22.5 V – 25.5 V d.c., 10 A – 9.4 A, 240 W

(16) Test Report

TEx035/23 dated 15 March 2023.

(17) Specific Conditions of Use

- Power supply shall be installed in a suitable housing so that a degree of protection of at least IP54 according to EN IEC 60079-0 and EN IEC 60079-7 is achieved. This is assured with enclosure in type of protection Ex ec or Ex eb.
- The installation in the enclosure must be carried out in such a way that the following allowed ambient temperature range for the power supply is not exceeded during operation:
  - from -25°C to +70°C with derating of 2.5%/°C above +60°C.
- The metal parts of the power supply shall be earthed.
- Adjustment of the potentiometer is allowed only when explosive atmosphere is not present.
- The distances to other components or enclosure's wall shall be at least 5 mm (left, right), 40 mm (top) and 20 mm (bottom). If the adjacent device is a heat source, the distance to it shall be at least 15 mm.

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(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:
Development specification, MODEL: DRF-240-24-1	-	-	22. 1. 2013
* Drawing SCHEMATICS, DRF240-24-1/HL, TDK-Lambda	PA619-30-01/HL – A	A	30. 7. 2020
Drawing LAYOUT (COMP), SCB446_, TDK-Lambda	PA619-31-01/HL	-	26. 5. 2014
Drawing LAYOUT (SOLD), SCB446_, TDK-Lambda	PA619-31-02/HL	-	26. 5. 2014
Drawing PATTERN (COMP), SCB446, TDK-Lambda	PA619-31-03/HL, Page 1/7	-	26. 5. 2014
Drawing PATTERN (SOLD), SCB446, TDK-Lambda	PA619-31-03/HL, Page 2/7	-	26. 5. 2014
Drawing GENERAL SPECIFICATION, SCB423_, TDK-Lambda	PA619-31-05	B	8. 11. 2013
Drawing LAYOUT (COMP), SCB424_, TDK-Lambda	PA619-31-21	B	8. 11. 2013
Drawing LAYOUT (SOLD), SCB424_, TDK-Lambda	PA619-31-22	B	8. 11. 2013
Drawing PATTERN (COMP), SCB424B, TDK-Lambda	PA619-31-23, Page 1/7	B	8. 11. 2013
Drawing PATTERN (SOLD), SCB424B, TDK-Lambda	PA619-31-23, Page 2/7	B	8. 11. 2013
Drawing GENERAL SPECIFICATION, SCB424_, TDK-Lambda	PA619-31-25	B	8. 11. 2013
Drawing BASE 1, DRF240-24-1, TDK-Lambda	PA619-32-01	B	12. 8. 2014
Drawing COVER, DRF240-24-1, TDK-Lambda	PA619-32-02	C	12. 8. 2014
* Drawing HEATSINK 1, DRF240-24-1, TDK-Lambda	PA619-32-04 – D	D	27. 9. 2018
Drawing HEATSINK 2, DRF240-24-1, TDK-Lambda	PA619-32-05	-	4. 12. 2012

Title:	Drawing No.:	Rev. Level:	Date:
Drawing HEATSINK 3, DRF240-24-1, TDK-Lambda	PA619-32-06	-	4. 12. 2012
Drawing BASE 2, DRF240-24-1, TDK-Lambda	PA619-32-10	B	12. 8. 2014
Drawing FRONT SEAL, DRF240-24-1, TDK-Lambda	PA619-33-01	C	1. 9. 2014
Drawing BASE INSUL1, DRF240-24-1, TDK-Lambda	PA619-33-02	B	2. 6. 2014
Drawing BASE INSUL2, DRF240-24-1, TDK-Lambda	PA619-33-03	B	2. 6. 2014
* Drawing SIDE SEAL, DRF240-24-1/HL, TDK-Lambda	PA619-33-08/HL – D	D	8. 7. 2022
* Drawing SAFETY SEAL, DRF240-24-1/HL, TDK-Lambda	PA619-33-81/HL – B	B	27. 2. 2023
* Drawing PFC CHOKE SPECS, DRF240-24-1, TDK-Lambda	PA619-35-01 – B	B	29. 3. 2021
* Drawing TRANSFORMER SPECS, DRF240-24-1, TDK-Lambda	PA619-35-02 – C	C	29. 3. 2021
* Drawing AUX TRANSFORMER SPECS, DRF240-24-1, TDK-Lambda	PA619-35-04 – E	E	10. 2. 2023
* Drawing CM CHOKE SPEC, DRF240-24-1, TDK-Lambda	PA619-35-05 – C	C	22. 2. 2022
Drawing XMER OUTPUT BAR 24(1), DRF240-24-1, TDK-Lambda	PA619-36-03	-	14. 12. 2012
Drawing XMER OUTPUT BAR 24(2), DRF240-24-1, TDK-Lambda	PA619-36-04	-	14. 12. 2012
Drawing PRODUCTION DRAWING, DRF240-24-1/HL, TDK-Lambda	PA619-50-81/HL	-	27. 10. 2014
* DRF240 Series Instruction manual, TDK-Lambda	PA619-04-02G	G	27. 2. 2023
* Drawing SCHEMATICS, DRF240-24-1/HLIVS, TDK-Lambda	PA619-30-01/HLIVS - B	B	30. 7. 2020
Drawing LAYOUT (COMP), SCB473_, TDK-Lambda	PA619-31-01/HLIVS	A	23. 11. 2016
Drawing LAYOUT (SOLD), SCB473_, TDK-Lambda	PA619-31-02/HLIVS	-	19. 9. 2016
Drawing PATTERN (COMP), SCB473A, TDK-Lambda	PA619-31-03/HLIVS, Page 1/7	A	23. 11. 2016
Drawing PATTERN (SOLD), SCB473A, TDK-Lambda	PA619-31-03/HLIVS, Page 2/7	A	23. 11. 2016

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Title:	Drawing No.:	Rev. Level:	Date:
Drawing LAYOUT (COMP), SCB477_, TDK-Lambda	PA619-31-21/HLIVS	-	19. 9. 2016
Drawing LAYOUT (SOLD), SCB477_, TDK-Lambda	PA619-31-22/HLIVS	-	19. 9. 2016
Drawing PATTERN (COMP), SCB477, TDK-Lambda	PA619-31-23/HLIVS, Page 1/7	-	19. 9. 2016
Drawing PATTERN (SOLD), SCB477, TDK-Lambda	PA619-31-23/HLIVS, Page 2/7	-	19. 9. 2016
* Drawing SIDE SEAL, DRF240-24-1/HLIVS, TDK-Lambda	PA619-33-08/HLIVS – D	D	13. 7. 2022
* Drawing SAFETY SEAL, DRF240-24-1/HLIVS, TDK-Lambda	PA619-33-81/HLIVS – B	B	27. 2. 2023
* DRF240-24-1/HLIVS Instruction manual, TDK-Lambda	PA619-04-02/HLIVS-D	D	27. 2. 2023

*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:

- Original Type Examination Certificate No. SIQ 14 ATEX 036 X.
- Issue 1:

  Model DRF240-24-1/HL: Marking label was modified and some design details were modified.

  Model DRF240-24-1/HLIVS-xyz was added. Model DRF240-24-1/HLIVS-xyz has additional option for supply with d.c. input voltage and output overvoltage protection.

  Equipment was also reassessed according to EN 60079-0:2012 / A11:2013 and Directive 2014/34/EU.
- Issue 2: Model DRF240-24-1/HLIVS-xyz was changed. Some electronic components were replaced and PCB was modified.
- Issue 3: New editions of standards were considered. Type of explosion protection was changed from "nA nC" to "ec nC" according to new editions of the standards. Some electronic components were changed or modified.

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