[1] # TYPE EXAMINATION CERTIFICATE

[2] **Component intended for use on/in an Equipment or Protective System Potentially Explosive Atmospheres Directive 2014/34/EU**

[3] Type Examination Certificate Number: **DEMKO 14 ATEX 1393U Rev. 4**

[4] Component: **Reed Switches**

[5] Manufacturer: **Littelfuse Inc.**

[6] Address: **8755 W Higgins Rd, Suite 500, Chicago, IL 60631 USA**

[7] This Component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] UL International Demko A/S 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 Directive 2014/34/EU of 26 February 2014.

The examination and test results are recorded in confidential report number: **4790823194.2.1**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN IEC 60079-15:2019**

except in respect of those requirements listed at item 18 of the Schedule.

[10] The sign "U" placed behind the certificate number indicates that this certificate should not be confused with certificates issued for equipment or protective systems. This partial certification may be used as a basis for certification of an equipment or protective systems. “Schedule of Limitations” is listed under item 17 of this certificate.

[11] This Type Examination Certificate relates only to the technical design of the specified product and not to specific items of component subsequently manufactured.

[12] The marking of the component shall include the following:

II 3 G Ex nC IIC Gc

Certification Manager
Thomas Wilson

This is to certify that the sample(s) of the Component described herein (“Certified Component”) has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the component sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the component. The Manufacturer are solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL’s prior written approval.

Date of issue: 2015-03-16
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Certification Body UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
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Schedule
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[15] Description of Component:
The below components are hermetically sealed magnetically operated reed switches that are suitable for use in industrial hazardous location applications.

DRR-129	FLEX-14	HA15-2	MACD-14	MATE-12
MASM-14x	MDCG-4	MDRR-DT	MDSM-4x	MDSM-10x
MDSR-7	MDSR-10	MISM-3V1x	MITI-3V1	MISM-7x
MLRR-3	MLRR-4	MLSM-3x	MLSM-4x	MRPR-3
59165	59166	59170	59045-1	59050-1x
MARR-5	MDSM-DTx	MITI-7	MRPR-8	59050-2x
DRS-50	MVSR-20	DRS-DTH	MRPR-20	59020x
59021x	59050-3x	59001x	59155x	59156x
59177x				

The “x” in the nomenclature can be either B or R and it indicates packaging type. B is for bulk packaging while R is tape and reel.

All models may be followed by additional alphanumeric suffixes.

These reed switches can be single pole, single throw or single pole, double throw type; glass or overmolded glass; axial leads, radial leads or crimped axial leads for surface mounting as shown in the below table:

Part Number	Switch Type	Package	Terminals
DRR-129	SPST-NO	Glass	Axial Leads
DRS-50	SPST-NO	Glass	Axial Leads
FLEX-14	SPST-NO	Glass	Axial Leads
HA15-2	SPST-NO	Glass	Axial Leads
MACD-14	SPST-NO	Glass	Axial Leads
MATE-12	SPST-NO	Glass	Axial Leads
MARR-5	SPST-NO	Glass	Axial Leads
MVSR-20	SPST-NO	Glass	Axial Leads
MASM-14x	SPST-NO	Glass	Crimped Axial Leads – Surface Mount
MDCG-4	SPST-NO	Glass	Axial Leads
MDRR-DT	SPDT-CO	Glass	Axial Leads
MDSM-4x	SPST-NO	Glass	Crimped Axial Leads – Surface Mount
MDSM-10x	SPST-NO	Glass	Crimped Axial Leads – Surface Mount
MDSM-DTx	SPDT-CO	Glass	Crimped Axial Leads – Surface Mount
MDSR-7	SPST-NO	Glass	Axial Leads
MDSR-10	SPST-NO	Glass	Axial Leads
MISM-3V1x	SPST-NO	Glass	Crimped Axial Leads – Surface Mount
MITI-3V1	SPST-NO	Glass	Axial Leads
MISM-7x	SPST-NO	Glass	Crimped Axial Leads – Surface Mount
MITI-7	SPST-NO	Glass	Axial Leads
MLRR-3	SPST-NO	Glass	Axial Leads
MLRR-4	SPST-NO	Glass	Axial Leads
MLSM-3x	SPST-NO	Glass	Crimped Axial Leads – Surface Mount
MLSM-4x	SPST-NO	Glass	Crimped Axial Leads – Surface Mount
MRPR-3	SPST-NO	Glass	Axial Leads
MRPR-8	SPST-NO	Glass	Axial Leads
MRPR-20	SPST-NO	Glass	Axial Leads
DRS-DTH	SPDT-CO	Glass	Axial Leads
59165	SPST-NO	Overmolded	Axial Leads and SMD
59166	SPST-NO	Overmolded	Leads and Crimped Axial Leads – Surface Mount
59170	SPST-NO	Overmolded	Leads and Crimped Axial Leads – Surface Mount
59045-1	SPST-NO	Overmolded	Radial Leads
59050-1x	SPST-NO	Overmolded	Radial Leads
59050-2x	SPST-NO	Overmolded	Radial Leads
59050-3x	SPST-NO	Glass	Axial Leads
59020x	SPST-NO	Glass	Axial Leads
59021x	SPST-NO	Glass	Axial Leads
59001x	SPST-NO	Epoxy potting	Leads
59155x	SPDT-NO	Overmoulded	Two Axial Leads
59156x	SPDT-NO	Overmoulded	Two Axial Leads
59177x	SPDT-NO	Overmoulded	Two Axial Leads

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Temperature range:
The service temperature range is -40°C to +125°C.

Electrical data

Part Number	Maximum Wattage (W)	AC		DC	
		Voltage (V)	Current (A)	Voltage (V)	Current (A)
DRR-129 DRS-50	50	125 250	0.4 0.2	-	-
FLEX-14	10	125 140 14	0.35 0.072 0.5	200	0.5
HA15-2	20 10 10	265 100 265	0.075 0.354 0.3	- 200 200	- 0.5 0.4
MACD-14	10	125 140 14	0.35 0.072 0.5	200	0.5
MATE-12	10	125 120 140 14	0.354 0.1 - 0.5	200 50	0.5 0.25
MARR-5 MVSR-20	10	120 265	0.1 0.354	50 1000	0.25 0.5
MASM-14x	10	125 140 14	0.35 0.072 0.5	200	0.5
MDCG-4	10	125 140 14 120	0.35 - 0.5 0.5	200 24	1 0.5
MDRR-DT	10	125	0.35	175	0.35
MDSM-4x	10	125 140 14 120	0.35 - 0.5 0.5	200 24	1 0.5
MDSM-10x	10	125	0.354	200	0.5
MDSM-DTx	10	125	0.35	175	0.35
MDSR-7	10	125 120 140 14	0.354 0.1 - 0.5	200 50	0.5 0.25
MDSR-10	10	125 140 14	0.354 0.072 0.5	200	0.5
MISM-3V1x	10	120	0.25	170	0.25
MISM-7x	10	120	0.25	170	0.25
MITI-7	10	120	0.25	170	0.25
MLRR-3	20	125	0.707	200	1
MLRR-4	20	125	0.707	200 24 50	1 0.25 0.25
MLSM-3x	20	125	0.707	200	1
MLSM-4x	GP	125	0.707	200 24 50	1 0.25 0.25
MRPR-3	50	120	0.5	200 24	0.001 1.5
		120 240	0.1 0.05	-	-
		24	1.125	-	-
MRPR-8	50	120	0.5	200 24	0.001 1.5
		240 120 265 48	0.25 0.5 0.189 0.707	250	1
MRPR-20	50	24	1.125	24	1.5
		265	0.189	250	1
DRS-DTH	30	125 250	0.24 0.12	500	0.002
59165	10	140	0.35	200	0.5

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Part Number	Maximum Wattage (W)	AC		DC	
		Voltage (V)	Current (A)	Voltage (V)	Current (A)
59166	10	140	0.35	200	0.5
59170	10	140	0.35	200	0.5
59045-1	10	140	0.35	200	0.5
59050-1x	10	140	0.35	200	0.5
59050-2x	20	265	0.35	200	0.5
59050-3x	5	120	0.18	175	0.25
59020x	10	120	0.18	170	0.25
59021x	10	120	0.18	170	0.25
59001x	10	120	0.18	170	0.25
59155x	10	120	0.18	170	0.25
59156x	10	120	0.18	170	0.25
59177x	10	120	0.18	170	0.25

Routine tests:
Not required.

[16] Descriptive Documents
The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this Type Examination Certificate.

[17] Schedule of Limitations:

- These devices shall be used within their electrical ratings as indicated under “Electrical Data”.
- These devices shall be mounted within a suitable ATEX enclosure in accordance with spacing, mounting, and segregation requirements of the ultimate product standard.
- These devices are intended for factory wiring only (terminations are not suitable for field wiring).
- No determination of the strength of the glass envelope has been made. Each end-use application shall determine the adequacy of the glass envelope.
- Temperature Test shall be considered in end product evaluation.

[18] Essential Health and Safety Requirements
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

The trademark HAMLIN or or LF or LF will be used as the company identifier on the marking label.