## **SIEMENS**

## Data sheet

## 6ES7513-1RL00-0AB0



your Siemens representative

General information	
Product type designation	CPU 1513R-1 PN
HW functional status	FS01
Firmware version	V2.8
Product function	
● I&M data	Yes; I&M0 to I&M3
<ul> <li>Isochronous mode</li> </ul>	No
Engineering with	
<ul> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V16 (FW V2.8) / V15.1 (FW V2.6) or higher
Display	
Screen diagonal [cm]	3.45 cm
Control elements	
Number of keys	6
Mode selector switch	1
Supply voltage	
Type of supply voltage	24 V DC
permissible range, lower limit (DC)	19.2 V

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permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Mains buffering	
Mains/voltage failure stored energy time	5 ms
Input current	
Current consumption (rated value)	0.7 A
Inrush current, max.	1.9 A; Rated value
l²t	0.02 A <sup>2</sup> ·s
Power loss	
Power loss, typ.	5.7 W
Memory	
Number of slots for SIMATIC memory card	1
SIMATIC memory card required	Yes
Work memory	
<ul> <li>integrated (for program)</li> </ul>	300 kbyte
<ul> <li>integrated (for data)</li> </ul>	1.5 Mbyte
Load memory	
<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	32 Gbyte
Backup	
maintenance-free	Yes
CPU processing times	
for bit operations, typ.	80 ns
for word operations, typ.	96 ns
for fixed point arithmetic, typ.	128 ns
for floating point arithmetic, typ.	512 ns
CPU-blocks	
Number of elements (total)	2 000; Blocks (OB, FB, FC, DB) and UDTs
DB	
<ul> <li>Number range</li> </ul>	Number range: 1 to 59 999
• Size, max.	1.5 Mbyte; For non-optimized block accesses, the max. size of the DB is 64 KB
FB	
Number range	0 65 535
• Size, max.	300 kbyte
FC	
Number range	0 65 535
• Size, max.	300 kbyte
OB	
• Size, max.	300 kbyte
Number of free cycle OBs	100
Number of time alarm OBs	20

<ul> <li>Number of delay alarm OBs</li> </ul>	20
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	20
<ul> <li>Number of process alarm OBs</li> </ul>	50
Number of startup OBs	100
<ul> <li>Number of asynchronous error OBs</li> </ul>	4
<ul> <li>Number of synchronous error OBs</li> </ul>	2
<ul> <li>Number of diagnostic alarm OBs</li> </ul>	1
Nesting depth	
• per priority class	24
Counters, timers and their retentivity	
S7 counter	
• Number	2 048
Retentivity	
— adjustable	Yes
IEC counter	
Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes
S7 times	
Number	2 048
Retentivity	
— adjustable	Yes
IEC timer	
Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	128 kbyte
Flag	
• Number, max.	16 kbyte
<ul> <li>Number of clock memories</li> </ul>	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks	
<ul> <li>Retentivity adjustable</li> </ul>	Yes
Retentivity preset	No
Local data	
<ul> <li>per priority class, max.</li> </ul>	64 kbyte; max. 16 KB per block
Address area	
Number of IO modules	2 048; max. number of modules / submodules
I/O address area	
• Inputs	32 kbyte; All inputs are in the process image

Outputs	32 kbyte; All outputs are in the process image
per integrated IO subsystem	
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
Subprocess images	
<ul> <li>Number of subprocess images, max.</li> </ul>	32
Hardwara configuration	
Hardware configuration Number of distributed IO systems	1
Number of IO Controllers	
• integrated	1
Time of day	
Clock	
• Type	Hardware clock
Backup time	6 wk; At 40 °C ambient temperature, typically
• Deviation per day, max.	10 s; Typ.: 2 s
Operating hours counter	
Number	16
Clock synchronization	
<ul> <li>supported</li> </ul>	Yes
<ul> <li>on Ethernet via NTP</li> </ul>	Yes
Interfaces	
Interfaces Number of PROFINET interfaces	1
	1
Number of PROFINET interfaces	1
Number of PROFINET interfaces 1. Interface	1 Yes; X1
Number of PROFINET interfaces 1. Interface Interface types	
Number of PROFINET interfaces          1. Interface         Interface types         • RJ 45 (Ethernet)	Yes; X1
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports	Yes; X1 2
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch	Yes; X1 2
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols	Yes; X1 2 Yes
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • IP protocol	Yes; X1 2 Yes Yes; IPv4
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • IP protocol         • PROFINET IO Controller	Yes; X1 2 Yes Yes Yes; IPv4 Yes
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • IP protocol         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication	Yes; X1 2 Yes Yes IPv4 Yes No
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • IP protocol         • PROFINET IO Controller         • PROFINET IO Device	Yes; X1 2 Yes Yes Yes; IPv4 Yes No Yes; Only Server
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • IP protocol         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication	Yes; X1 2 Yes Yes Yes; IPv4 Yes No Yes; Only Server Yes
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • IP protocol         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Web server	Yes; X1 2 Yes Yes Yes; IPv4 Yes No Yes; Only Server Yes No
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • IP protocol         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Web server         • Media redundancy	Yes; X1 2 Yes Yes Yes; IPv4 Yes No Yes; Only Server Yes No
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • IP protocol         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Web server         • Media redundancy         PROFINET IO Controller	Yes; X1 2 Yes Yes Yes; IPv4 Yes No Yes; Only Server Yes No
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • IP protocol         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         Services         — PG/OP communication	Yes; X1 2 Yes Yes Yes; IPv4 Yes No Yes; Only Server Yes No Yes; MRP Automanager according to IEC 62439-2 Edition 2.0
Number of PROFINET interfaces         1. Interface         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • IP protocol         • PROFINET IO Controller         • PROFINET IO Device         • SIMATIC communication         • Web server         • Media redundancy         PROFINET IO Controller         Services	Yes; X1 2 Yes Yes Yes; IPv4 Yes No Yes; Only Server Yes No Yes; MRP Automanager according to IEC 62439-2 Edition 2.0

— IRT	No
— MRP	Yes; Only Manager Auto, max. 50 nodes; only 16 are
	recommended, however
— MRPD	No
— PROFlenergy	Yes
- Number of connectable IO Devices, max.	64

Interface types	
RJ 45 (Ethernet)	
• 100 Mbps	Yes
Autonegotiation	Yes
Autocrossing	Yes
<ul> <li>Industrial Ethernet status LED</li> </ul>	Yes
Protocols	
Number of connections	
<ul> <li>Number of connections, max.</li> </ul>	88
<ul> <li>Number of connections reserved for ES/HMI/web</li> </ul>	10
Redundancy mode	
Media redundancy	
— MRP	Yes; Manager Auto is permanently set in TIA. Max. 50 nodes are possible, 16 are recommended
— MRPD	No
— Switchover time on line break, typ.	200 ms; PROFINET MRP
— Number of stations in the ring, max.	50; Only 16 are recommended, however
SIMATIC communication	
<ul> <li>S7 communication, as server</li> </ul>	Yes
<ul> <li>S7 communication, as client</li> </ul>	No
Open IE communication	
• TCP/IP	Yes
— Data length, max.	64 kbyte
<ul> <li>— several passive connections per port, supported</li> </ul>	Yes
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	64 kbyte
• UDP	Yes
— Data length, max.	2 kbyte; 1 472 bytes for UDP broadcast
— UDP multicast	Yes; Max. 5 multicast circuits
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes

HTTP         No           HTTP         No           OPC UA         No           • OPC UA Sterver         No           • OPC UA Sterver         No           • MODBUS         Yes; MODBUS TCP           Sochronus mode         Equidistance           Equidistance         No           Softmessage functions         32           Yess age functions         Yes           Number of configurable program messages in RUN, max.         2000 Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH           Number of configurable program messages in RUN, max.         2 500           Number of program alarms         2 500           • Number of program alarms         300           • Number of program alarms         300           • Number of alarms for system diagnostics         100           Fost control socialise block, ProDiag or GRAPH         Status block           Single step         No           Number of breakpoints         S Breakpoints are only supported in RUN-Solo status           Status block         Yes (up to 8 simultaneously           Status control variables, max.         200: per job           • Variables         Inputs/outputs, memory bits, DEs, distributed I/Os, timers, counters           • Number of variables, ma	Web server	
• HTPSNoOPC UANo• OPC UA ServerNoFuther protocolsYes; MODBUS TCPProtocolsNoSectornous modeSectornous modeEquidistanceNoProgram alams22Program alamsYesNumber of login statons for message functions, max.S000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPHNumber of login statons for program messages, max.S000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPHNumber of login statons for system diagnostics300• Number of simultaneously active program alarms • Number of airms for system diagnostics300• Number of simultaneously active program diagnostics300• Number of airms for system diagnostics300• Number of airms for system diagnostics300• Number of breakpoints8; Breakpoints are only supported in RUN-Solo status• Status/control variables, max. - of which status variables, max.Yes• Aumber of variables, max. - of which status variables, max. - of which status variables, max.200; per job• Forcing • Forcing, variables, max. - of which status, max.Yes• Forcing • Forcing, variables, max.9• Prosent • Forcing, variables, max.9• Prosent • Number of variables, max.9• Status for straibles, max. • of which control variables, max.9• Prosent • Forcing, variables, max.9• Prosent • Forcing, variables, max.9• Prosen		No
OPC UA           • OPC UA Client         No           • OPC UA Server         No           • PCD UA Server         No           Further protocols		No
• OPC UA ClientNo• OPC UA ServerNoFurther protocolsYes; MODBUS TCP• MODBUSYes; MODBUS TCPsochronous modeNoEquidistanceNoSofter ProtocolsSofter ProtocolsProgram alarmsS 200; Program messages are generated by the "Program_Alarm" block. ProDiag or GRAPHNumber of configurable program messages, max.5 000; Program messages are generated by the "Program_Alarm" block. ProDiag or GRAPHNumber of configurable program messages in RUN, max.300Number of program alarms300• Number of program alarms300• Number of program alarms100• Number of alarms for system diagnostics100Status blockYes; up to 8 simultaneouslySingle stepNoNumber of variables, max.200; per job• Status/stortord variables, max.200; per job• Status variables, max.200; per job• of which status variables, max.200; per job• ForcingYes• ForcingYes• Forcing, variables, max.200; per job• ForcingYes• Propring, variables, max.200• Number of variables, max.200• Program, variables, max.200• Program, variables, max.200• Or which control variables, max.200• Program, variables, max.200• Or which control variables, max.200• Or which control variables, max.200• Or which powerfail-proofYes<		
OPC UA Server         No           Further protocols         Yes: MODBUS TCP           sochronous mode         No           Equidistance         No           Sochronous mode         Sochronous mode           Equidistance         No           Some of login stations for message functions, max.         32           Program alarms         Yes           Number of login stations for messages, max.         5 000; Program messages are generated by the "Program Alarm" block, ProDiag or GRAPH           Number of loadable program messages in RUN, max.         2 500           Number of alarms for system diagnostics         300           Number of alarms for system diagnostics         300           Number of alarms for system diagnostics         Single step           Number of alarms for system diagnostics         Single step           Joint commission (Team Engineering)         No           Status block         Yes: up to 8 simultaneously           Single step         No           Number of variables, max.         -           - of which status variables, max.         200; per job           Status/control variables, max.         200; per job           Forcing         Yes           - of which status variables, max.         200; per job           F		Νο
Futher protocols           • MODBUS         Yes; MODBUS TCP           sochronous mode         No           Equidistance         No           S7 message functions         32           Program alarms         Yes           Number of configurable program messages, max.         5000. Program messages are generated by the "Program Alarm" block, ProDiag or GRAPH           Number of configurable program messages in RUN, max.         2           Number of odable program messages in RUN, max.         300           Number of simultaneously active program alarms         300           • Number of alarms for system diagnostics         100           Pest commissioning functions         Status block           Versi up to 8 simultaneously         Yes; up to 8 simultaneously           Status block         Yes           Number of variables, max.         200; per job           • Variables         Inputs/outputs, memory bits, DBs, distributed i/Os, timers, counters           • Number of variables, max.		
• MODBUS         Yes; MODBUS TCP           sochronous mode         No           Equidistance         No           Symmetry of login stations for message functions, max.         32           Program alarms         Yes           Number of login stations for messages, max.         5000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH           Number of login binultaneously active program alarms         2 500           • Number of program alarms         300           • Number of program diagnostics         100           Fest commissioning functions         Yes; up to 8 simultaneously           Status block         Yes; up to 8 simultaneously           Status/control         Kes instructure of breakpoints           • Status/control variable         Yes           • Status/control variables, max.		
Schronous mode           Equidistance         No           S7 message functions         32           Program alarms         Yes           Number of login stations for messages functions, max.         32           Program alarms         Yes           Number of loadable program messages, max.         5000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH           Number of loadable program messages in RUN, max.         2500           Number of simultaneously active program alarms         300           • Number of alarms for system diagnostics         100           Pest commission (Team Engineering)         No           Status block         Yes; up to 8 simultaneously           Status block         Yes           Status block         Yes           Status block         Yes           Status block         Yes           Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Variables         Yes           - of which status variables, max.         200; per job           - of which status variables, max.         200; per job           - of which status variables, max.         200; per job           - of which status variables, max.         200           Prorcing         Yes		Yes: MODBUS TCP
Equidistance     No       S7 message functions     32       Program alarms     Yes       Number of configurable program messages, max.     5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH       Number of loadable program messages in RUN, max.     2 500       Number of simultaneously active program alarms     300       Number of simultaneously active program alarms     300       Number of alarms for system diagnostics     100       Test commission (Team Engineering)     No       Status block     Yes; up to 8 simultaneously       Single step     No       Number of breakpoints     8; Breakpoints are only supported in RUN-Solo status       Status/control     Yes       • Number of variables, max.     200; per job       • Or which control variables, max.     200; per job       • Forcing     Yes       • Forcing, variables, max.     200; per job       • Forcing     Yes       • Forcing, variables, max.     200; per job       • Rumber of entries, max.     1000       <		
S7 message functions         Number of login stations for message functions, max.       32         Program alarms       Yes         Number of configurable program messages, max.       5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH         Number of loadable program messages in RUN, max.       2 500         Number of loadable program messages in RUN, max.       300         Number of simultaneously active program alarms       300         • Number of alarms for system diagnostics       100         Test commissioning functions       300         Joint commission (Team Engineering)       No         Status block       Yes; up to 8 simultaneously         Single step       No         Number of breakpoints       B; Breakpoints are only supported in RUN-Solo status         Status/control       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         • Number of variables, max.       200; per job         • of which status variables, max.       200; per job         • of which control variables, max.       200; per job         • Forcing       Yes         • Forcing, variables, max.       200; per job         • Forcing, variables, max.       200;		
Number of login stations for message functions, max.         32           Program alarms         Yes           Number of configurable program messages, max.         5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH           Number of loadable program messages in RUN, max.         2 500           Number of simultaneously active program alarms         300           • Number of program alarms         300           • Number of alarms for system diagnostics         100           Test commissioning functions         2 simultaneously           Joint commission (Team Engineering)         No           Status block         Yes; up to 8 simultaneously           Single step         No           Number of variables         8; Breakpoints are only supported in RUN-Solo status           Status/control         Yes           • Status/control variables         Yes           • Variables         Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Number of variables, max.         200; per job           Forcing         Yes           • Forcing         Yes           • Forcing, variables, max.         200; per job           • Forcing         Yes           • Forcing, variables, max.         200; per job           • Forcing, vari	Equidistance	No
Number of login stations for message functions, max.         32           Program alarms         Yes           Number of configurable program messages, max.         5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH           Number of loadable program messages in RUN, max.         2 500           Number of simultaneously active program alarms         300           • Number of program alarms         300           • Number of alarms for system diagnostics         100           Test commissioning functions         2 simultaneously           Joint commission (Team Engineering)         No           Status block         Yes; up to 8 simultaneously           Single step         No           Number of variables         8; Breakpoints are only supported in RUN-Solo status           Status/control         Yes           • Status/control variables         Yes           • Variables         Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Number of variables, max.         200; per job           Forcing         Yes           • Forcing         Yes           • Forcing, variables, max.         200; per job           • Forcing         Yes           • Forcing, variables, max.         200           • Forcing, variables, ma	S7 message functions	
Number of configurable program messages, max.         5 000; Program messages are generated by the "Program Alarm" block, ProDiag or GRAPH           Number of loadable program messages in RUN, max.         2 500           Number of simultaneously active program alarms         300           Number of program alarms         300           Number of alarms for system diagnostics         100           Test commission (Team Engineering)           Status block         Yes; up to 8 simultaneously           Status/control         Xes           • Status/control variable         Yes           • Variables         Yes           • Of which status variables, max.         200; per job           • of which control variables, max.         200; per job           • Forcing         Yes           • Forcing, variables, max.         200; per job           • Number of variables, max.         200; per job           • Forcing         Yes           • Number of variables, max.         200; per job           • Number of variables, max.         200; per j		32
block, ProDiag or GRAPH           Number of loadable program messages in RUN, max.         2 500           Number of simultaneously active program alarms         300           Number of program alarms         300           Number of alarms for system diagnostics         100           Testcommissioning functions         100           Status block         Yes; up to 8 simultaneously           Single step         No           Number of breakpoints         8; Breakpoints are only supported in RUN-Solo status           Status/control         Yes           • Number of variables, max.         - of which status variables, max.           - of which status variables, max.         200; per job           • Forcing         Yes           • Forcing unables, max.         200; per job           • Number of variables, max.         200; per job           • of which status variables, max.         200; per job           • Forcing         Yes           • Forcing, variables, max.         200           • Number of variables, max.         200	Program alarms	Yes
max.       Image: Status of program alarms         Number of simultaneously active program alarms       300         Number of program alarms       300         Number of alarms for system diagnostics       100         Test commission functions         Joint commission (Team Engineering)       No         Status block       Yes; up to 8 simultaneously         Single step       No         Number of breakpoints       8; Breakpoints are only supported in RUN-Solo status         Status/control       -          • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         • Number of variables, max.       200; per job          - of which status variables, max.       200; per job          - of which status variables, max.       200; per job          - Forcing       Yes          Number of variables, max.       200; per job          - of which status variables, max.       200; per job          - of which status variables, max.       200; per job          Number of variables, max.       200          - of which control variables, max.       200          - of which control variables, max.       200          - of which opwerfail-pr	Number of configurable program messages, max.	
• Number of program alarms       300         • Number of alarms for system diagnostics       100         Test commission(feam Engineering)       No         Status block       Yes; up to 8 simultaneously         Single step       No         Number of breakpoints       8; Breakpoints are only supported in RUN-Solo status         Status/control       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         • Number of variables, max.       200; per job         — of which status variables, max.       200; per job         Forcing       Yes         • Forcing, variables       Peripheral inputs/outputs         • Number of variables, max.       200         • Porsing       Yes         • Forcing, variables, max.       200         • Forcing       Yes         • Romber of variables, max.       200         • Peripheral inputs/outputs       200         • Number of variables, max.       200         • Porsing, variables, max.       200         • Number of entries, max.       200         • present       Yes         • Number of entries, max.       1000         • of which powerfail-pro		2 500
• Number of alarms for system diagnostics       100         Test commission (Team Engineering)       No         Status block       Yes; up to 8 simultaneously         Single step       No         Number of breakpoints       8; Breakpoints are only supported in RUN-Solo status         Status/control       ************************************	Number of simultaneously active program alarms	
Test commissioning functions         Joint commission (Team Engineering)       No         Status block       Yes; up to 8 simultaneously         Single step       No         Number of breakpoints       8; Breakpoints are only supported in RUN-Solo status         Status/control       ************************************	<ul> <li>Number of program alarms</li> </ul>	300
Joint commission (Team Engineering)NoStatus blockYes; up to 8 simultaneouslySingle stepNoNumber of breakpoints8; Breakpoints are only supported in RUN-Solo statusStatus/controlYes• Status/control variableYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max.200; per job— of which status variables, max.200; per job— of which control variables, max.200; per jobForcingYes• Forcing, variables, max.200• Number of variables, max.200— of which control variables, max.200— of which status variables, max.200— of which control variables, max.200PorcingYes• Forcing, variablesPeripheral inputs/outputs• Number of variables, max.200Diagnostic bufferYes• presentYes• Number of entries, max.1 000— of which powerfail-proof500	<ul> <li>Number of alarms for system diagnostics</li> </ul>	100
Status block         Yes; up to 8 simultaneously           Single step         No           Number of breakpoints         8; Breakpoints are only supported in RUN-Solo status           Status/control         Yes           • Status/control variable         Yes           • Variables         Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Number of variables, max.         200; per job           – of which status variables, max.         200; per job           Forcing         Yes           • Forcing         Yes           • Forcing         Yes           • Forcing, variables, max.         200; per job           Forcing         Yes           • Forcing, variables, max.         200           • Forcing, variables, max.         200           • Peripheral inputs/outputs         200           • Number of variables, max.         200           • Peripheral inputs/outputs         200           • Number of entries, max.         200           • of which powerfail-proof         Yes           • of which powerfail-proof         500           Traces         Yes	Test commissioning functions	
Single step         No           Number of breakpoints         8; Breakpoints are only supported in RUN-Solo status           Status/control         Yes           • Status/control variable         Yes           • Variables         Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Number of variables, max.         200; per job           - of which status variables, max.         200; per job           - of which control variables, max.         200; per job           Forcing         Yes           • Forcing         Yes           • Forcing, variables, max.         200; per job           • Forcing, variables, max.         200; per job           • Forcing         Yes           • Forcing, variables, max.         200           • Peripheral inputs/outputs         200           Diagnostic buffer         200           • Number of variables, max.         200           • Peripheral inputs/outputs         200           Diagnostic buffer         1000           • Number of entries, max.         1000           • of which powerfail-proof         500		
Number of breakpoints         8; Breakpoints are only supported in RUN-Solo status           Status/control         Yes           • Status/control variable         Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Variables         Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           • Number of variables, max.         - of which status variables, max.           - of which control variables, max.         200; per job           Forcing         Yes           • Forcing, variables         Peripheral inputs/outputs           • Forcing, variables, max.         200           • Peripheral inputs/outputs         200           Diagnostic buffer         200           • present         Yes           • Number of entries, max.         1000           • of which powerfail-proof         500	Joint commission (Team Engineering)	
Status/control       Yes         • Status/control variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         • Number of variables, max.       200; per job         - of which status variables, max.       200; per job         - of which control variables, max.       200; per job         Forcing       Yes         • Forcing, variables, max.       200         • Peripheral inputs/outputs       200         • Number of variables, max.       200         • Number of entries, max.       1000         • Number of entries, max.       1000         • of which powerfail-proof       500         Traces       Yes	Joint commission (Team Engineering) Status block	Yes; up to 8 simultaneously
Status/control variableYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max of which status variables, max of which status variables, max.200; per job- of which control variables, max.200; per jobForcingYes• Forcing, variablesPeripheral inputs/outputs• Forcing, variables, max.200• Pripheral inputs/outputs200• Number of variables, max.200• presentYes• presentYes• present1000• number of entries, max.1000• of which powerfail-proof500	Joint commission (Team Engineering) Status block Single step	Yes; up to 8 simultaneously No
VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, counters• Number of variables, max of which status variables, max of which status variables, max.200; per job- of which control variables, max.200; per jobForcingYes• Forcing, variablesPeripheral inputs/outputs• Number of variables, max.200• Forcing, variables200• Forcing, variables, max.200• Number of variables, max.200• Number of variables, max.100• presentYes• present1 000- of which powerfail-proof500	Joint commission (Team Engineering) Status block Single step Number of breakpoints	Yes; up to 8 simultaneously No
counters• Number of variables, max.200; per job- of which status variables, max.200; per job- of which control variables, max.200; per jobForcing• ForcingYes• Forcing, variablesPeripheral inputs/outputs• Number of variables, max.200• Number of variables, max.200• Number of variables, max.100• Number of entries, max.1 000- of which powerfail-proof500	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status
- of which status variables, max.200; per job- of which control variables, max.200; per jobForcing• ForcingYes• Forcing, variablesPeripheral inputs/outputs• Number of variables, max.200Diagnostic buffer• presentYes• Number of entries, max.1000- of which powerfail-proof500	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes
- of which control variables, max.200; per jobForcingYes• Forcing, variablesPeripheral inputs/outputs• Number of variables, max.200Diagnostic buffer• presentYes• Number of entries, max.Yes• Of which powerfail-proof1000TracesSolo	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers,
Forcing       Yes         • Forcing, variables       Peripheral inputs/outputs         • Number of variables, max.       200         Diagnostic buffer       Yes         • present       Yes         • Number of entries, max.       1000         - of which powerfail-proof       500         Traces       Traces	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
• ForcingYes• Forcing, variablesPeripheral inputs/outputs• Number of variables, max.200Diagnostic bufferYes• presentYes• Number of entries, max.1 000- of which powerfail-proof500Traces	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max.	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
<ul> <li>Forcing, variables</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> <li>Diagnostic buffer</li> <li>Present</li> <li>Number of entries, max.</li> <li>O00</li> <li>Traces</li> </ul>	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max.	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job
• Number of variables, max.     200       Diagnostic buffer     Yes       • present     Yes       • Number of entries, max.     1 000       - of which powerfail-proof     500	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max.	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job
Diagnostic buffer       • present     Yes       • Number of entries, max.     1 000       - of which powerfail-proof     500	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
• present     Yes       • Number of entries, max.     1 000       - of which powerfail-proof     500	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
Number of entries, max. 1 000     - of which powerfail-proof 500 Traces	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
of which powerfail-proof 500 Traces	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max.	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
Traces	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200
	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200
Number of configurable Traces     4	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max.	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200
	Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — of which powerfail-proof	Yes; up to 8 simultaneously No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200

• Memory size per trace, max.	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
<ul> <li>Connection display LINK TX/RX</li> </ul>	Yes
Supported technology objects	
Motion Control	No
Controller	
PID_Compact	Yes; Universal PID controller with integrated optimization
PID_3Step	Yes; PID controller with integrated optimization for valves
• PID-Temp	Yes; PID controller with integrated optimization for temperature
Counting and measuring	Yes
High-speed counter	No
Ambient conditions	
Ambient temperature during operation	
<ul> <li>horizontal installation, min.</li> </ul>	0°0
<ul> <li>horizontal installation, max.</li> </ul>	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off
<ul> <li>vertical installation, min.</li> </ul>	0°0
• vertical installation, max.	40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
<ul> <li>Installation altitude above sea level, max.</li> </ul>	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Configuration	
Programming	
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	No
— GRAPH	Yes
Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes
Copy protection	No

Block protection	Yes
Access protection	
<ul> <li>Password for display</li> </ul>	Yes
<ul> <li>Protection level: Write protection</li> </ul>	Yes
<ul> <li>Protection level: Read/write protection</li> </ul>	Yes
Protection level: Complete protection	Yes
Cycle time monitoring	
lower limit	adjustable minimum cycle time
• upper limit	adjustable maximum cycle time
Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	430 g

last modified:

10/09/2020

