



Fail-safe digital module DM-F local, for fail-safe shutdown via hardware signal Us: 24 V DC 2 relay enabling circuits, 2 relay outputs, safety function can be set via DIP switch, maximum achievable SIL IEC 61508: 3, maximum achievable PL ISO 13849-1: E

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Fail-safe digital module
<b>design of the product</b>	for emergency off and safety doors
<b>product type designation</b>	DM-FL
<b>General technical data</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>• EMERGENCY OFF function</li> <li>• automatic start</li> <li>• light barrier monitoring</li> <li>• light array monitoring</li> <li>• protective door monitoring</li> <li>• magnetically operated switch monitoring NC-NO</li> <li>• magnetically operated switch monitoring NC-NC</li> <li>• pressure-sensitive mat monitoring</li> <li>• monitored start-up</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> </ul>
<b>product feature cross-circuit-proof</b>	Yes
<b>product component</b>	
<ul style="list-style-type: none"> <li>• input for thermistor connection</li> <li>• digital input</li> <li>• input for analog temperature sensors</li> <li>• input for ground fault detection</li> <li>• relay output</li> </ul>	<ul style="list-style-type: none"> <li>No</li> <li>Yes</li> <li>No</li> <li>No</li> <li>Yes</li> </ul>
<b>consumed active power</b>	3 W
insulation voltage with degree of pollution 3 at AC rated value	300 V
<b>surge voltage resistance rated value</b>	4 000 V
<b>protection class IP</b>	IP20
<b>shock resistance according to IEC 60068-2-27</b>	15g / 11 ms
<b>operating frequency maximum</b>	360 1/y
<b>switching capacity current of the NO contacts of the relay outputs at AC-15</b>	
<ul style="list-style-type: none"> <li>• at 24 V</li> <li>• at 120 V</li> <li>• at 240 V</li> </ul>	<ul style="list-style-type: none"> <li>3 A</li> <li>3 A</li> <li>1.5 A</li> </ul>
<b>switching capacity current of the NO contacts of the relay outputs at DC-13</b>	
<ul style="list-style-type: none"> <li>• at 24 V</li> <li>• at 60 V</li> <li>• at 125 V</li> <li>• at 250 V</li> </ul>	<ul style="list-style-type: none"> <li>4 A</li> <li>0.55 A</li> <li>0.22 A</li> <li>0.11 A</li> </ul>
<b>switching capacity current of relay enabling circuits at AC-15</b>	

<ul style="list-style-type: none"> <li>• at 24 V</li> <li>• at 120 V</li> <li>• at 240 V</li> </ul>	<p>3 A</p> <p>3 A</p> <p>1.5 A</p>
<b>switching capacity current of relay enabling circuits at DC-13</b>	
<ul style="list-style-type: none"> <li>• at 24 V</li> <li>• at 60 V</li> <li>• at 125 V</li> <li>• at 250 V</li> </ul>	<p>4 A</p> <p>0.55 A</p> <p>0.22 A</p> <p>0.11 A</p>
<b>mechanical service life (operating cycles) typical</b>	10 000 000
electrical endurance (operating cycles) typical	100 000
<b>buffering time in the event of power failure</b>	60 ms
<b>make time with automatic start</b>	
<ul style="list-style-type: none"> <li>• typical</li> <li>• maximum</li> <li>• at DC maximum</li> <li>• after power failure typical</li> <li>• after power failure maximum</li> </ul>	<p>50 ms</p> <p>100 ms</p> <p>100 ms</p> <p>8 000 ms</p> <p>8 200 ms</p>
<b>backslide delay time after opening of the safety circuits typical</b>	50 ms
<b>backslide delay time in the event of power failure</b>	
<ul style="list-style-type: none"> <li>• typical</li> <li>• maximum</li> </ul>	<p>40 ms</p> <p>80 ms</p>
<b>reference code according to IEC 81346-2</b>	F
<b>reference code according to IEC 81346-2:2019</b>	F
<b>type of input characteristic</b>	Type 2 in accordance with EN 61131-2
<b>Substance Prohibition (Date)</b>	05/01/2012
<b>SVHC substance name</b>	Blei - 7439-92-1 Bleimonoxid (Bleioxid) - 1317-36-8 Bleitanzirkonoxid - 12626-81-2 2,2',6,6'-Tetrabrom-4,4'-isopropylidendi - 79-94-7
certificate of suitability according to ATEX directive 2014/34/EU	BVS 06 ATEX F001
explosion device group and category according to ATEX directive 2014/34/EU	II (2) G, II (2) D, I (M2)
<b>Electromagnetic compatibility</b>	
EMC emitted interference according to IEC 60947-1	class A
EMC immunity according to IEC 60947-1	corresponds to degree of severity 3
<b>conducted interference</b>	
<ul style="list-style-type: none"> <li>• due to burst according to IEC 61000-4-4</li> <li>• due to conductor-earth surge according to IEC 61000-4-5</li> <li>• due to conductor-conductor surge according to IEC 61000-4-5</li> <li>• due to high-frequency radiation according to IEC 61000-4-6</li> </ul>	<p>2 kV network connection / 1 kV control connection</p> <p>1 kV</p> <p>0.5 kV</p> <p>10 V</p>
<b>field-based interference according to IEC 61000-4-3</b>	10 V/m
<b>electrostatic discharge according to IEC 61000-4-2</b>	6 kV contact discharge / 8 kV air discharge
<b>conducted HF interference emissions according to CISPR11</b>	corresponds to degree of severity A
<b>field-bound HF interference emission according to CISPR11</b>	corresponds to degree of severity A
<b>Inputs/ Outputs</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>• parameterizable inputs</li> <li>• parameterizable outputs</li> </ul>	<p>Yes</p> <p>Yes</p>
<b>number of inputs</b>	5
<b>design of input</b>	
<ul style="list-style-type: none"> <li>• cascading input/functional switching</li> <li>• feedback input</li> <li>• start input</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p>
<b>pulse duration</b>	
<ul style="list-style-type: none"> <li>• of the sensor input minimum</li> <li>• of the ON pushbutton input minimum</li> <li>• of the cascading input minimum</li> </ul>	<p>30 ms</p> <p>0.2 s</p> <p>0.2 s</p>
<b>number of digital inputs</b>	0

<ul style="list-style-type: none"> <li>with a common reference potential</li> </ul>	4
<b>digital input version</b>	
<ul style="list-style-type: none"> <li>type 1 acc. to IEC 61131</li> </ul>	No
<ul style="list-style-type: none"> <li>type 2 acc. to IEC 61131</li> </ul>	Yes
<b>number of analog inputs</b>	0
<b>number of sensor inputs</b>	
<ul style="list-style-type: none"> <li>1-channel or 2-channel</li> </ul>	1
<ul style="list-style-type: none"> <li>2-channel</li> </ul>	1
<b>number of outputs</b>	2
<b>number of semiconductor outputs</b>	0
<b>number of outputs</b>	
<ul style="list-style-type: none"> <li>as contact-affected switching element</li> </ul>	2
<ul style="list-style-type: none"> <li>as contact-affected switching element as NO contact safety-related instantaneous contact</li> </ul>	2
<b>number of analog outputs</b>	0
<b>switching behavior</b>	monostable
<b>property of contacts of the relay outputs</b>	Fail-safe NO contacts
<b>wire length for digital signals maximum</b>	1 500 m

### Product Function

<b>suitability for use</b>	
<ul style="list-style-type: none"> <li>position switch monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>EMERGENCY-OFF circuit monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>valve monitoring</li> </ul>	No
<ul style="list-style-type: none"> <li>opto-electronic protection device monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>tactile sensor monitoring</li> </ul>	No
<ul style="list-style-type: none"> <li>magnetically operated switch monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>proximity switch monitoring</li> </ul>	No
<ul style="list-style-type: none"> <li>safety switch</li> </ul>	Yes
<ul style="list-style-type: none"> <li>safety-related circuits</li> </ul>	Yes

### Installation/ mounting/ dimensions

<b>mounting position</b>	any
<b>fastening method</b>	screw and snap-on mounting
<b>height</b>	106 mm
<b>width</b>	45 mm
<b>depth</b>	124 mm
<b>required spacing</b>	
<ul style="list-style-type: none"> <li>top</li> </ul>	40 mm
<ul style="list-style-type: none"> <li>bottom</li> </ul>	40 mm
<ul style="list-style-type: none"> <li>left</li> </ul>	0 mm
<ul style="list-style-type: none"> <li>right</li> </ul>	0 mm

### Connections/ Terminals

<b>product component removable terminal for auxiliary and control circuit</b>	Yes
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>solid</li> </ul>	1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>finely stranded with core end processing</li> </ul>	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>for AWG cables solid</li> </ul>	1x (20 ... 12), 2x (20 ... 14)
<ul style="list-style-type: none"> <li>for AWG cables stranded</li> </ul>	1x (20 ... 14), 2x (20 ... 16)
tightening torque with screw-type terminals	0.8 ... 1.2 N·m
tightening torque [lbf·in] with screw-type terminals	7 ... 10.3 lbf·in

### Ambient conditions

<b>installation altitude at height above sea level</b>	
<ul style="list-style-type: none"> <li>1 maximum</li> </ul>	2 000 m
<ul style="list-style-type: none"> <li>2 maximum</li> </ul>	3 000 m; max. +50 °C (no protective separation)
<ul style="list-style-type: none"> <li>3 maximum</li> </ul>	4 000 m; max. +40 °C (no protective separation)
<b>ambient temperature</b>	
<ul style="list-style-type: none"> <li>during operation</li> </ul>	-25 ... +60 °C
<ul style="list-style-type: none"> <li>during storage</li> </ul>	-40 ... +80 °C
<ul style="list-style-type: none"> <li>during transport</li> </ul>	-40 ... +80 °C
<b>environmental category</b>	
<ul style="list-style-type: none"> <li>during operation according to IEC 60721</li> </ul>	3K6 (no formation of ice, no condensation, relative humidity 10 ... 95%), 3C3

<ul style="list-style-type: none"> <li>during storage according to IEC 60721</li> </ul>	(no salt mist), 3S2 (sand must not get into the devices), 3M6
<ul style="list-style-type: none"> <li>during transport according to IEC 60721</li> </ul>	1K6 (no condensation, relative humidity 10 ... 95%), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4 2K2, 2C1, 2S1, 2M2
relative humidity during operation	5 ... 95 %
<b>contact rating of auxiliary contacts according to UL</b>	B300 / R300
<b>Short-circuit protection</b>	
design of the fuse link for short-circuit protection of relay enabling circuits required	gL/gG: 4 A
<b>Safety related data</b>	
<b>diagnostics test interval by internal test function maximum</b>	28 800 s
<b>safe state</b>	Safety outputs switched off
<b>stop category according to EN 60204-1</b>	0
<b>failure rate [FIT] at rate of recognizable hazardous failures (<math>\lambda_{dd}</math>)</b>	868 FIT
<b>failure rate [FIT] at rate of non-recognizable hazardous failures (<math>\lambda_{du}</math>)</b>	7 FIT
<b>average diagnostic coverage level (DCavg)</b>	
<ul style="list-style-type: none"> <li>at single-channel evaluation</li> </ul>	90 %
<ul style="list-style-type: none"> <li>at 2-channel evaluation</li> </ul>	99 %
<b>IEC 62061</b>	
<b>Safety Integrity Level (SIL)</b>	
<ul style="list-style-type: none"> <li>at single-channel evaluation according to IEC 62061</li> </ul>	1
<ul style="list-style-type: none"> <li>at 2-channel evaluation according to IEC 62061</li> </ul>	3
<b>ISO 13849</b>	
<b>performance level (PL)</b>	
<ul style="list-style-type: none"> <li>at single-channel evaluation according to ISO 13849-1</li> </ul>	d
<ul style="list-style-type: none"> <li>at 2-channel evaluation according to ISO 13849-1</li> </ul>	e
<b>category</b>	
<ul style="list-style-type: none"> <li>at single-channel evaluation according to ISO 13849-1</li> </ul>	2
<ul style="list-style-type: none"> <li>at 2-channel evaluation according to ISO 13849-1</li> </ul>	4
<b>IEC 61508</b>	
<b>Safety Integrity Level (SIL)</b>	
<ul style="list-style-type: none"> <li>at single-channel evaluation according to IEC 61508</li> </ul>	1
<ul style="list-style-type: none"> <li>at 2-channel evaluation according to IEC 61508</li> </ul>	3
<b>safety device type according to IEC 61508-2</b>	Type B
<b>PFDavg with low demand rate</b>	
<ul style="list-style-type: none"> <li>at single-channel evaluation according to IEC 61508</li> </ul>	0.00065
<ul style="list-style-type: none"> <li>at 2-channel evaluation according to IEC 61508</li> </ul>	2E-5
<b>Safe failure fraction (SFF)</b>	99 %
<b>hardware fault tolerance at single-channel evaluation according to IEC 61508</b>	0
<b>hardware fault tolerance at 2-channel evaluation according to IEC 61508</b>	1
<b>T1 value for proof test interval or service life according to IEC 61508</b>	20 a
<b>Electrical Safety</b>	
<b>touch protection against electrical shock</b>	finger-safe
<b>Galvanic isolation</b>	
<b>(electrically) protective separation according to IEC 60947-1</b>	All circuits in SIMOCODE pro are with protective separation, i.e. they are designed with doubled creepage paths and clearances. NOTICE: The information in the "Protective Separation" test report, No. 2668, must be observed.
<b>design of the electrical isolation</b>	Protective separation in accordance with IEC 60947-1 for all circuits, up to installation altitude of 2000 m
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage at DC</b>	
<ul style="list-style-type: none"> <li>rated value</li> </ul>	24 V
<b>operating range factor control supply voltage rated value at DC</b>	
<ul style="list-style-type: none"> <li>initial value</li> </ul>	0.8
<ul style="list-style-type: none"> <li>full-scale value</li> </ul>	1.2
<b>inrush current peak</b>	

• at 24 V	8.3 A
duration of inrush current peak	
• at 24 V	1 ms

### Approvals Certificates

General Product Approval	EMC	For use in hazardous locations
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[Confirmation](#)



For use in hazardous locations	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates
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[Explosion Protection Certificate](#)

[Type Examination Certificate](#)



[Type Test Certificates/Test Report](#)

Marine / Shipping	other
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[Confirmation](#)



### Further information

Siemens has decided to exit the Russian market (see here).

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

Information- and Downloadcenter (Catalogs, Brochures,...)

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3UF7320-1AB00-0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF7320-1AB00-0>

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

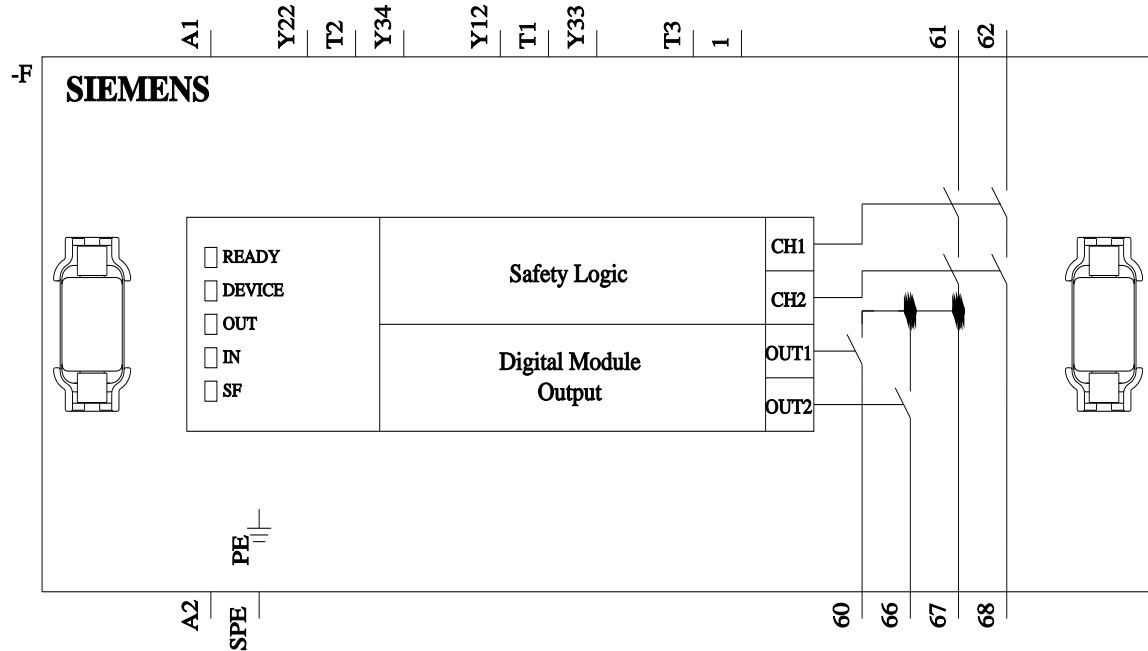
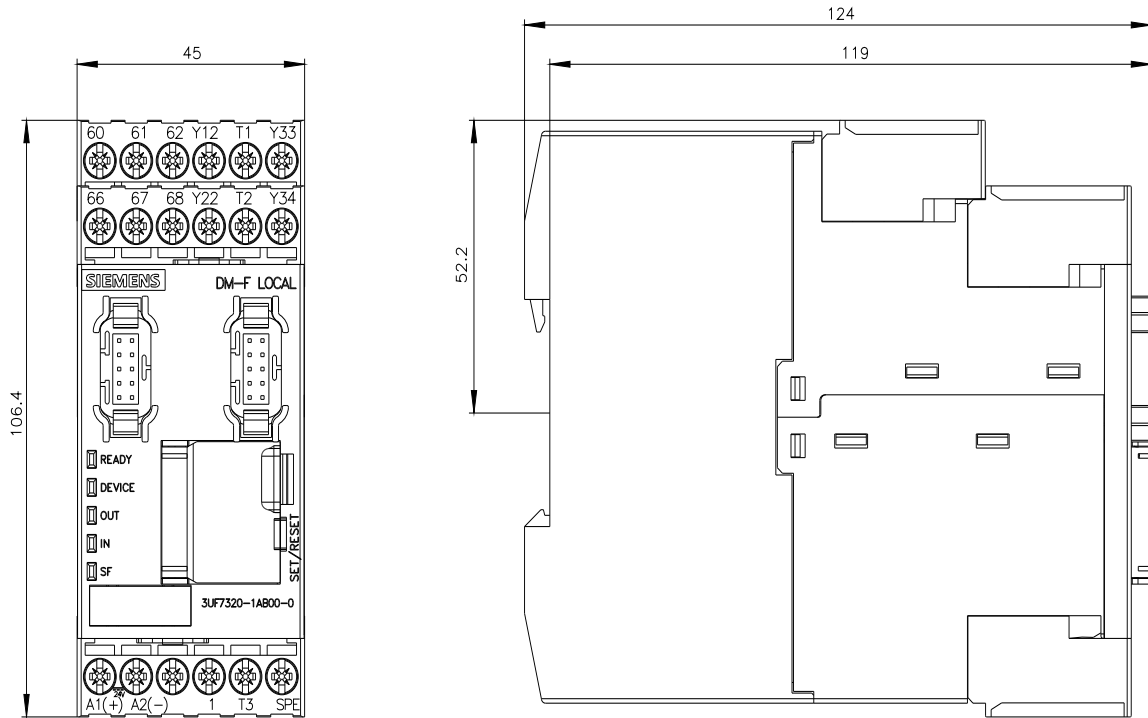
<https://support.industry.siemens.com/cs/ww/en/ps/3UF7320-1AB00-0>

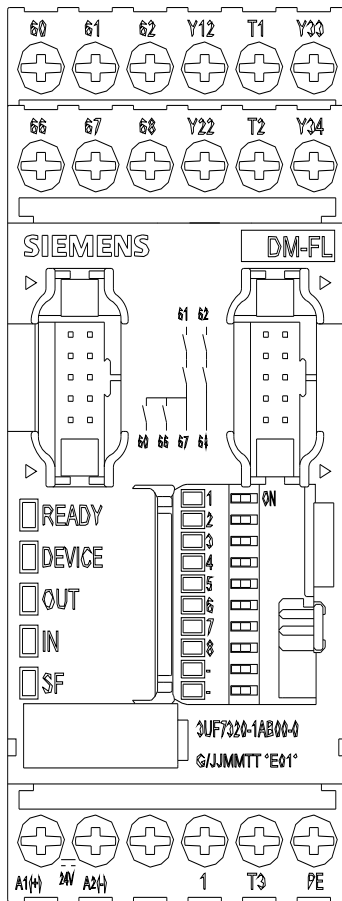
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3UF7320-1AB00-0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF7320-1AB00-0&lang=en)

Test report No. A0258, protective separation

<https://support.industry.siemens.com/cs/ww/en/view/109748152>





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