SIEMENS

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	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	
● 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 feature cross-circuit-proof	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
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/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	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
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 (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	
● 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
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	
● cascading input/functional switching	Yes
● feedback input	Yes
● start input	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 contact-affected switching element 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 connectable conductor cross-sections	
● solid	1x (0.5 ... 4.0 mm²), 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	
● 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	
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 (λdd)	868 FIT
● at rate of non-recognizable hazardous failures (λdu)	7 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**

CSA	CCC	Confirmation	UL	EAC	RCM

For use in hazardous locations			Functional Safety/Safety of Machinery	Declaration of Conformity	
IECEx	ATEX	Explosion Protection Certificate	Type Examination Certificate	UKCA	EG-Konf.

Test Certificates	Marine / Shipping			other	
Type Test Certificates/Test Report	ABS	RMRS	DNV-GL	Confirmation	Profibus

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

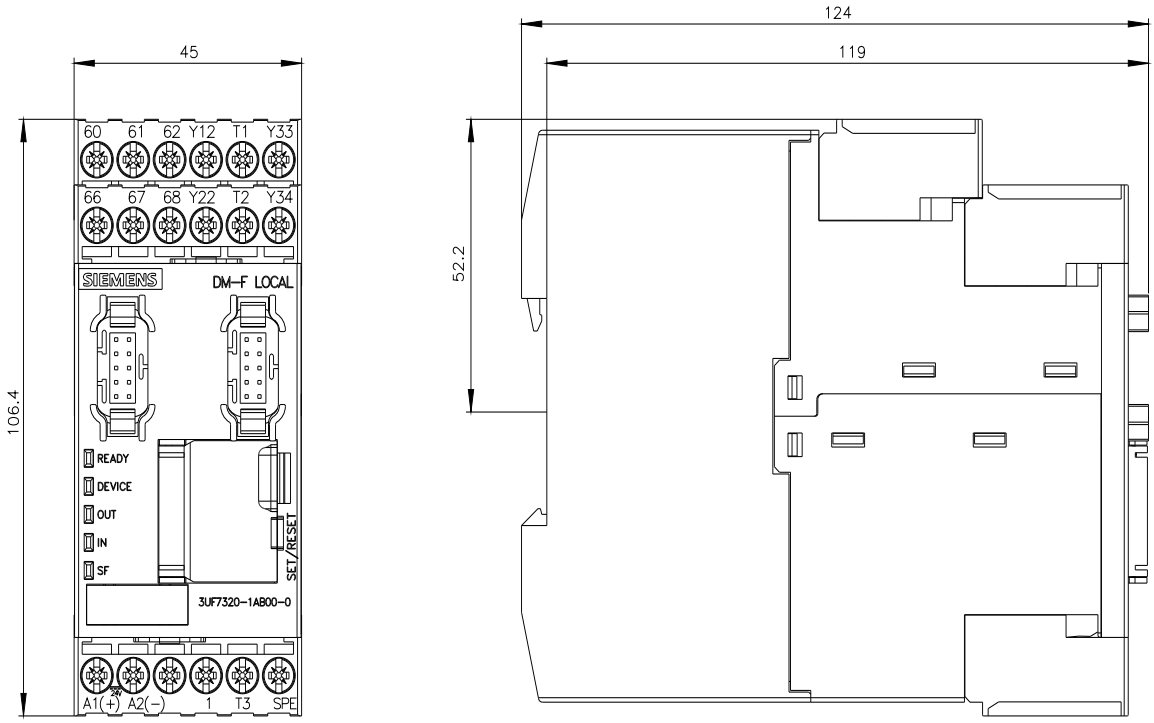
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3UF7320-1AB00-0

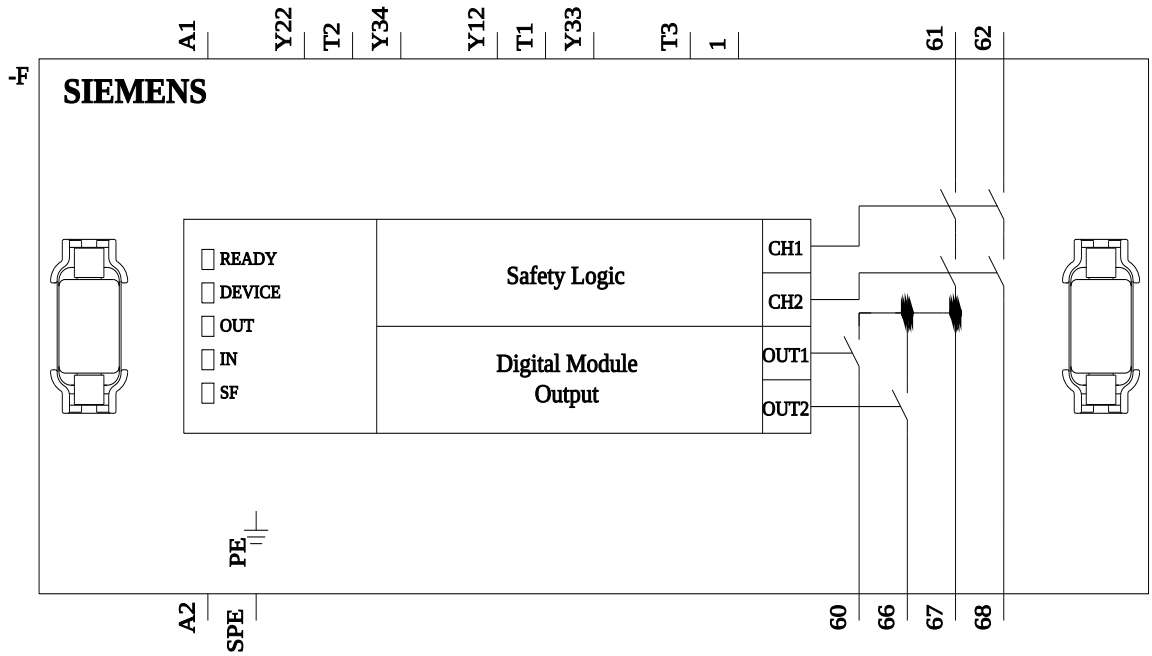
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF7320-1AB00-0

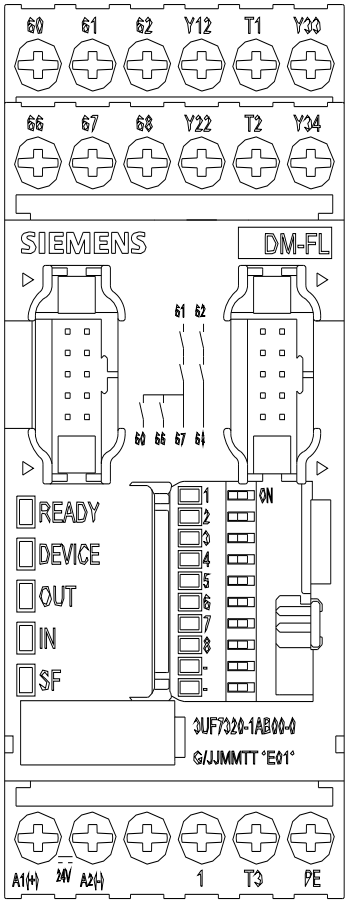
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3UF7320-1AB00-0

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

Test report No. A0258, protective separation
https://support.industry.siemens.com/cs/ww/en/view/109748152







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