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Data sheet 3UF7320-1AB00-0



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	

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● at 24 V	3 A
● at 120 V	3 A
● at 240 V	1.5 A
switching capacity current of relay enabling circuits 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
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	8 s
● after opening of the safety circuits typical	250 ms
make time with automatic start	
● typical	50 ms
● maximum	100 ms
● at DC maximum	100 ms
● after power failure typical	8 000 ms
● after power failure maximum	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	40 ms
● maximum	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	0.319 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	2 kV network connection / 1 kV control connection
● due to conductor-earth surge according to IEC 61000-4-5	1 kV
● due to conductor-conductor surge according to IEC 61000-4-5	0.5 kV
● due to high-frequency radiation according to IEC 61000-4-6	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	Yes
● parameterizable outputs	Yes
number of inputs	5
design of input	
● cascading input/functional switching	Yes
● feedback input	Yes
● start input	Yes
pulse duration	

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● 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-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 ... 4.0mm²), 2x (0.5 ... 2.5 mm²)
● finely stranded with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
● 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	

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● 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	
product function suitable for safety function	Yes
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 (λdd)	868 FIT
failure rate [FIT] at rate of non-recognizable hazardous failures (λdu)	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.

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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**			
Environmental Confirmations	EPD	CCC	cULus	UL	EAC

General Product Approval			**EMV**		**For use in hazardous locations**
TUEV	CE EG-Konf.	UKCA	KC	RCM	IECEx

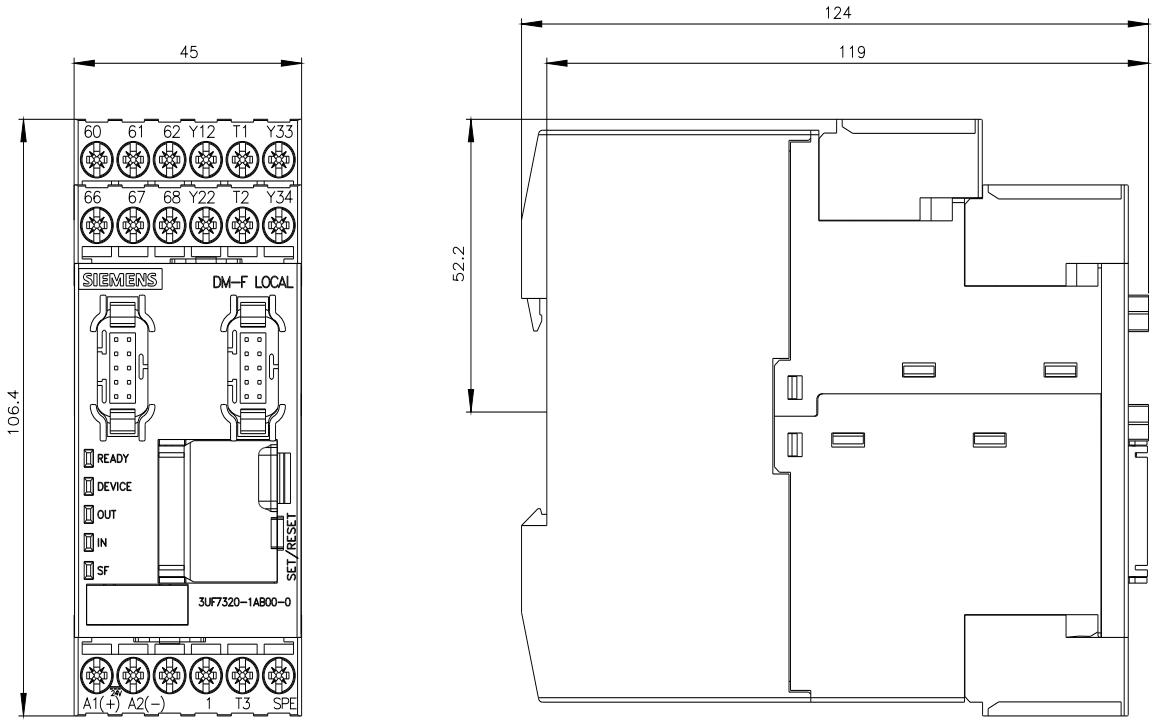
For use in hazardous locations		**Functional Saftey**	**Test Certificates**	**Maritime application**	
ATEX	Miscellaneous	Type Examination Certificate	Type Test Certificates/Test Report	ABS	DNV

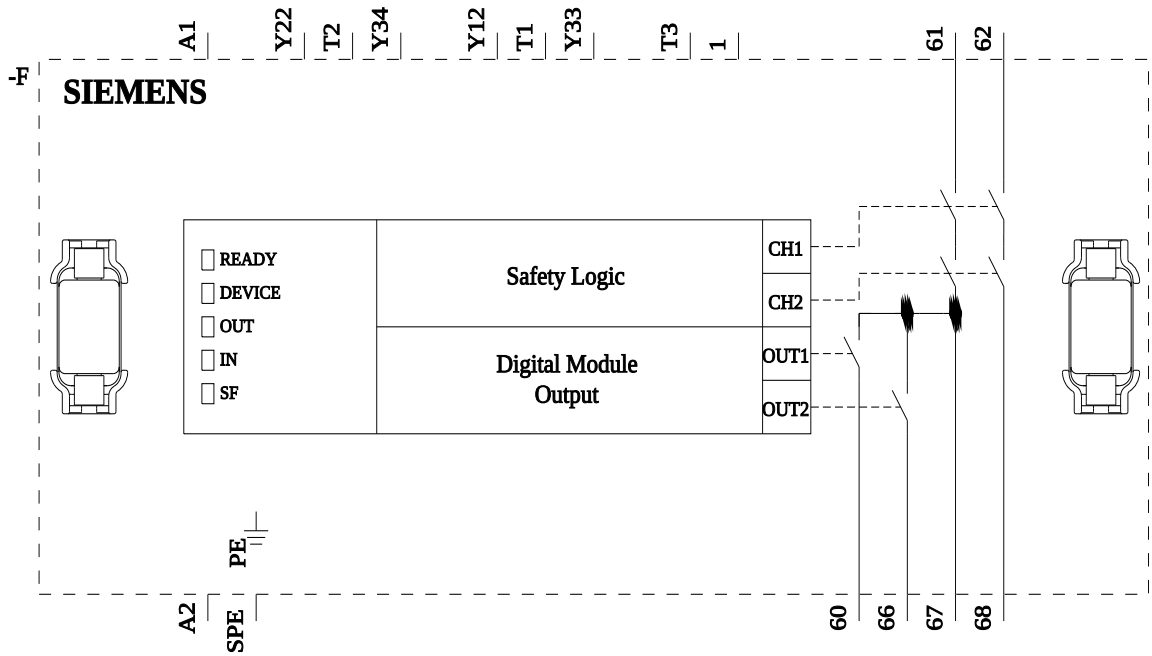
other	**Industrial Communication**
Confirmation	Profibus

Further information

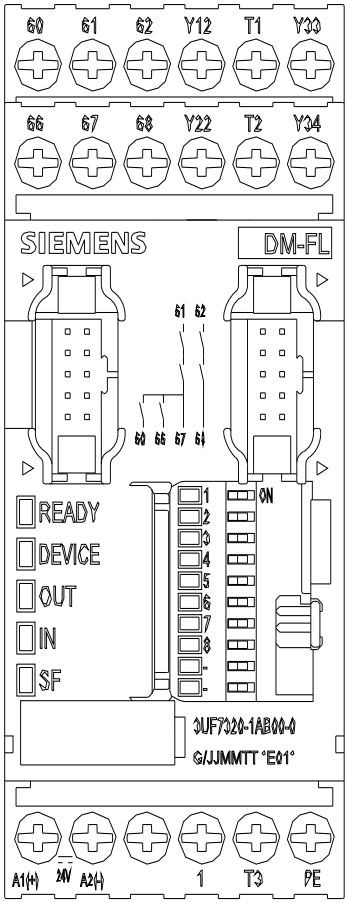
Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875
Information for data generation and storage
https://support.industry.siemens.com/cs/ww/en/view/109995012
Information- and Downloadcenter (Catalogs, Brochures,…)
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Industry 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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last modified: 7/31/2026

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