



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	SIMOCODE
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	
• EMERGENCY OFF function	Yes
• automatic start	Yes
• light barrier monitoring	Yes
• light array monitoring	Yes
• protective door monitoring	Yes
• magnetically operated switch monitoring NC-NO	Yes
• magnetically operated switch monitoring NC-NC	Yes
• pressure-sensitive mat monitoring	Yes
• monitored start-up	Yes
product component	
• input for thermistor connection	No
• digital input	Yes
• input for analog temperature sensors	No
• input for ground fault detection	No
• relay output	Yes
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
shock resistance according to IEC 60068-2-27	15 g / 11 ms
vibration resistance according to IEC 60068-2-6	1 ... 6 Hz: 15 mm, 6 ... 500 Hz: 2 g
operating frequency maximum	360 1/y
switching capacity current of the NO contacts of the relay outputs at AC-15	
• at 24 V	3 A
• at 120 V	3 A
• at 240 V	1.5 A
switching capacity current of the NO contacts of the relay outputs at DC-13	
• at 24 V	4 A
• at 60 V	0.55 A
• at 125 V	0.22 A
• at 250 V	0.11 A
switching capacity current of relay enabling circuits at AC-15	

• 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	
• 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
recovery time	
• after power failure typical • after opening of the safety circuits typical	8 s 250 ms
make time with automatic start	
• 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	
• typical • maximum	40 ms 80 ms
reference code according to IEC 81346-2	F
reference code according to IEC 81346-2:2019	F
type of input characteristic	Type 2 in accordance with EN 61131-2
Substance Prohibitance (day/month/year)	05/01/2012
SVHC substance name	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1
Net Weight	0.35 kg
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	
• 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	
• parameterizable inputs • parameterizable outputs	Yes Yes
number of inputs	5
design of input	
• cascading input/functional switching • feedback input • start input	Yes Yes Yes
pulse duration	

• of the sensor input minimum	30 ms
• of the ON pushbutton input minimum	0.2 s
• of the cascading input minimum	0.2 s
number of digital inputs	0
• with a common reference potential	4
digital input version	
• type 1 acc. to IEC 61131	No
• type 2 acc. to IEC 61131	Yes
number of analog inputs	0
number of sensor inputs	
• 1-channel or 2-channel	1
• 2-channel	1
number of outputs	2
number of semiconductor outputs	0
number of outputs as contact-affected switching element	
•	2
• as NO contact safety-related instantaneous contact	2
number of analog outputs	0
switching behavior	monostable
property of contacts of the relay outputs	Fail-safe NO contacts
wire length for digital signals maximum	1 500 m
Product Function	
suitability for use	
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• valve monitoring	No
• opto-electronic protection device monitoring	Yes
• tactile sensor monitoring	No
• magnetically operated switch monitoring	Yes
• proximity switch monitoring	No
• safety switch	Yes
• safety-related circuits	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	
• top	40 mm
• bottom	40 mm
• left	0 mm
• right	0 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection for auxiliary and control circuit	screw-type terminals
type of connectable conductor cross-sections	
• solid	1x (0.5 ... 4.0mm ²), 2x (0.5 ... 2.5 mm ²)
• finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
• for AWG cables solid	1x (20 ... 12), 2x (20 ... 14)
• for AWG cables stranded	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	
• 1 maximum	2 000 m
• 2 maximum	3 000 m; max. +50 °C (no protective separation)
• 3 maximum	4 000 m; max. +40 °C (no protective separation)

ambient temperature	
• during operation	-25 ... +60 °C
• during storage	-40 ... +80 °C
• during transport	-40 ... +80 °C
environmental category	
• during operation 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
• during storage according to IEC 60721	1K6 (no condensation, relative humidity 10 ... 95%), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4
• during transport according to IEC 60721	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	
safe state	Safety outputs switched off
diagnostics test interval by internal test function maximum	28 800 s
stop category according to IEC 60204-1	0
failure rate [FIT] at rate of recognizable hazardous failures (λ_{dd})	868 FIT
failure rate [FIT] at rate of non-recognizable hazardous failures (λ_{du})	7 FIT
average diagnostic coverage level (DCavg)	
• at single-channel evaluation	90 %
• at 2-channel evaluation	99 %
IEC 62061	
Safety Integrity Level (SIL)	
• at single-channel evaluation according to IEC 62061	1
• at 2-channel evaluation according to IEC 62061	3
ISO 13849	
performance level (PL)	
• at single-channel evaluation according to ISO 13849-1	d
• at 2-channel evaluation according to ISO 13849-1	e
category	
• at single-channel evaluation according to ISO 13849-1	2
• at 2-channel evaluation according to ISO 13849-1	4
IEC 61508	
Safety Integrity Level (SIL)	
• at single-channel evaluation according to IEC 61508	1
• at 2-channel evaluation according to IEC 61508	3
safety device type according to IEC 61508-2	Type B
PFDavg with low demand rate	
• at single-channel evaluation according to IEC 61508	0.00065
• at 2-channel evaluation according to IEC 61508	2E-5
Safe failure fraction (SFF)	99 %
hardware fault tolerance	
• at single-channel evaluation according to IEC 61508	0
• at 2-channel evaluation according to IEC 61508	1
T1 value for proof test interval or service life according to IEC 61508	20 a
Electrical Safety	
touch protection against electrical shock	finger-safe
ATEX	
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)
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

Approvals Certificates

Environment	General Product Approval
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[Environmental Con-
firmations](#)



General Product Approval	EMV	For use in hazard- ous locations
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[TUEV](#)



For use in hazardous locations	Functional Safety	Test Certificates	Maritime application
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[Miscellaneous](#)

[Type Examination Cer-
tificate](#)

[Type Test Certific-
ates/Test Report](#)



Maritime application	other	Industrial Communication
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[Confirmation](#)

[Confirmation](#)



Further information

Information on the packaging

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

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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

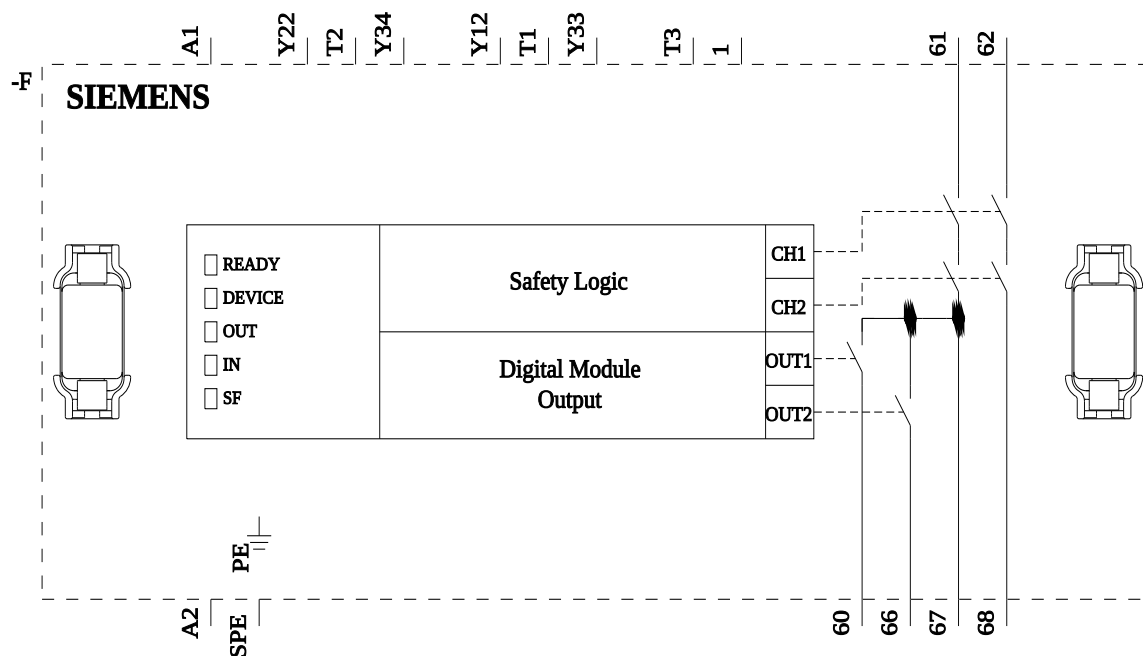
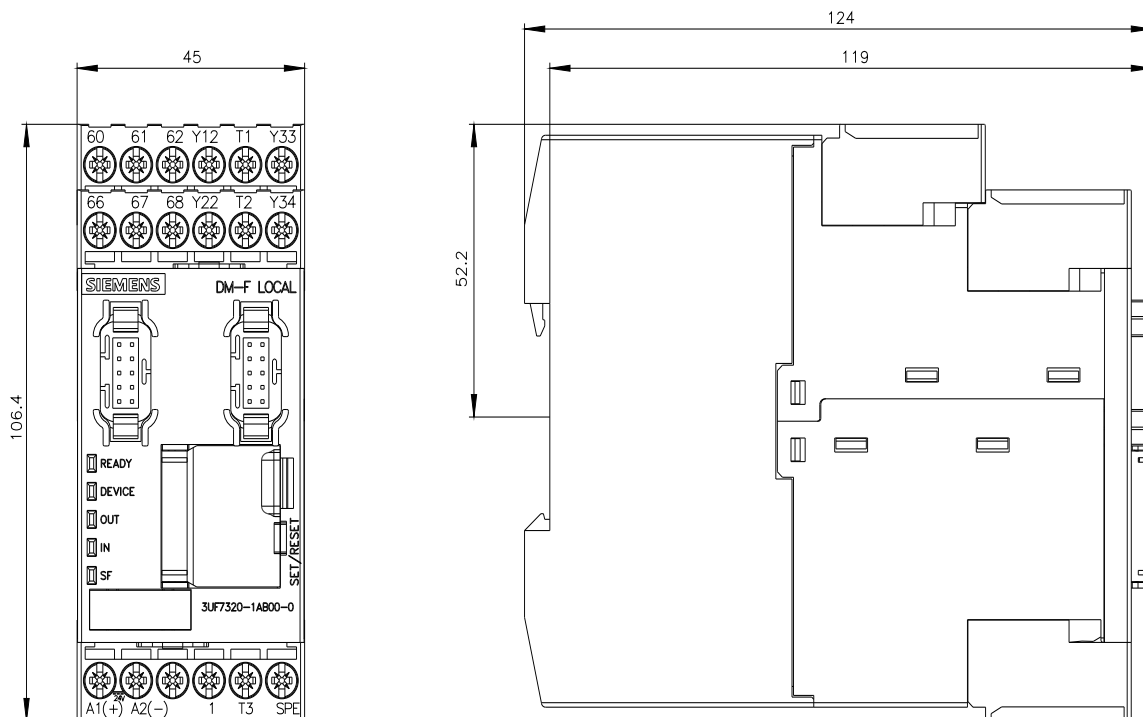
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF7320-1AB00-0>

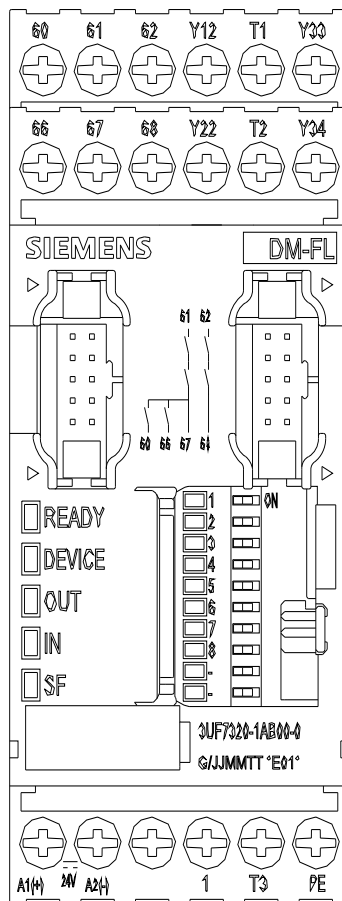
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<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, ...)

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF7320-1AB00-0&lang=en





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