



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

product brand name	SIRIUS
product designation	Fail-safe digital module
design of the product	for emergency off and safety doors
product type designation	DM-FL

General technical data

product function	
<ul style="list-style-type: none"> • EMERGENCY OFF function • automatic start • light barrier monitoring • light array monitoring • protective door monitoring • magnetically operated switch monitoring NC-NO • magnetically operated switch monitoring NC-NC • pressure-sensitive mat monitoring • monitored start-up 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
product feature cross-circuit-proof	Yes
product component	
<ul style="list-style-type: none"> • input for thermistor connection • digital input • input for analog temperature sensors • input for ground fault detection • relay output 	<p>No</p> <p>Yes</p> <p>No</p> <p>No</p> <p>Yes</p>
consumed active power	3 W
insulation voltage with degree of pollution 3 at AC rated value	300 V
surge voltage resistance rated value	4 000 V
protection class IP	IP20
shock resistance according to IEC 60068-2-27	15g / 11 ms
vibration resistance according to IEC 60068-2-6	1 ... 6 Hz: 15 mm, 6 ... 500 Hz: 2g
operating frequency maximum	360 1/h
switching capacity current of the NO contacts of the relay outputs at AC-15	
<ul style="list-style-type: none"> • at 24 V • at 120 V • at 240 V 	<p>3 A</p> <p>3 A</p> <p>1.5 A</p>
switching capacity current of the NO contacts of the relay outputs at DC-13	
<ul style="list-style-type: none"> • at 24 V • at 60 V • at 125 V • at 250 V 	<p>4 A</p> <p>0.55 A</p> <p>0.22 A</p> <p>0.11 A</p>
switching capacity current of relay enabling circuits at AC-15	

<ul style="list-style-type: none"> • at 24 V • at 120 V • at 240 V 	3 A 3 A 1.5 A
switching capacity current of relay enabling circuits at DC-13	
<ul style="list-style-type: none"> • at 24 V • at 60 V • at 125 V • at 250 V 	4 A 0.55 A 0.22 A 0.11 A
mechanical service life (operating cycles) typical	10 000 000
electrical endurance (operating cycles) typical	100 000
buffering time in the event of power failure	60 ms
make time with automatic start	
<ul style="list-style-type: none"> • typical • maximum • at DC maximum • after power failure typical • after power failure maximum 	50 ms 100 ms 100 ms 8 000 ms 8 200 ms
backslide delay time after opening of the safety circuits typical	50 ms
backslide delay time in the event of power failure	
<ul style="list-style-type: none"> • typical • maximum 	40 ms 80 ms
reference code according to IEC 81346-2	F
type of input characteristic	Type 2 in accordance with EN 61131-2
Substance Prohibitance (Date)	05/01/2012
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)
Electromagnetic compatibility	
EMC emitted interference according to IEC 60947-1	class A
EMC immunity according to IEC 60947-1	corresponds to degree of severity 3
conducted interference	
<ul style="list-style-type: none"> • due to burst according to IEC 61000-4-4 • due to conductor-earth surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to high-frequency radiation according to IEC 61000-4-6 	2 kV network connection / 1 kV control connection 1 kV 0.5 kV 10 V
field-based interference according to IEC 61000-4-3	10 V/m
electrostatic discharge according to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge
conducted HF interference emissions according to CISPR11	corresponds to degree of severity A
field-bound HF interference emission according to CISPR11	corresponds to degree of severity A
Inputs/ Outputs	
product function	
<ul style="list-style-type: none"> • parameterizable inputs • parameterizable outputs 	Yes Yes
number of inputs	5
input version with safety-related function	2 sensor inputs 24 V DC, 1 start signal input 24 V DC, 1 cascading input 24 V DC, 1 feedback circuit input 24 V DC
design of input	
<ul style="list-style-type: none"> • cascading input/functional switching • feedback input • start input 	Yes Yes Yes
pulse duration	
<ul style="list-style-type: none"> • of the sensor input minimum • of the ON pushbutton input minimum • of the cascading input minimum 	30 ms 0.2 s 0.2 s
number of digital inputs	0
<ul style="list-style-type: none"> • with a common reference potential 	4
digital input version	

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

Product Function

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

Installation/ mounting/ dimensions

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

Connections/ Terminals

product component removable terminal for auxiliary and control circuit	Yes
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • solid • finely stranded with core end processing • at AWG cables solid • at AWG cables stranded 	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²) 1x (20 ... 12), 2x (20 ... 14) 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

installation altitude at height above sea level	
<ul style="list-style-type: none"> • 1 maximum • 2 maximum • 3 maximum 	2 000 m 3 000 m; max. +50 °C (no protective separation) 4 000 m; max. +40 °C (no protective separation)
ambient temperature	
<ul style="list-style-type: none"> • during operation • during storage • during transport 	-25 ... +60 °C -40 ... +80 °C -40 ... +80 °C
environmental category	
<ul style="list-style-type: none"> • during operation according to IEC 60721 • during storage according to IEC 60721 • during transport according to IEC 60721 	3K6 (no formation of ice, no condensation, relative humidity 10 ... 95%), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 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 %

contact rating of auxiliary contacts according to UL	B300 / R300
Short-circuit protection	
design of the fuse link for short-circuit protection of relay enabling circuits required	gL/gG: 4 A
Safety related data	
safety device type according to IEC 61508-2	Type B
type of the safety-related wiring of the inputs	single-channel and two-channel
Safety Integrity Level (SIL)	
• at single-channel evaluation according to IEC 61508	1
• at two-channel evaluation according to IEC 61508	3
SIL Claim Limit (subsystem)	
• at single-channel evaluation according to IEC 62061	1
• at two-channel evaluation according to IEC 62061	3
performance level (PL)	
• at single-channel evaluation according to ISO 13849-1	d
• at two-channel evaluation according to ISO 13849-1	e
category	
• at two-channel evaluation according to ISO 13849-1	4
• at single-channel evaluation according to ISO 13849-1	2
stop category according to EN 60204-1	0
average diagnostic coverage level (DCavg)	
• at single-channel evaluation	90 %
• at two-channel evaluation	99 %
diagnostics test interval by internal test function maximum	28 800 s
failure rate [FIT]	
• at rate of recognizable hazardous failures (λ_{dd})	867.96 FIT
• at rate of non-recognizable hazardous failures (λ_{du})	7.06 FIT
PFDavg with low demand rate	
• at single-channel evaluation according to IEC 61508	0.00065
• at two-channel evaluation according to IEC 61508	2E-5
hardware fault tolerance	
• at single-channel evaluation according to IEC 61508	0
• at two-channel evaluation according to IEC 61508	1
safe state	Safety outputs switched off
touch protection against electrical shock	finger-safe
contact reliability	0.1 million operating cycles (AC15, 230 V, 2 A)
Galvanic isolation	
(electrically) protective separation according to IEC 60947-1	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.
design of the electrical isolation	Protective separation in accordance with IEC 60947-1 for all circuits, up to installation altitude of 2000 m
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC	
• rated value	24 V
operating range factor control supply voltage rated value at DC	
• initial value	0.8
• full-scale value	1.2
inrush current peak	
• at 24 V	8.3 A
duration of inrush current peak	
• at 24 V	1 ms
Certificates/ approvals	
General Product Approval	EMC



[Confirmation](#)



For use in hazardous locations	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates
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[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?mfb=3UF7320-1AB00-0>

Cax online generator

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

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

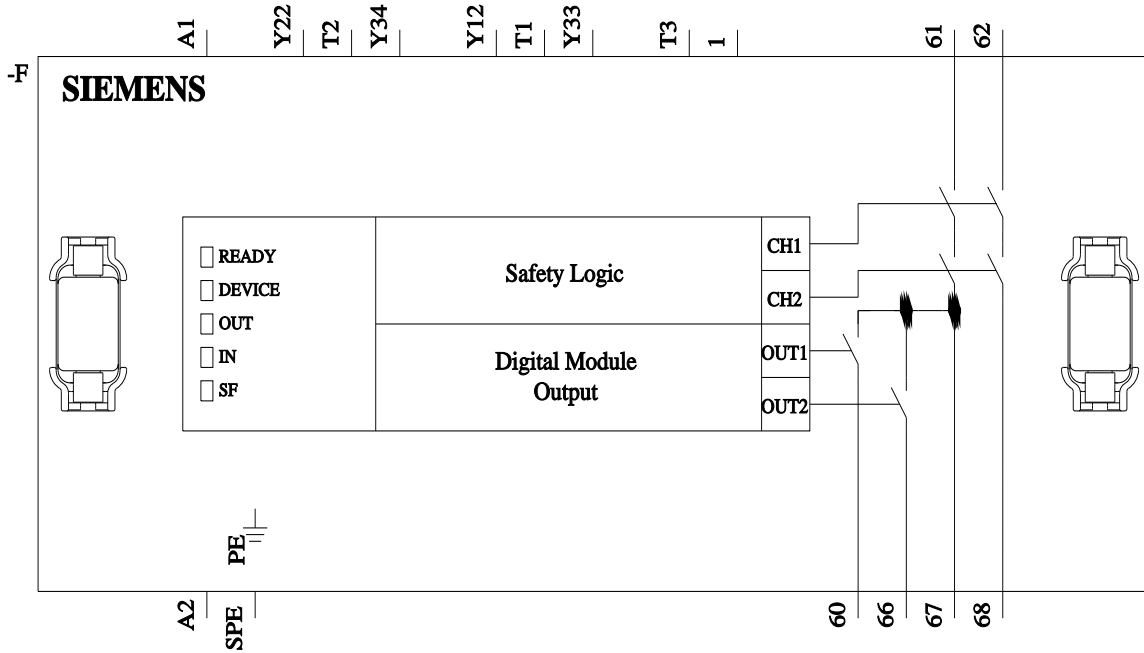
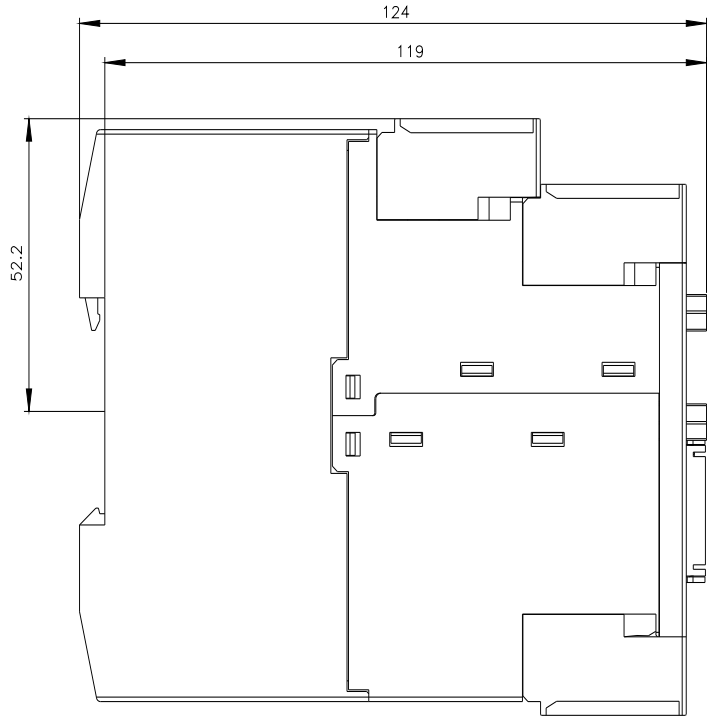
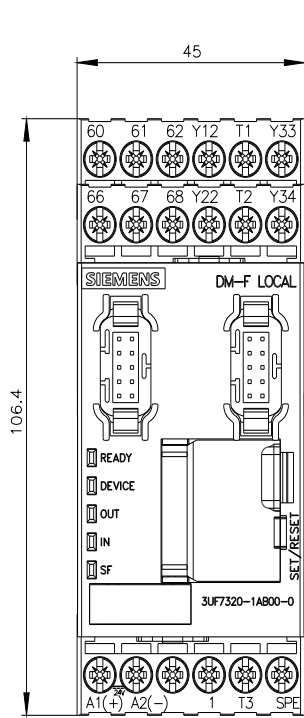
<https://support.industry.siemens.com/cs/ww/en/ps/3UF7320-1AB00-0>

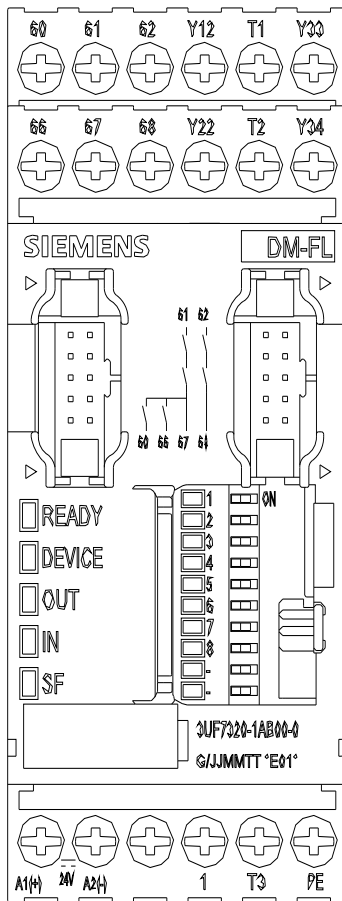
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=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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