SIEMENS

Data sheet

6ES7151-7FA21-0AB0



SIMATIC DP, IM151-7 F-CPU for ET200S, 192 KB work memory with integrated PROFIBUS DP interface (9-pole D-sub socket) as DP slave, without battery SIMATIC MMC required

General information HW functional status 01 Firmware version V3.3 Product function • Isochronous mode • Isochronous mode No Engineering with • • Programming package as of STEP 7 V5.5 + SP1 or as of V5.2 + SP1 + HSP 219 + Distribut Safety or as of STEP 7 TIA Portal V11 Supply voltage	Distributed
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I²t 0.09 A²·s from supply voltage 1L+, max. 320 mA; 410 mA with DP master module Output current	
from supply voltage 1L+, max. 320 mA; 410 mA with DP master module Output current	
Output current	
Output current	
for backplane bus (5 V DC), max. 700 mA	
Power loss	
Power loss, typ. 4.2 W	
Memory	
Work memory	
integrated 192 kbyte	
• expandable No	
Load memory	
• Plug-in (MMC) Yes	
Plug-in (MMC), max. 8 Mbyte	
Data management on MMC (after last 10 y programming), min.	
Backup	
present Yes; Ensured by SIMATIC Micro Memory Card (maintenance-free)	ce-free)
CPU processing times	
for bit operations, typ. 0.06 µs	
for word operations, typ. 0.12 µs	

for fived point arithmatic tup	0.16.00
for fixed point arithmetic, typ.	0.16 µs
for floating point arithmetic, typ.	0.59 µs
CPU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	be reduced by the mino doed.
Number, max.	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	04 Kbyte
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
 Number, max. 	See S7-300 operation list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
Number of time alarm OBs	1; OB 10
Number of delay alarm OBs	2; OB 20, 21
Number of cyclic interrupt OBs	4; OB 32, 33, 34, 35
Number of process alarm OBs	1; OB 40
Number of DPV1 alarm OBs	
	3; OB 55, 56, 57
Number of startup OBs	1; OB 100
 Number of asynchronous error OBs 	6; OB 80, 82, 83 (for centralized I/O only, not for distributed I/O), 85, 86, 87
 Number of synchronous error OBs 	2; OB 121, 122
Nesting depth	
per priority class	16
additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
Number	256
Retentivity	200
— adjustable	Yes
— lower limit	0
— upper limit	255
	Z 0 to Z 7
— preset	
Counting range	0
— lower limit	0
— upper limit	999
IEC counter	Vec
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	256
Number Detentivity	256
Retentivity	N/
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
present	Yes
• Туре	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	

Retentive data area (incl. timers, counters, flags), max.	64 kbyte
Flag	
• Size, max.	256 byte
Retentivity available	Yes; MB 0 to MB 255
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
 Retentivity adjustable 	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
 per priority class, max. 	32 kbyte; Max. 2048 bytes per block
Address area	
I/O address area	
Inputs	2 048 byte
Outputs	2 048 byte
of which distributed	
— Inputs	2 048 byte
— Outputs	2 048 byte
Process image	
Inputs	2 048 byte
Outputs	2 048 byte
 Inputs, adjustable 	2 048 byte
 Outputs, adjustable 	2 048 byte
 Inputs, default 	128 byte
Outputs, default	128 byte
Digital channels	
Inputs	16 336
— of which central	496
Outputs	16 336
— of which central	496
Analog channels	
Inputs	1 021
— of which central	124
Outputs	1 021
— of which central	124
Hardware configuration	
Number of modules per system, max.	63; Centralized
Mounting rail	
Number of mounting rails that can be used	
Length of mounting rail, max.	Station width: $\leq 1 \text{ m or } < 2 \text{ m}$
Time of day	
Clock	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Backup time	6 wk; At 40 °C ambient temperature, typically
Deviation per day, max.	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
 Behavior of the clock following expiry of backup period 	the clock continues at the time of day it had when power was switched off
Operating hours counter	
• Number	1
Number/Number range	0
Range of values	0 to 2^31 hours (when using SFC 101)
• Granularity	1 h
retentive	Yes; Must be restarted at each restart
Clock synchronization	
supported	Yes
• to MPI, master	Yes
• to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock

	N .
• to DP, slave	Yes
• in AS, master	No
• in AS, slave	No
Interfaces	
Interfaces/bus type	1x PROFIBUS DP
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
 Output current of the interface, max. 	80 mA
Protocols	
• MPI	Yes
PROFIBUS DP master	No
PROFIBUS DP slave	Yes; active / passive
Point-to-point connection	No
MPI	
Transmission rate, max.	12 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes; With master module
 — Global data communication 	Yes
 — S7 basic communication 	Yes
— S7 communication	Yes; Only server, configured on one side
 — S7 communication, as client 	No
— S7 communication, as server	Yes
PROFIBUS DP slave	
GSD file	The latest GSD file is available on the Internet
- · · ·	(http://www.siemens.com/profibus-gsd)
Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
Address area, max.	32
User data per address area, max.	32 byte; Up to max. size of the transfer memory
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active, integrated DP slave interface and inserted DP master module in DP master mode
— Global data communication	No
- S7 basic communication	No
— S7 communication	Yes; Only server, configured on one side
- S7 communication, as client	No
- S7 communication, as server	Yes
— Direct data exchange (slave-to-slave	Yes
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	External interface via master module 6ES7138-4HA00-0AB0
Isolated	Yes
Interface types	
• RS 485	Yes
 Output current of the interface, max. 	No
Protocols	
• MPI	No
PROFIBUS DP master	Yes
PROFIBUS DP slave	No
PROFIBUS DP master	
Transmission rate, max.	12 Mbit/s

Number of DP slaves, max.	32; Per station
Services	
— PG/OP communication	Yes
— Routing	Yes
- Global data communication	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
- S7 communication, as client	No
- S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	No
— SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
— Number of DP slaves that can be	8
simultaneously activated/deactivated, max.	0
— Direct data exchange (slave-to-slave	Yes
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
Protocols	
Open IE communication	
• TCP/IP	No
communication functions / header	
PG/OP communication	Yes
Data record routing	Yes; With DP master module
Global data communication	
	Yes
supported	8
Number of GD loops, max.	
Number of GD packets, max.	8
 Number of GD packets, transmitter, max. Number of GD packets, receiver, max. 	
	8 22 hito
Size of GD packets, max.	22 byte
Size of GD packet (of which consistent), max.	22 byte
S7 basic communication	Vee
supported	Yes
• User data per job, max.	
 User data per job (of which consistent), max. 	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
S7 communication	
supported	Yes
as server	Yes
as server as client	No
 User data per job, max. 	See online help of STEP 7 (shared parameters of the SFBs/FBs and of
	the SFCs/FCs of S7 Communication)
 User data per job (of which consistent), max. 	See online help of STEP 7 (shared parameters of the SFBs/FBs and of
	the SFCs/FCs of S7 Communication)
Number of connections	
• overall	12
 usable for PG communication 	11
- reserved for PG communication	1
— adjustable for PG communication, min.	1
— adjustable for PG communication, max.	11
usable for OP communication	11
— reserved for OP communication	1
— adjustable for OP communication, min.	1
— adjustable for OP communication, max.	11

• Usable for S1 basic communication 10 - adjustable for S1 basic communication, min. 0 - adjustable for S1 basic communication, min. 10 • usable for routing 4. As slave only with active interface, with IM 151-7 CPU as DP master 7 message functions 4. As slave only with active interface, with IM 151-7 CPU as DP master 9 message functions 4. As slave only with active interface, with IM 151-7 CPU as DP master 9 message functions 4. 9 message functions 9. 9 message functions 4. 9 message functions 4. 9 Status block Yes 9 message functions 10 9 Munch control variables, max. 10 10 message functions 10 10 message 10<	e upphio for \$7 basis communication	10
	usable for S7 basic communication	10
- adjustable for SP basic communication, max. - usable for routing 4: As slave only with active interface, with IM 151-7 CPU as DP master S7 message functions - Process diagnostic message functions, max. - Process diagnostic messages - Yes, ALRAN, S., ALRAN, S.O, ALRAN, S.O, ALRAN, D.O, ALRAN, D.O, - Simultaneously active Alam-S blocks, max. - Status block - Yes, ALRAN, S., ALRAN, S.O, ALRAN, S.O, ALRAN, D.O, ALRAN, D.O, - Simultaneously active Alam-S blocks, max. - Status block - Yes, ALRAN, S., ALRAN, S.O, ALRAN, S.O, ALRAN, D.O, ALRAN, J.O, - Simultaneously active Alam-S blocks, max. - Status block - Variables - Number of Parabolics, max. - of which active variables, max. - adjustable - present - forcing - present - forcing variables - wither or of variables, max. - adjustable - present - of which proverfiel proof - whore or of arties, max. - adjustable - adjust		
 e. sabbit for routing 4: As slave only with active interface, with IM 151-7 CPU as DP master 77 message functions Number of login stations for message functions, max. 12: Depending on the configured connactions for PG/OP and S7 basic 78: ALARM_S. ALARM_S.A.LARM_SO, ALARM_D.A.LARM_DO simultaneously active Atam-S blocks, max. 900 78: conneised-oning functions 79: status: <li79: li="" status:<=""> <li79: li="" status:<=""></li79:></li79:>	-	
97 message functions 1 Number of login stations for message functions, max. 1 Process diagnostic messages Yes: ALARM, S, ALARM, SO, ALARM, DO, Simultaneously active Atams S blocks, max. 900 991: ALARM, S, ALARM, S, ALARM, SO, ALARM, DO, Simultaneously Situs block Yes: Up to 2 simultaneously Situs block Yes: Up to 2 simultaneously Situs block Yes Number of brakpoints 4 Status block Yes • Of which status variables, max. 30 of which status variables, max. 10 Diagnostic buffer Poresont • Poresont Yes • Number of enrines, max. 100 adjustable Yes adjustable 100 adjustable Yes adjustable Yes adjustable Yes adjustable Yes adjustable	-	
Number of login stations for message functions, max. 12: Depending on the configured connections for PG/OP and S7 basic Process diagnostic messages Yes; ALARM_S, ALARM_SC, ALARM_SO, ALARM_DO ALARM_DO simulaneously attive Alarm's blocks, max. 300 Past commissioning functions 4 Status block Yes • Status block Yes • Variables Inputs, outputs, memory bits, DB, times, counters • Variables 1 • Variables, max. 30 - of which status variables, max. 30 - of which status variables, max. 30 - of which status variables, max. 30 • Forcing Yes • Forcing, variables Inputs, outputs • Number of entries, max. 500 • Number of entries, max. 500 • Parsent Yes • Number of entries, max. 500 - adjustable No • Conthis powerfail-proof 100. Only the last 100 entries are retained • Number of entries, max. 500 • Can be read out Yes Diagnostic function Yes <td>-</td> <td></td>	-	
Process diagnostic messages ves. ALARM, S.A.LARM, S.C. ALARM, S.O., ALARM, D.O. simultanously active Atam-S blocks, max. 300 Cest commissioning functions 5 Status block Yes. Number of breakpoints 4 Status block Yes. • Status block Yes. • Status block Yes. • Status block Yes. • Variables Inputs. outputs. memory bits, DB, times, counters • Number of variables, max. 30 of which status variables, max. 30 of which status variables, max. 14 Forcing Inputs. outputs • Number of variables, max. 10 Diagnostic buffer Yes • Number of entries, max. 500 - adjustable No - adjustable No - adjustable No - adjustable Yes • Number of entries, max. 500 • preset 10 Diagnostic function Yes • Contig variables Incommany <		12: Depending on the configured connections for PG/OP and S7 basic
simulaneously active Atam-S Blocks, max. 300 Fast commissioning functions Status block Status block Yes, Up to 2 simultaneously Single step Yes • Status block Yes • Status block Inputs, outputs, memory bits, DB, times, counters • Variables Inputs, outputs, memory bits, DB, times, counters • Variables, max. 30 - of which status variables, max. 30 - of which orthori variables, max. 30 - of which orthori variables, max. 10 Diagnostic buffer Yes • Forcing, variables Inputs, outputs • Number of variables, max. 10 Diagnostic buffer Yes • present Yes • Number of variables, max. 500 • or which operfail-proof 100; Only the last 100 entries are retained • not which powerfail-proof 100; Only the last 100 entries are retained • Number of entries reactable in RUN, max. 499 • adjustable Yes • can be read out Yes Diagnostics function Yes		communication
Test commissioning functions Yes Status block. Yes, Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status control Inputs, outputs, memory bits, DB, times, counters • Variables Inputs, outputs, memory bits, DB, times, counters • Variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 14 Forcing • Forcing, variables • Forcing under of variables, max. 10 Diagnostic buffer • Porsent • present Yes • Insuber of entries, max. 500 - of which bowerfail-proof 100; Only the last 100 entries are retained • Number of entries, max. 500 - adjustable No - of which powerfail-proof 100; Only the last 100 entries are retained • Number of entries, readable in RUN, max. 499 - adjustable No - of which bowerfail-proof 100; Only the last 100 entries are retained • Number of entries, readable in RUN, max. 499 - adjustab	Process diagnostic messages	Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ
Status block Yes Single step Yes Number of breakpoints 4 Statuscontrol Inputs, outputs, memory bits, DB, times, counters • Statuscontrol Inputs, outputs, memory bits, DB, times, counters • Number of variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 14 Porcing Yes • Forcing, variables Inputs, outputs • Number of variables, max. 10 Diagnostic buffer 90 • or which powerfail-proof 100 - of which status information 499 • not which powerfail-proof 100 - on bread out Yes • forcing, variables No - or which powerfail-proof 100 - or which powerfail-proof 100 - on bread out Yes • adjustable Yes • Conting variables infromation Yes • Diagnostic function Yes Diagnostic function Yes Diagnostic function Yes • Boolenge study ON (green) Yes • Boolenge study ON (green) Yes Diagnostic function Yes Diagnostic function Yes	simultaneously active Alarm-S blocks, max.	300
Single step Yes Number of breakpoints 4 Status/control 4 • Variables Inputs, outputs, memory bits, DB, times, counters • Variables inputs, outputs, memory bits, DB, times, counters • Variables inputs, outputs, memory bits, DB, times, counters • of which control variables, max. 30 - of which control variables, max. 14 Forcing Yes • Forcing, variables, max. 10 Diagnostic buffer Yes • Number of entries, max. 500 adjustable No adjustable No adjustable Yes, From 10 to 499 adjustable Yes • northich powerfail-groof 100: Only the last 100 entries are retained • Number of entries, read-able in RUN, max. 499 adjustable Yes, From 10 to 499 adjustable Yes Interrupts/diagnostics/status information Yes Aams Diagnostics function Yes Diagnostics function <t< td=""><td>Test commissioning functions</td><td></td></t<>	Test commissioning functions	
Number of breakpoints 4 Status/control variables 4 • Status/control variables, max. 10 • of which octrol variables, max. 30 - of which octrol variables, max. 14 • Forcing Yes • Forcing, Yes • Porcing, Yes • Porcing, Yes • Porcing, Yes • Porcing, Yes • Status/control variables, max. 10 Diagnostic buffer • • present Yes • of which powerfail-proof 100; Only the last 100 entries are retained • Number of variables, max. 500 • of which powerfail-proof 100; Only the last 100 entries are retained • Justable Yes • - and statable Yes • - and statable in RUN, max. 499 and statable Yes • Can be read out Yes Interrupts/diagnostics/status information Yes Diagnostics indication LED • • Group error SF (red) Yes Diagnostics indication LED • • Group error SF (red) Yes Deduce and Protection IP20 Configuration rules max. 63 peripheral modules per station: station width <	Status block	Yes; Up to 2 simultaneously
Status/control Yes • Variables Inputs, outputs, memory bits, DB, times, counters • Variables, max. 30 - of which status variables, max. 30 - of which control variables, max. 14 Forcing Yes • Forcing, variables, max. 10 Diagnostic buffer Yes • Number of variables, max. 10 Diagnostic buffer No • Number of entries, max. 500 - adjustable No - adjustable No - adjustable Yes • Number of entries, max. 499 - adjustable Yes - adjustable Yes - adjustable Yes - adjustable Yes Interrupts/diagnostics/status information Alarms Yes Diagnostics function Yes Diagnostics indication LED Yes Diagnostics indication LED IP degree of protection IP degree of protection IP20 configuration / beader Solo V DC Degree and class of protection IP20 <td>Single step</td> <td>Yes</td>	Single step	Yes
Status/control variable Ves Variables, max. Jo Aumore of variables, max. Jo of which status variables, max. Jo of which control variables, max. Jo of which control variables, max. Jo of which control variables, max. Jo forcing, variables Inputs, outputs Number of variables, max. Jo Joagnesite buffer oresent ves	Number of breakpoints	4
• Variables Inputs, outputs, memory bits, DB, times, counters • Number of variables, max. 30 - of which status variables, max. 14 Forcing • Forcing, variables • Forcing, variables Inputs, outputs • Orong Yes • Unitor of variables, max. 10 Diagnostic buffer Yes • Number of entries, max. 500 adjustable No adjustable No adjustable No adjustable Yes - Diagnostics function Yes Diagnostics function Yes - Diagnostics function Yes - Barnowitics andication LED Yes - Borone Yes Diagnostics indication LED Yes - Borone Yes - Diagnostics of protection IP20 configuration / header See instruction list - Stepripheral modules per station, s	Status/control	
• Number of variables, max. 30 - of which status variables, max. 30 - of which status variables, max. 14 Forcing Yes • Forcing, variables Inputs, outputs • Orcing, variables, max. 10 Diagnostic buffer • present • present Yes • Number of which powerfail-proof 100; Only the last 100 entries are retained • Number of entries readable in RUN, max. 499 - of which powerfail-proof 100; Only the last 100 entries are retained • Number of entries readable in RUN, max. 499 - a djustable Yes; From 10 to 499 - preset 10 Service data Yes • oan be read out Yes Diagnostics function	 Status/control variable 	Yes
of which status variables, max. 30 of which control variables, max. 14 Forcing Yes • Forcing, variables Inputs, outputs • Number of variables, max. 10 Diagnostic buffer Yes • Present Yes • Number of entries, max. 500	Variables	Inputs, outputs, memory bits, DB, times, counters
− of which control variables, max. 14 Forcing Forcing, variables Inputs, outputs ● Forcing, variables, max. 10 Diagnostic buffer Ves ● present Yes ● Number of entries, max. 500 → adjustable No → adjustable No → adjustable No → adjustable No → adjustable Yes, From 10 to 499 → preset 10 ● Number of entries readable in RUN, max. 499 → adjustable Yes, From 10 to 499 → preset 10 Service data Yes ■ Group error SF (red) Yes Diagnostics function Yes Diagnostics function Yes Diagnostics function Yes Diagnostics function Yes Potential separation Yes between PCPIBUS DP and all other circuit components Yes Isolation rules max. 63 peripheral modules per station, station width < 1 m or < 2 m; max. 10 A per load group (power module); master interface module on right next to IM 151-7 CPU (X2 interface)	 Number of variables, max. 	30
Forcing Yes Forcing, variables Inputs, outputs Inputs, outputs Diagnostic buffer i present - adjustable No - adjustable - adjustable - preset 100: Only the last 100 entries are retained Number of entries readable in RUN, max. - adjustable - preset 10 - adjustable - yes Didagnostics function Pres<!--</td--><td>•</td><td></td>	•	
 Forcing Yes Forcing, variables Forcing <l< td=""><td></td><td>14</td></l<>		14
 Forcing, variables, max. Inputs, outputs Number of variables, max. Diagnostic buffer present Yes Number of entries, max. 500 - adjustable No - of which powerfail-proof 100; Only the last 100 entries are retained Number of entries readable in RUN, max. 499 - preset 10 Service data - can be read out Yes Interrupts/diagnostics/status information Alarms Yes Diagnostic function Yes Potential separation Yes Potential separation Yes Isolation Isolation Yes Potential separation Yes Configuration software Configuration nules ora be read out Stervice in tested with 500 V DC Degree and class of protection IP20 configuration nules StEP 7 Lite No configuration software StEP 7 Lite No configuration software System functions (SFC) see instruction list Programming language - LAD 		
Number of variables, max. 10 Diagnostic buffler Fees • Number of entries, max. 500	-	
Diagnostic buffer Yes • present Yes • Number of entries, max. 500 adjustable No adjustable No adjustable No adjustable Yes; From 10 to 499 adjustable Yes; From 10 to 499 adjustable Yes; From 10 to 499 preset 10 Service data	-	
		10
• Number of entries, max. 500 - adjustable No - of which powerfail-proof 100; Only the last 100 entries are retained • Number of entries readable in RUN, max. 499 - adjustable Yes; From 10 to 499 - preset 10 Service data - • can be read out Yes Interrupts/diagnostics/status information - Alarms Yes Diagnostics function Yes • Group error SF (red) Yes • Monitoring 24 V voltage supply ON (green) Yes Isolation 500 V DC Potential separation - Isolation tested with 500 V DC Opagree and class of protection IP20 configuration rules max. 63 peripheral modules per station; station width < 1 m or < 2 m; max. 10 A per load group (power module); master interface module on right next to IM 151-7 CPU (X2 interface)	-	
of which powerfail-proof 100; Only the last 100 entries are retained • Number of entries readable in RUN, max. 499 adjustable Yes; From 10 to 499 preset 10 Service data Yes • can be read out Yes Interrupts/diagnostics/status information Alarms Alarms Yes Diagnostics function Yes Objects function Yes Objects function Yes Outgrowtics indication LED Yes • Group error SF (red) Yes • Monitoring 24 V voltage supply ON (green) Yes Isolation Isolation Isolation Sol V DC Degree and class of protection IP20 configuration / header max. 63 peripheral modules per station: station width < 1 m or < 2 m: max. 10 A per load group (power module); master interface module on right next to IM 151-7 CPU (X2 interface)		
• Number of entries readable in RUN, max. 499 adjustable Yes; From 10 to 499 preset 10 Service data 10 • can be read out Yes Interrupts/diagnostics/status information Yes Alarms Yes Diagnostics function Yes Diagnostics function Yes Output of entries previous and the status information Yes Atarms Yes Diagnostics function Yes Diagnostics function Yes • Group error SF (red) Yes • Monitoring 24 V voltage supply ON (green) Yes Potential separation Jesprese and class of protection Isolation tested with 500 V DC Degree and class of protection IP20 Configuration rules max. 63 peripheral modules per station; station width < 1 m or < 2 m; max. 10 A per load group (power module); master interface module on right next to IM 151-7 CPU (X2 interface)		
— preset 10 Service data • can be read out • can be read out Yes Interrupts/diagnostics/status information Alarms Alarms Yes Diagnostics function Yes Diagnostics indication LED • (Group error SF (red) • Group error SF (red) Yes • Monitoring 24 V voltage supply ON (green) Yes Potential separation • between PROFIBUS DP and all other circuit components Yes Isolation • Isolation tested with 500 V DC Degree and class of protection IP 20 configuration rules max. 63 peripheral modules per station; station width < 1 m or < 2 m; max. 10 A per load group (power module); master interface module on right next to IM 151-7 CPU (X2 interface)		
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Alarms Yes Diagnostics function Yes Diagnostics indication LED • Group error SF (red) Yes • Monitoring 24 V voltage supply ON (green) Yes Potential separation		Yes
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• Group error SF (red) Yes • Monitoring 24 V voltage supply ON (green) Yes Potential separation		Yes
• Monitoring 24 V voltage supply ON (green) Yes Potential separation Yes Isolation Yes Isolation tested with 500 V DC Degree and class of protection IP 20 configuration / header max. 63 peripheral modules per station; station width < 1 m or < 2 m; max. 10 A per load group (power module); master interface module on right next to IM 151-7 CPU (X2 interface)		
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max. 10 A per load group (power module); master interface module on right next to IM 151-7 CPU (X2 interface)Configuration softwareNo• STEP 7 LiteNoconfiguration / programming / headersee instruction list• Command setsee instruction list• Nesting levels8• System functions (SFC)see instruction list• System function blocks (SFB)see instruction list• Programming language LADYes	configuration / header	
• STEP 7 Lite No configuration / programming / header see instruction list • Command set see instruction list • Nesting levels 8 • System functions (SFC) see instruction list • System function blocks (SFB) see instruction list Programming language - - LAD Yes	Configuration rules	max. 10 A per load group (power module); master interface module on
configuration / programming / header • Command set see instruction list • Nesting levels 8 • System functions (SFC) see instruction list • System function blocks (SFB) see instruction list Programming language	Configuration software	
• Command setsee instruction list• Nesting levels8• System functions (SFC)see instruction list• System function blocks (SFB)see instruction list• Programming language	STEP 7 Lite	No
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD Yes 	configuration / programming / header	
System functions (SFC) see instruction list System function blocks (SFB) see instruction list Programming language - LAD Yes	Command set	see instruction list
System function blocks (SFB) see instruction list Programming language LAD Yes	Nesting levels	8
Programming language — LAD Yes	 System functions (SFC) 	see instruction list
LAD Yes	 System function blocks (SFB) 	see instruction list
	Programming language	
FBD Yes	— LAD	Yes
	— FBD	Yes

— STL	Yes
— SCL	Yes; Optional
— CFC	Yes; Optional
— GRAPH	Yes; Optional
— HiGraph®	Yes; Optional
Know-how protection	
 User program protection/password protection 	Yes
 Block encryption 	Yes; With S7 block Privacy
programming / cycle time monitoring / header	
lower limit	1 ms
upper limit	6 000 ms
 cycle monitoring time / adjustable 	Yes
 cycle monitoring time / preset 	150 ms
Dimensions	
Width	60 mm; DP master module: 35 mm
Height	119.5 mm
Depth	75 mm
Weights	
Weight, approx.	200 g; DP master module: Approx. 100 g
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