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EU DECLARATION OF CONFORMITY

QM, QS, KQM and KQS Series

We, TDK-Lambda UK Limited, of Kingsley Avenue, Ilfracombe, Devon, EX34 8ES declare under our sole responsibility that the TDK-Lambda QM, QS, KQM and KQS series of power supplies, as detailed on the attached products covered sheets, complies with the provisions of the following European Directives and is eligible to bear the CE mark:

Low Voltage Directive	2014/35/EU
EMC Directive	2014/30/EU
RoHS 2 Directive	2011/65/EU

Assurance of conformance of the described product with the provisions of the stated EC Directive is given through compliance to the following standards:

Electrical Safety (LVD)	EN60950-1:2006 + A2:2013
Electromagnetic Compatibility (EMC)	EN61000-6-3:2007 + A1:2011 EN61000-6-2:2005 EN61204-3:2001 EN55024:2010 EN55032:2015

Our European Representative in the EU is TDK-Lambda UK Limited, located at Kingsley Avenue, Ilfracombe, Devon, EX34 8ES, UK.

Note: The EMC performance of a component power supply will be affected by the final installation, compliance to the stated EMC standards and conformance to the EMC Directive must be confirmed after installation by the final equipment manufacturer.

For guidance with respect to test conditions please visit our website at https://emea.tdk-lambda.com/EMC_Guidance or contact your local TDK-Lambda sales office.

Name of Authorized Signatory	Martin Southam
Signature of Authorized Signatory	
Position of Authorized Signatory	Marketing Director, TDK-Lambda EMEA
Date	3 rd September 2018
Date when first CE marked	15 th September 2016
Place where signed	Ilfracombe, Devon, England

QM, QS, KQM and KQS SERIES PRODUCTS COVERED

QMshabcdefghklm for modular configurations

Where	s	=	5 for QM5 models 7 for QM7 models 8 for QM8 models
	h	=	Hold Up Option Blank for none fitted H for extended hold up
	a	=	Cooling: C for customer air (not applicable to QM5 IEC Models) F for variable speed forward air fan R for variable speed, reverse air
	b	=	Input connector: Blank or S for screw F for faston I for IEC connector (QM5 only)
	c	=	Input fuse: D for dual AC fuses E for single AC fuse in the Live line F for dual DC fuses (QM5 only) G for single DC fuse in the +ve input line (QM5 only)
	d	=	Leakage option: S for 3.5mA L for 300A R for 150A T for 60A
	e	=	Primary option: blank for none fitted E for global enable T for global inhibit P for PMBus Q for PMBus with individual module enable (KQM700HJx model only, where x can be any letter for non-safety related differences)
	f	=	Standby supply: Blank for none fitted 5 for 5V/2A (Primary option Q or P only) 5H for 5V/2A (Primary option E or T only) 5L for 5V/0.25A (Primary option E or T only) 12 for 12V/1A (Primary option Q or P only) 12H for 12V/1A (Primary option E or T only) 13.5H for 13.5V/0.6A (KQM5001V-x model only)
	g	=	Blank if Primary option P or Q not fitted H for Input Power Present C for Control Pin Active High D for Control Pin Active Low F for PMBus and Control Pin Active High G for PMBus and Control Pin Active Low J for Individual output control, followed by two hexadecimal numbers specifying which modules are on/off (for Q type PMBus option only)
	h	=	Blank or C for Industrial leakage, output Y capacitors up to 100nF

May be followed by:

Single Output modules

vMcde

Where	v	=	output voltage
	M	=	module name (SB or SC)
	c	=	'S' for screw terminal output, 'F' for faston
	d	=	'N' for no signals, omit for standard signals
	e	=	C for Industrial Leakage, omit for standard leakage (60950 only)

Optionally followed by '-Dxxx' where xxx is the number of mV of droop

Dual output modules

v1/v2DHcde

Where	v1	=	CH1 output voltage
	v2	=	CH2 output voltage
	DH	=	module name (DH)
	c	=	'S' for screw terminal output, 'F' for faston
	d	=	'N' for no signals, omit for standard signals
	e	=	C for Industrial Leakage, omit for standard leakage (60950 only)

v1/v2DMcde

Where	v1	=	CH1 output voltage
	v2	=	CH2 output voltage
	DM	=	module name (DM)
	c	=	'S' for screw terminal output, 'F' for faston
	d	=	'N' for no signals, omit for standard signals
	e	=	C for Industrial Leakage, omit for standard leakage (60950 only)

Blanking plates

B/S

Where	B/S	=	Blanking plate
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Parallel combinations

vZxcde

Where	v	=	output voltage
	Z	=	Paralleled output module comprising SB or SC modules
	x	=	Number of slots. See table below.
	c	=	'S' for screw terminal output, 'F' for faston
	d	=	'N' for no signals, omit for standard signals
	e	=	C for Industrial Leakage, omit for standard leakage (60950 only)

Optionally followed by '-Dxxx' where xxx is the number of mV of droop

Series connected modules

vYxcde

Where	v	=	output voltage
	Y	=	Series output module comprising SB, SC or DH modules
	x	=	Number of slots. See tables below
	c	=	'S' for screw terminal output, 'F' for faston
	d	=	'N' for no signals, omit for standard signals
	e	=	C for Industrial Leakage, omit for standard leakage (60950 only)

Optionally followed by '-Dxxx' where xxx is the number of mV of droop

Series connected Paralleled modules

vHxcde

Where	v	=	output voltage
	H	=	Series connected parallel SB and/or SC modules
	x	=	Number of slots. See tables below
	c	=	'S' for screw terminal output, 'F' for faston
	d	=	'N' for no signals, omit for standard signals
	e	=	C for Industrial Leakage, omit for standard leakage (60950 only)

Optionally followed by '-Dxxx' where xxx is the number of mV of droop

Combined DM modules - seriated Channel 1 only

vMxcde

Where	v	=	output voltage
	M	=	Series CH1 output comprising DM modules
	x	=	Number of slots. See tables below
	c	=	'S' for screw terminal output, 'F' for faston
	d	=	'N' for no signals, omit for standard signals
	e	=	C for Industrial Leakage, omit for standard leakage (60950 only)

Optionally followed by '-Dxxx' where xxx is the number of mV of droop

Unit options

klm

Where	klm	=	Blank for standard output settings, may be three numbers from 0 to 9 (Preceded by -) which denotes various output voltage/current settings within the specified ranges of each output for a particular unit. (May define non-safety related parameters/features, e.g reduced primary current limit, reduced OVP)
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QS[Number of available slots][Hold Up Option]-[Power]-[Voltage][Output Terminal][Standby/Signals][Unit Options]-
[non safety related]

Number of available slots = 5 or 7

Hold Up Option = Blank for none fitted, H for Extended Hold Up

Power (max) = 550, 600, 1080 or 1200 from QS Output Parameters table below

Voltage = Output Voltage from the Vout range in the QS Output Parameters table below

Output Terminal = Blank for Screw terminal, F for Faston terminal

Standby/Signals = Blank or -E5H, -E5L, -T5H, -T5L, -E12H, -T12H, -P5H or -P12H

Where: E = Enable, T = Inhibit and P = PMBus
5H is 5V/2A, 5L is 5V/0.25A and 12H is 12V/1A

Followed by: (P option only)

H for Input Power Present
C for Control Pin Active High
D for Control Pin Active Low
F for PMBus and Control Pin Active High
G for PMBus and Control Pin Active Low

Unit Options	=	Blank for defaults or all of -[cooling][input connector][input fuse][leakage option]
Where [cooling] C for Customer air	=	F for Variable speed, forward air fan (default), R for Variable speed, reverse air fan,
[Input Connector]	=	S for screw (default), F for Faston, I for IEC
[Input Fuse]	=	D for dual AC fuses (default), E for single AC fuse in the live line F for dual DC fuses, G for single DC fuse in the +ve line (QM5 only)
[Leakage Option]	=	S for 3.5mA (60950 Only), L for 300 A (default), R for 150 A, T for 60 A
[Non-safety related]	=	optional - followed by any number of characters indicating non-safety

QS Output Parameters

Model	Note	Power (max)	Vout (range)	Current (max)	Hazardous Energy	Modules used
QS5	6	550	5-5.5V	110A	Yes	1 x ZF Module
-	-	600	12-13.2V	50A	Yes	1 x SC Module
-	-	600	24-26.4V	25A	Yes	1 x SC Module
-	-	600	30-33V	20A	Yes	1 x YC Module
-	-	600	48-52.8V	12.5A	Yes	1 x SC Module
-	-	600	56-61.6V	10.7A	Yes	1 x YC Module
-	-	600	95-105.6V	6.25A	Yes	1 x YC Module
-	-	1080	12-12.8V	90A	Yes	1 x ZF Module
-	-	1200	24-26.4V	50A	Yes	1 x YF Module
-	-	1200	48-52.8V	25A	Yes	1 x YF Module
QS7	-	1080	12-12.8V	90A	Yes	1 x ZF Module
-	-	1200	24-26.4V	50A	Yes	1 x YF Module
-	-	1200	48-52.8V	25A	Yes	1 x YF Module
-	-	1200	96-105.6V	12.5A	Yes	1 x YF Module

Parallel and Series combinations Tables

Series connection number of slots.

Qty of modules	SB		SC		DH	
	Name	Slots	Name	Slots	Name	Slots
1	SB	1	SC	2	YB	1
2	YC	2	YF	4	YP	2
3	YD	3	YM	6	YQ	3
4	YG	4	YN	8	YR	4
5	YH	5	-	-	YS	5
6	YJ	6	-	-	YT	6
7	YK	7	-	-	YV	7
8	YL	8	-	-	YW	8

Limitations of use:

1. Output voltage is the combined seriated modules voltage.
2. Module limitations apply to seriated modules.

Series connection of parallel connected modules

Module	Qty	Slots	Name
ZC	2	4	HC
ZD	2	6	HD
ZF	2	8	HF
ZT	2	6	HT
ZV	2	8	HV
ZC	3	6	HW
ZC	4	8	HX

Limitations of use:

1. Output voltage is the combined seriated modules voltage.
2. Module limitations apply to seriated/parallel modules.

Parallel connection number of slots

Number of modules in parallel

slots	SB	SC	Name
2	2	0	ZC
3	1	1	ZD
4	0	2	ZF
6	0	3	ZH
3	3	0	ZT
4	4	0	ZV

See ratings in Module output ratings table below

DH outputs in series but split to create extra outputs.

Qty of modules Split after Name
 output
 (first output
 is 1)

2	1	CB
2	3	CD
3	1	FB
3	3	FD
3	5	FG
4	1	GB
4	3	GD
4	5	GG
4	7	GJ
5	1	JB
5	3	JD
5	5	JG
5	7	JJ
5	9	JL
6	1	KB
6	3	KD
6	5	KG
6	7	KJ
6	9	KL
6	11	KN
7	1	LB
7	3	LD
7	5	LG
7	7	LJ
7	9	LL
7	11	LN
7	13	LQ
8	1	MB
8	3	MD
8	5	MG
8	7	MJ
8	9	ML
8	11	MN
8	13	MQ
8	15	MS

Combined DM modules - seriated Channel 1 only.

Number of modules	Number of outputs	Nomenclature
2	3	v1/v2/v3MC
3	4	v1/v2/v3/v4MD
4	5	v1/v2/v3/v4/v5MF
5	6	v1/v2/v3/v4/v5/v6MG
6	7	v1/v2/v3/v4/v5/v6/v7MH
7	8	v1/v2/v3/v4/v5/v6/v7/v8MJ
8	9	v1/v2/v3/v4/v5/v6/v7/v8/v9MK

Input Parameters

QM5

input voltage nom.	100 - 240Vac, 144 - 318Vdc (200 - 240Vac, 239 - 318Vdc)*
Input voltage range	90 - 264Vac, 130 - 350Vdc (180 - 264Vac, 215 - 350Vdc)*
Input frequency range	47 - 440Hz
Maximum input current	11Arms or 7Adc (9Arms or 7Adc for 1200W model)

* Input for 1200W models.

Maximum ambient 70°C, (65°C for option I) total output power and module output power de-rated by 2.5% per °C above 50°C

QM7

input voltage nom.	100 - 240Vac (166.7 - 240Vac)*
Input voltage range	90 - 264Vac (150 - 264Vac)*
Input frequency range	47 - 440Hz
Maximum input current	19Arms (14Arms for 1500W model)

* Input for 1500W models.

Maximum ambient 70°C, total output power and module output power de-rated by 2.5% per °C above 50°C

QM8

input voltage nom.	100 - 240Vac (166.7 - 240Vac)*
Input voltage range	90 - 264Vac (150 - 264Vac)*
Input frequency range	47 - 440Hz
Maximum input current	19Arms (14Arms for 1500W model)

* Input for 1500W models.

Maximum ambient 70°C, total output power and module output power de-rated by 2.5% per 2°C above 50°C

QM5, QM7 and QM8 Output parameters

Module output ratings table.

Module	Note	Number of slots	Output Channel	Vout nom	Adjustment range	Output Current	Output Power	Hazardous Energy
DM	5,8	1	CH1	12	11.9 to 16.1	10	120	Yes
DM	2	1	CH1	17	16 to 21.6	7.5	120	Yes
DM	4,5	1	CH1	24	20.8 to 28.2	5	120	Yes
DM	-	1	CH2	3.3	2.8 to 3.8	10	33	No
DM	-	1	CH2	5	4.25 to 5.75	10	50	No
DM	-	1	CH2	8	7 to 9.5	10	95	No
DM	3,8	1	CH2	14	11.9 to 16.1	8.3	100	No
DM	3	1	CH2	24	23.5 to 24.5	4.16	100	No
DH	1	1	CH1	12	10.2 to 13.8	10	120	Yes
DH	1	1	CH1	15	12.75 to 17.25	8	120	Yes
DH	1	1	CH1	24	20.4 to 27.6	5	120	Yes
DH	1	1	CH1	27	23 to 31	4.4	120	Yes
DH	2	1	CH2	12	10.2 to 13.8	10	120	Yes
DH	2	1	CH2	15	12.75 to 17.25	8	120	Yes
DH	2	1	CH2	24	20.4 to 27.6	5	120	Yes
DH	2	1	CH2	27	23 to 31	4.4	120	Yes
SB	-	1	CH1	3.3	3.3 to 3.63	37	122	No
SB	7	1	CH1	3.4	3.2 to 3.6	37	126	No

SB	-	1	CH1	5	5 to 5.5	30	150	No
SB	-	1	CH1	8.1	8 to 8.8	25	200	Yes
SB	-	1	CH1	12	12 to 13.2	25	300	Yes
SB	-	1	CH1	15	15 to 16.5	20	300	Yes
SB	-	1	CH1	18	18 to 19.8	16.7	300	Yes
SB	-	1	CH1	20	20 to 22	15	300	Yes
SB	-	1	CH1	24	24 to 26.4	12.5	300	Yes
SB	-	1	CH1	28	28 to 30.8	10.7	300	Yes
SB	-	1	CH1	48	48 to 52.8	6.25	300	Yes
SC	6	2	CH1	5	5 to 5.5	60	300	Yes
SC	-	2	CH1	12	12 to 13.2	50	600	Yes
SC	-	2	CH1	17	17 to 18.7	35.29	600	Yes
SC	-	2	CH1	24	24 to 26.4	25	600	Yes
SC	-	2	CH1	30	30 to 33	20	600	Yes
SC	-	2	CH1	48	48 to 52.8	12.5	600	Yes
ZC	-	2	CH1	15	15 to 16	36	540	Yes
ZC	-	2	CH1	18	18 to 19.2	30	540	Yes
ZC	-	2	CH1	28	28 to 30	19.3	540	Yes
ZD	-	3	CH1	5	5 to 5.3	80	400	Yes
ZD	-	3	CH1	12	12 to 12.8	65	780	Yes
ZD	-	3	CH1	24	24 to 25.6	30	720	Yes
ZD	-	3	CH1	48	48 to 51.2	15	720	Yes
ZF	6	4	CH1	5	5 to 5.3	110	550	Yes
ZF	-	4	CH1	12	12 to 12.8	90	1080	Yes
ZF	9	4	CH1	17	17 to 18.19	63.5	1080	Yes
ZH	10	6	CH1	24	24 to 25.6	62.4	1200	Yes
ZT	-	3	CH1	15	15 to 16	50	750	Yes
ZV	-	4	CH1	15	15 to 16	66.4	996	Yes

Note 1: CH1 limited to 80W when CH2 at 120W. Maximum of 200W across module.

Note 2: CH2 Limited to 80W when CH1 at 120W. Maximum of 200W across module.

Note 3: CH2 has a maximum of 100W. Maximum of 200W across the module.

Note 4: CH1 (24V) has a reduced adjustment range when CH2 is 24V. Reduced adjustment range is 21.6V to 28.8V.

Note 5: CH1 limited to 100W when CH2 at 100W. Maximum of 200W across module. Achievable if the ambient temperature is reduced to 40C.

Note 6: Please see Further De-ratings Table below

Note 7: KQM5001V-x model only

Note 8: 12/12DM Module limited to 180W in slot 2 or 45°C ambient. (QM8 only)

Note 9: 67A for 10 seconds

Note 10: 1500W at high-line

Further De-ratings Table

Converter Module		40°C Ambient	45°C Ambient	50°C Ambient	Global Option fitted	Comments (a p plicable to 50C ambient only)
QM5*	SC	60A	-	50A	N/A	-
-	YF	60A	-	50A	N/A	-
-	ZF	110A	-	90A	N/A	-
QM8	SC	-	60A	50A	Yes	Fitted in slots 1+2
-	SC	-	60A	60A	No	Fitted in slots 1+2
-	SC	-	60A	55A	No	Fitted in slots 3+4
-	SC	-	60A	60A	Yes	Fitted in slots 3+4
-	SC	-	60A	55A	N/A	Fitted in slots 7+8
-	YF,YM & YN	-	60A	55A	No	Limited by SC Module in slots 1+2
-	YF,YM & YN	-	60A	50A	Yes	Limited by SC Module in slots 1+2
-	HF	-	110A	90A	Yes	-
-	ZF	-	110A	90A	Yes	Fitted in slots 1 to 4
-	ZF	-	110A	100A	Yes	Fitted in slots 3 to 8
QS5*						

Cooling options QM5/QS5

Cooling option	Input voltage (Vac nom)	Output power (W)	Ambient °C
F (Forward air, variable speed)	100-240*	700	50
	200-240**	1200	50
C (Customer air***) ***not applicable to IEC version	100-240*	700	50
	200-240**	1200	50
R (Reverse air, variable speed fan)	100-240*	700	35
	200-240**	1200	30

*144 - 318Vdc nom.

**239 - 318Vdc nom.

Cooling options QM7/QS7

Cooling option	Input voltage (Vnom)	Output power (W)	Ambient (°C)
F (Forward air, variable speed)	100-240	1200	50
	166.7-240	1500	50
C (Customer air)	100-240	1200	50
	166.7-240	1500	50
R (Reverse air, variable speed fan)	100-240	1200	40

Cooling options QM8

Cooling option	Input voltage (Vnom)	Output power (W)	Ambient (°C)
F (Forward air, variable speed)	100-240	1200	50
	166.7-240	1500	50
C (Customer air)	100-240	1200	50
	166.7-240	1500	50
R (Reverse air, variable speed fan)	100-240	1000	45

Non-standard models (as standard models except where stated below):

KQM5001V-x (where x may be any letter for non-safety differences)

The KQM5001V-x is a non-standard QM5 model:

QM5CSDLE13.5H 3.4SBS 12.2SBS 5.2SBS-D100 5.2SCS-D100

Input rating: 47 - 63Hz, 12Arms max

Max output power: 815W

Max ambient 50°C

Customer air

KQM700HJx (where x may be any letter for non-safety differences)

The KQM700HJx is 7 slot non-standard QM7 model:

NS-TLA/QM7FSDLQ5J3E B/S 24SBS 24SBS 24SBS 12SBS B/S

This model has an option Q PMBus fitted

KQM700NNx (where x may be any letter) is a non-standard QM7 model:

NS-TLA/QM7FSDR 48YFS B/S B/S B/S

With standard module output and the following peak output:

Max frequency (Hz)	750
Output Voltage (Vnom)	48
Pulse duration (ms)	0.15 to 1
Max Duty Cycle %	60
Peak Current (A)	35