

**SIMOTICS 1FK7103-2AF71-1RB0
SP3432704145**

SIMOTICS S SYNCHRONOUS MOTOR
1FK7-CT PN=4.4KW; UDC=600V
M0=36NM (100K); NN=3000RPM;
NATURALLY COOLED
IMB 5 DESIGN (IM V1, IM V3) FLANGE 1
POWER CONNECTOR ROTATABLE
ABSOLUTE ENCODER 20-BIT +12-BIT
MULTI-TURN WITH DRIVE-CLIQ
INTERFACE (ENCODER AM20DQI)
SHAFT WITH FEATHER KEY,
TOLERANCE N WITH HOLDING BRAKE
IP64 DEGREE OF PROTECTION
MLFB: 1FK7103-2AF71-1RB0
MAKE: M/S SIEMENS

Note to Bidder:

1. Reference data sheet is attached; any deviations shall be mentioned without fail.
2. Equivalent material is not acceptable as it meant for one to one replacement for existing installation.

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14:08:01 +05'30'

Data sheet for SIMOTICS S-1FK7



MLFB-Ordering data1FK7103-2AF71-1RB0

Client order no. :
Order no. :
Offer no. :
Remarks :

Item no. :
Consignment no. :
Project :

Engineering data		Mechanical data	
Rated speed (100 K)	3000 rpm	Motor type	Permanent-magnet synchronous motor
Number of poles	8	Motor type	Compact
Rated torque (100 K)	14.0 Nm	Shaft height	100
Rated current	11.5 A	Cooling	Natural cooling
Static torque (60 K)	30.00 Nm	Radial runout tolerance	0.050 mm
Static torque (100 K)	36.00 Nm	Concentricity tolerance	0.10 mm
Stall current (60 K)	21.00 A	Axial runout tolerance	0.10 mm
Stall current (100 K)	26.00 A	Vibration severity grade	Grade A
Moment of inertia	112.000 kgcm²	Connector size	1.5
Efficiency	93.0 %	Degree of protection	IP64
Physical constants		Design acc. to Code I	IM B5 (IM V1, IM V3)
Torque constant	1.39 Nm/A	Temperature monitoring	Pt1000 temperature sensor
Voltage constant at 20° C	89.5 V/1000*min ⁻¹	Electrical connectors	Connectors for signals and power rotatable
Winding resistance at 20° C	0.09 Ω	Color of the housing	Standard (Anthracite RAL 7016)
Rotating field inductance	2.4 mH	Holding brake	with holding brake
Electrical time constant	27.00 ms	Shaft end	Feather key
Mechanical time constant	1.46 ms	Encoder system	Encoder AM20DQI: absolute encoder 20 bits (resolution 1048576, encoder-internal 512 S/R) + 12 bits multi-turn (traversing range 4096 revolutions)
Thermal time constant	65 min		
Shaft torsional stiffness	108000 Nm/rad		
Net weight of the motor	33.0 kg		



Figure similar

MLFB-Ordering data 1FK7103-2AF71-1RB0

Optimum operating point		Recommended Motor Module	
Optimum speed	2500 rpm	Rated inverter current	30 A
Optimum power	5.4 kW	Maximum inverter current	90 A
Limiting data		Maximum torque	108.00 Nm
Max. permissible speed (mech.)	5000 rpm		
Max. permissible speed (inverter)	5000 rpm		
Maximum torque	108.0 Nm		
Maximum current	84.0 A		
Holding brake			
Holding brake version	Permanent-magnet brake		
Holding torque	43.0 Nm		
Power supply voltage	DC 24 V ± 10 %		
Coil current	1.0 A		
Opening time	300 ms		
Closing time	70 ms		
Highest braking work	3380 J		

**COMMUNICATION PROCESSOR -CP5711
SP3005103006**

Communications processor CP 5711 USB adapter (USB V2.0) for connection of a PG or Notebook to PROFIBUS or MPI; contain 2 m USB cable.

MLFB: 6GK1571-1AA00

MAKE: M/S SIEMENS

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product type designation



CP 5711

Communications processor CP 5711 USB adapter (USB V2.0) for connection of a PG or Notebook to PROFIBUS or MPI; contain 2 m USB cable.

transfer rate

transfer rate	
at the 1st interface / according to PROFIBUS	9.6 kbit/s ... 12 Mbit/s

interfaces

number of electrical connections	
at the 1st interface / according to PROFIBUS	1
for power supply	1
number of interfaces / according to USB	1
type of electrical connection	
at the 1st interface / according to PROFIBUS	9-pin Sub-D socket (RS 485)
for power supply	2-pole terminal block
of the USB interface	Standard-B socket with mechanical interlock
standard for interfaces / USB 2.0	Yes

supply voltage, current consumption, power loss

type of voltage / of the supply voltage	DC
type of voltage supply / optional external power supply	Yes
supply voltage	
from USB	5 V
external	24 V
external	18 ... 30 V
note	Supplied directly from USB provided that supply from PC is adequate; alternative external supply is possible
relative symmetrical tolerance / at DC	
at 5 V	5 %
at 24 V	5 %
consumed current	
from USB	0.5 A
from external supply voltage / at DC / at 24 V / maximum	0.3 A
power loss [W]	2.5 W

ambient conditions

ambient temperature	
during operation	0 ... 60 °C
during storage	-40 ... +60 °C
during transport	-40 ... +60 °C
relative humidity / at 25 °C / without condensation / during operation / maximum	85 %
protection class IP	IP20

design, dimensions and weights

module format	USB V2.0 adapter
width	85 mm

height	137 mm
depth	35 mm
net weight	300 g
fastening method	Mounting on DIN rail with optional mounting rail support
fastening method / 35 mm top hat DIN rail mounting	Yes
product features, product functions, product components / general	
number of plug-in cards of same design / plug-in / per PC station	1
number of units / note	-
performance data / open communication	
software / for open communication / by means of SEND/RECEIVE / required	Yes, SOFTNET-PB DP / SOFTNET-PB DP Slave / SOFTNET-PB S7
number of possible connections / for open communication / by means of SEND/RECEIVE / maximum	50
performance data / PROFIBUS DP	
software / for DP master function / required	Yes, SOFTNET-PB DP
service / as DP master	
• DPV0	Yes
• DPV1	No
• DPV2	No
number of DP slaves / on DP master / operable	64
data volume	
• of the address range of the inputs / as DP master / total	15616 byte
• of the address range of the outputs / as DP master / total	15616 byte
• of the address range of the inputs / per DP slave	244 byte
• of the address range of the outputs / per DP slave	244 byte
• of the address range of the diagnostic data / per DP slave	244 byte
software / for DP slave function / required	Yes, SOFTNET-PB DP slave
service / as DP slave	
• DPV0	Yes
• DPV1	No
data volume	
• of the address range of the inputs / as DP slave / total	122 byte
• of the address range of the outputs / as DP slave / total	122 byte
performance data / S7 communication	
software / for S7 communication / required	Yes, SOFTNET-PB S7
number of possible connections / for S7/PG communication / maximum	8
performance data / multi-protocol mode	
number of configurable connections / per PC station	207
product functions / management, configuration, engineering	
configuration software / required	Included in the scope of delivery of the required software product
product functions / diagnostics	
product function	
• port diagnostics	Yes
standards, specifications, approvals	
standard	
• for EMC	2004/108/EC
• for safety / from CSA and UL	CAN/CSA C22.2 & UL 60950-1
• for emitted interference	EN 61000-6-3, EN 61000-6-4
• for interference immunity	EN 61000-6-1, EN 61000-6-2
certificate of suitability	
• CE marking	Yes
• C-Tick	Yes
• CCC / for hazardous zone according to GB standard	Yes; GB3836.1, GB3836.8
• CCC / for hazardous zone according to GB standard / as marking	Ex nA IIC T4 Gc
accessories	
accessories	optional: MPI cable, mounting rail support
further information / internet links	
internet link	
• to web page: selection aid TIA Selection Tool	http://www.siemens.com/tia-selection-tool

- to website: Industrial communication
- to website: Industry Mall
- to website: Information and Download Center
- to website: Image database
- to website: CAX-Download-Manager
- to website: Industry Online Support

<http://www.siemens.com/simatic-net>
<http://www.siemens.com/industrial-controls/mall>
<http://www.siemens.com/industry/infocenter>
<http://automation.siemens.com/bilddb>
<http://www.siemens.com/cax>
<https://support.industry.siemens.com>

security information

security information

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Approvals / Certificates

General Product Approval



[Manufacturer Declaration](#)



[Declaration of Conformity](#)



General Product Approval

EMV

For use in hazardous locations



[KC](#)



[CCC-Ex](#)

Environment

[Confirmation](#)



last modified:

3/25/2024

PROFIBUS REPEATER
SP3005143028

PROFIBUS REPEATER

SIMATIC DP, RS485 repeater for connection of PROFIBUS/MPI bus systems with
max. 31 nodes max. baud rate 12 Mbit/s, Degree of protection IP20

MLFB: 6ES7972-0AA02-0XA0

MAKE: M/S SIEMENS

Note to Bidder:

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SIMATIC DP, RS485 repeater For connection of PROFIBUS/MPI bus systems with max. 31 nodes max. baud rate 12 Mbit/s, Degree of protection IP20 Improved user handling

Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption, max.	100 mA; 100 mA without loads at PG/OP socket; 130 mA load at PG/OP socket (5 V/90 mA); 200 mA load at PG/OP socket (24 V/100 mA)
Power loss	
Power loss, typ.	0.7 W
Interfaces	
PROFIBUS DP	
• Transmission rate, max.	12 Mbit/s; 9.6 kbit/s to 12 Mbit/s
Degree and class of protection	
IP degree of protection	IP20
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Relative humidity	
• Operation, max.	95 %; at 25 °C
connection method	
Design of electrical connection for supply voltage	Terminal module
Design of electrical connection for PROFIBUS cables	2 terminal blocks
Dimensions	
Width	45 mm
Height	128 mm
Depth	59.3 mm
Weights	
Weight, approx.	350 g

last modified: 8/21/2023 

**SIMATIC DP, DP/DP COUPLER
SP3005101225**

SIMATIC DP, DP/DP COUPLER
COUPLING MODULE FOR CONNECTING OF TWO
PROFIBUS DP NETWORKS REDUNDANT CURRENT INFEED
MLFB: 6ES7158-0AD01-0XA0
Make: Siemens

Note to Bidder:

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Figure similar

SIMATIC DP, DP/DP coupler Coupling module for connecting of two PROFIBUS DP networks redundant current infeed

Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption, typ.	90 mA
Power loss	
Power loss, typ.	2 W
Protocols	
PROFIBUS DP	Yes
AS-Interface	No
Interrupts/diagnostics/status information	
Status indicator	Yes
Diagnostics function	Yes
Degree and class of protection	
IP degree of protection	IP20
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
Dimensions	
Width	40 mm
Height	127 mm
Depth	117 mm

last modified: 8/8/2023 

**COMMUNICATIONS PROCESSOR CP 443
SP3005103010**

COMMUNICATIONS PROCESSOR CP 443-
1 ADVANCED 1X 10/100/1000 MBPS, 4X
10/100 MBPS (IE SWITCH) RJ45 PORTS;
ISO; TCP; UDP; PROFINET IO
CONTROLLER; S7 COMMUNICATION;
OPEN COMMUNICATION
(SEND/RECEIVE) S7 ROUTING; IP
CONFIGURATION VIA DHCP/BLOCK; IP
ACCESS CONTROL LIST; TIME-OF-DAY
SYNCHRONIZATION; EXTENDED WEB
DIAGNOSTICS; FAST STARTUP;
PROFIENERGY SUPPORT; IP ROUTING;
FTP; WEB SERVER; EMAIL; PLEASE NOTE
SIOS ID: 109799025
MLFB: 6GK7443-1GX30-0XE0
Make: Siemens

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Product type designation

CP 443-1 Advanced

Communications processor CP 443-1 Advanced 1x 10/100/1000 Mbit/s, 4x 10/100 Mbit/s (IE switch) RJ45 ports; ISO; TCP; UDP; PROFINET IO controller; S7 communication; Open Communication (SEND/RECEIVE); S7 routing; IP configuration via DHCP/block; IP Access Control List; Time synchronization; extended web diagnostics; Fast Startup; PROFINET energy support; IP routing; FTP; Web server; E-mail; PROFINET CBA, security



Transfer rate

Transfer rate	
• at the 1st interface	10 ... 1000 Mbit/s
• at the 2nd interface	10 ... 100 Mbit/s

Interfaces

Number of interfaces / acc. to Industrial Ethernet	5
Number of electrical connections	
• at the 1st interface / acc. to Industrial Ethernet	1
• at the 2nd interface / acc. to Industrial Ethernet	4
Type of electrical connection	
• at the 1st interface / acc. to Industrial Ethernet	RJ45 port
• at the 2nd interface / acc. to Industrial Ethernet	RJ45 port
design of the removable storage / C-PLUG	Yes

Supply voltage, current consumption, power loss

Type of voltage / of the supply voltage	DC
Supply voltage / 1 / from backplane bus	5 V
Relative symmetrical tolerance / at DC	

• at 5 V	5 %
Consumed current	
• from backplane bus / at DC / at 5 V / typical	1.8 A
Power loss [W]	9 W

Ambient conditions

Ambient temperature	
• during operation	0 ... 60 °C
• during storage	-40 ... +70 °C
• during transport	-40 ... +70 °C
Relative humidity	
• at 25 °C / without condensation / during operation / maximum	95 %
Protection class IP	IP20

Design, dimensions and weights

Module format	Compact module S7-400 single width
Width	25 mm
Height	290 mm
Depth	210 mm
Net weight	0.7 kg

Product features, product functions, product components / general

Number of units	
• per CPU / maximum	14
• Note	max. 4 as PN IO ctrl.

Performance data / open communication

Number of possible connections / for open communication / by means of SEND/RECEIVE blocks / maximum	64
Amount of data	
• as user data per ISO connection / for open communication / by means of SEND/RECEIVE blocks / maximum	8 Kibyte
• as user data per ISO on TCP connection / for open communication / by means of SEND/RECEIVE blocks / maximum	8 Kibyte
• as user data per TCP connection / for open communication / by means of SEND/RECEIVE blocks / maximum	8 Kibyte
• as user data per UDP connection / for open IE communication / by means of SEND/RECEIVE blocks / maximum	2 Kibyte
Number of possible connections / for open communication	
• by means of T blocks / maximum	64

Amount of data	
• as user data per ISO on TCP connection / for open communication / by means of T blocks / maximum	1452 byte
Performance data / S7 communication	
Number of possible connections / for S7 communication	
• maximum	128
• with PG connections / maximum	2
• Note	when using several CPUs
Performance data / multi-protocol mode	
Number of active connections / with multi-protocol mode	128
Performance data / IT functions	
Number of possible connections	
• as client / by means of FTP / maximum	20
• as server / by means of FTP / maximum	10
Number of possible connections	
• as server / by means of HTTP / maximum	4
• as e-mail client / maximum	1
Amount of data / as user data for email / maximum	8 Kibyte
Storage capacity / of the user memory	
• as flash memory file system	30 Mibyte
• as RAM	16 Mibyte
• additionally buffered as RAM via central backup battery	512 Kibyte
Number of possible write cycles / of the flash memory cells	100000
Performance data / PROFINET communication / as PN IO controller	
Product function / PROFINET IO controller	Yes
Number of PN IO devices / on PROFINET IO controller / usable / total	128
Number of PN IO IRT devices / on PROFINET IO controller / usable	64
Number of external PN IO lines / with PROFINET / per rack	4
Amount of data	
• as user data for input variables / as PROFINET IO controller / maximum	4 Kibyte
• as user data for input variables / as PROFINET IO controller / maximum	4 Kibyte
• as user data for input variables per PN IO device / as PROFINET IO controller / maximum	1433 byte

- as user data for output variables per PN IO device / as PROFINET IO controller / maximum
- as user data for input variables per PN IO device / for each sub-module as PROFINET IO controller / maximum
- as user data for output variables per PN IO device / for each sub-module as PROFINET IO controller / maximum

1433 byte

240 byte

240 byte

Performance data / PROFINET CBA

Number of remote connection partners / with PROFINET CBA	64
Number of connections / with PROFINET CBA / total	600
Amount of data	
• as user data for digital inputs / with PROFINET CBA / maximum	8 Kibyte
• as user data for digital outputs / with PROFINET CBA / maximum	8 Kibyte
• as user data for arrays and data types / in the case of acyclic transmission / with PROFINET CBA / maximum	8 Kibyte
• as user data for arrays and data types / with PROFINET CBA / with cyclical transfer / maximum	250 byte
• as user data for arrays and data types / with PROFINET CBA / in the case of local interconnection / maximum	2400 byte

Performance data / PROFINET CBA / remote interconnection / with acyclic transfer

Refresh time / of the remote interconnections / in the case of acyclic transmission / with PROFINET CBA	100 ms
Number of remote connections to input variables / in the case of acyclic transmission / with PROFINET CBA / maximum	150
Number of remote connections to output variables / in the case of acyclic transmission / with PROFINET CBA / maximum	150
Amount of data	
• as user data for remote interconnections with input variables / in the case of acyclic transmission / with PROFINET CBA	8 Kibyte
• as user data for remote interconnections with output variables / in the case of acyclic transmission / with PROFINET CBA	8 Kibyte

Performance data / PROFINET CBA / remote interconnection / with cyclical transfer

Refresh time / of the remote interconnections / with PROFINET CBA / with cyclical transfer	10 ms
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Number of remote connections to input variables / with PROFINET CBA / with cyclical transfer / maximum	250
Number of remote connections to output variables / with PROFINET CBA / with cyclical transfer / maximum	250
Amount of data • as user data for remote interconnections with input variables / with PROFINET CBA / with cyclical transfer / maximum • as user data for remote interconnections with output variables / with PROFINET CBA / with cyclical transfer / maximum	2000 byte 2000 byte

Performance data / PROFINET CBA / HMI variables via PROFINET / acyclic

Number of connectable HMI stations / for HMI variables / in the case of acyclic transmission / with PROFINET CBA	3
Refresh time / of the HMI variables / in the case of acyclic transmission / with PROFINET CBA	500 ms
Number of HMI variables / in the case of acyclic transmission / with PROFINET CBA / maximum	200
Amount of data / as user data for HMI variables / in the case of acyclic transmission / with PROFINET CBA / maximum	8 Kibyte

Performance data / PROFINET CBA / device-internal interconnections

Number of internal connections / with PROFINET CBA / maximum	300
Amount of data / of the internal connections / with PROFINET CBA / maximum	2400 byte

Performance data / PROFINET CBA / interconnections to constants

Number of connections with constants / with PROFINET CBA / maximum	500
Amount of data / as user data for interconnections with constants / with PROFINET CBA / maximum	4000 byte

Performance data / PROFINET CBA / PROFIBUS proxy functionality

Product function / with PROFINET CBA / PROFIBUS proxy functionality	No
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Product functions / management, configuration, engineering

Product function / MIB support	Yes
Protocol / is supported • SNMP v1 • SNMP v3 • DCP • LLDP	Yes Yes Yes Yes

Configuration software	
• required	STEP 7 V5.5 SP3 or higher / STEP 7 Professional V12 (TIA Portal) or higher
• for PROFINET CBA / required	SIMATIC iMap V3.0 SP1 and higher
Product functions / Diagnostics	
Product function / Web-based diagnostics	Yes
Product functions / Switch	
Product feature / Switch	Yes
Product function	
• switch-managed	No
• with IRT / PROFINET IO switch	Yes
• Configuration with STEP 7	Yes
Product functions / redundancy	
Product function	
• Ring redundancy	Yes
• Redundancy manager	Yes
Protocol / is supported / Media Redundancy Protocol (MRP)	Yes
Product functions / Security	
Firewall version	stateful inspection
Product function / with VPN connection	IPSec
Type of encryption algorithms / with VPN connection	AES-256, AES-192, AES-128, 3DES-168, DES-56
Type of authentication procedure / with VPN connection	Preshared key (PSK), X.509v3 certificates
Type of hashing algorithms / with VPN connection	MD5, SHA-1
Number of possible connections / with VPN connection	32
Product function	
• password protection for Web applications	Yes
• ACL - IP-based	Yes
• ACL - IP-based for PLC/routing	Yes
• switch-off of non-required services	Yes
• Blocking of communication via physical ports	Yes
• log file for unauthorized access	No
Product functions / time	
Product function / SICLOCK support	Yes
Product function / pass on time synchronization	Yes
Protocol / is supported	
• NTP	Yes
Further information / Internet-Links	
Internet-Link	

- to website: Selector SIMATIC NET SELECTION TOOL
- to website: Industrial communication
- to website: Industry Mall
- to website: Information and Download Center
- to website: Image database
- to website: CAX Download Manager
- to website: Industry Online Support

<http://www.siemens.com/snst>

<http://www.siemens.com/simatic-net>

<https://mall.industry.siemens.com>

<http://www.siemens.com/industry/infocenter>

<http://automation.siemens.com/bilddb>

<http://www.siemens.com/cax>

<https://support.industry.siemens.com>

Security information

Security information

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12/16/2019 