

F-DS1E-X for ET 200S Fail-safe DOL starter Setting range 2.4...16 A
Mechanical switching Electronic protection AC-3, up to 7.5 kW / 400 V
expandable for Brake control module 2DI module 2DI control module
Circuit breaker signaling parameterizable



Product brand name	SIMATIC
Product designation	Motor starters
Design of the product	direct starter
Product type designation	ET 200S

General technical data	
Trip class	CLASS 10 and 20 adjustable
Product function	
• on-site operation	Yes
Power loss [W] for rated value of the current	
• at AC in hot operating state	18 W
• at AC in hot operating state per pole	6 W
Power loss [W] for rated value of the current without load current share typical	4.22 W
Insulation voltage	
• rated value	500 V
Degree of pollution	3 at 400 V, 2 at 500 V according to IEC60664 (IEC61131)
Surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
• between main and auxiliary circuit	400 V

Protection class IP	IP20
Shock resistance	5g / 11 ms
Vibration resistance	2g
Operating frequency maximum	80 1/h
Mechanical service life (switching cycles) • of the main contacts typical	100 000
Type of assignment	2
Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	A
Reference code acc. to DIN EN 81346-2	Q
Reference code acc. to DIN EN 61346-2	Q
Product function • direct start • reverse starting	Yes No
Product component Motor brake output	Yes
Product feature • brake control with 230 V AC • brake control with 24 V DC • brake control with 180 V DC • brake control with 500 V DC	No No No No
Product extension braking module for brake control	Yes
Product function Short circuit protection	Yes
Design of short-circuit protection	circuit-breakers
Maximum short-circuit current breaking capacity (Icu) • at 400 V rated value	50 kA

Electromagnetic compatibility

EMC emitted interference • acc. to IEC 60947-1	CISPR11, ambience A (industrial sector)
EMI immunity acc. to IEC 60947-1	corresponds to degree of severity 3, ambience A (industrial sector)
Conducted interference • due to burst acc. to IEC 61000-4-4 • due to conductor-earth surge acc. to IEC 61000-4-5 • due to conductor-conductor surge acc. to IEC 61000-4-5	2 kV on voltage supply, inputs and outputs 2 kV (U > 24 V DC) 1 kV (U > 24 V DC)
Field-bound parasitic coupling acc. to IEC 61000-4-3	80 MHz ... 1 GHz 10 V/m, 1.4 GHz ... 2 Hz 3 V/m, 2 GHz ... 2.7 GHz 1 V/m

Safety related data

Safety device type acc. to IEC 61508-2	Type B
SIL Claim Limit (subsystem) acc. to EN 62061	SILCL 3
Performance level (PL) acc. to EN ISO 13849-1	e
Category acc. to EN ISO 13849-1	4

Stop category acc. to DIN EN 60204-1	0
Safe failure fraction (SFF)	99.5 %
Average diagnostic coverage level (DCavg)	99 %
Failure rate [FIT] - at rate of recognizable hazardous failures (λ_{dd}) - at rate of non-recognizable hazardous failures (λ_{du})	3 800 FIT 25 FIT
PFHD with high demand rate acc. to EN 62061	0.0000000018 1/h
PFDavg with low demand rate acc. to IEC 61508	0.00008
Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508	0.00008 1/y
MTBF	14 y
MTTFd	31 y
Hardware fault tolerance acc. to IEC 61508	1
T1 value for proof test interval or service life acc. to IEC 61508	10 y
Safe state	Load circuit open
Protection against electrical shock	finger-safe

Main circuit

Number of poles for main current circuit	3
Design of the switching contact	electromechanical
Adjustable pick-up value current of the current-dependent overload release	2.4 ... 16 A
Type of the motor protection	solid-state
Operating voltage rated value	200 ... 400 V
Operating frequency 1 rated value	50 Hz
Operating frequency 2 rated value	60 Hz
Relative positive tolerance of the operating frequency	10 %
Relative negative tolerance of the operating frequency	10 %
Operating range relative to the operating voltage at AC at 50 Hz	200 ... 440 V
Operating current - at AC-3 - at 400 V rated value	16 A
Operating power - at AC-3 - at 400 V rated value	7.5 kW
Operating power for three-phase motors at 400 V at 50 Hz	1.1 ... 7.5 kW

Inputs/ Outputs

Product function	
• digital inputs parameterizable	Yes
• digital outputs parameterizable	No
Number of digital inputs	2
Number of sockets	
• for digital output signals	0
• for digital input signals	0
Supply voltage	
Type of voltage of the supply voltage	DC
Supply voltage 1 at DC	24 ... 24 V
Supply voltage 1 at DC rated value	
• minimum permissible	20.4 V
• maximum permissible	28.8 V
Control circuit/ Control	
Type of voltage of the control supply voltage	DC
Control supply voltage at DC	
• rated value	21.6 ... 26.4 V
Control supply voltage 1	
• at DC rated value	21.6 ... 26.4 V
• at DC	24 ... 24 V
Installation/ mounting/ dimensions	
Mounting position	vertical, horizontal
Mounting type	pluggable on terminal module
Height	290 mm
Width	65 mm
Depth	150 mm
Ambient conditions	
Installation altitude at height above sea level	
• maximum	2 000 m
Ambient temperature	
• during operation	0 ... 60 °C
• during storage	-40 ... +70 °C
• during transport	-40 ... +70 °C
Relative humidity during operation	5 ... 95 %
Communication/ Protocol	
Protocol is supported	
• PROFIBUS DP protocol	Yes
• PROFINET protocol	Yes
Design of the interface	
• PROFINET protocol	Yes

Product function Bus communication	Yes
Protocol is supported • AS-Interface protocol	No
address range memory of address range • of the inputs • of the outputs	2 byte 2 byte
Type of electrical connection • of the communication interface • for communication transmission	via backplane bus via backplane bus

Connections/ Terminals

Type of electrical connection • for main current circuit	screw-type terminals
Type of electrical connection • 1 for digital input signals • 2 for digital input signals	using control module using control module
Type of electrical connection • at the manufacturer-specific device interface • for main energy infeed • for load-side outgoing feeder • for main energy transmission • for supply voltage line-side • for supply voltage transmission	plug screw-type terminals Screw-type terminals via energy bus via backplane bus via backplane bus

UL/CSA ratings

Operating voltage • at AC at 60 Hz acc. to CSA and UL rated value	600 V
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Certificates/ approvals

General Product Approval	EMC	Functional Safety/Safety of Machinery
 CCC  CSA  UL  EAC  RCM		Type Examination Certificate

Declaration of Conformity	Test Certificates	other
 EG-Konf.	Miscellaneous Type Test Certificates/Test Report	Confirmation

Further information

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

www.siemens.com/ic10

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RK1301-0CB13-0AA4>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RK1301-0CB13-0AA4>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RK1301-0CB13-0AA4>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RK1301-0CB13-0AA4&lang=en

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