

Distributed Controllers

based on ET 200Pro

Standard CPUs

IM 154-8 PN/DP CPU

Overview



- CPU with PLC functionality equivalent to S7-315-2 PN/DP provides distributed intelligence for preprocessing
- Interface module for exchanging pre-processed I/O data between the ET 200pro and a higher-level master/I/O controller via PROFIBUS DP/PROFINET IO
- PROFINET IO controller to operate distributed I/Os on PROFINET
- Component Based Automation (CBA) on PROFINET
- PROFINET proxy for intelligent devices on PROFIBUS DP in Component Based Automation (CBA)
- PROFINET interface with 3-port switch
- Isochronous mode on PROFIBUS or PROFINET
- Integrated web server with the option of creating user-defined web pages
- CPU with PLC functionality equivalent to S7-315-2 PN/DP provides distributed intelligence for preprocessing
- Fast, simple and end-to-end programming of a system with modular programs via STEP 7
- Fail-safe IM 154-8F PN/DP CPU PROFIsafe available

Note

SIMATIC Micro Memory Card required for operation of CPU.

Technical specifications

Article number	6ES7154-8AB01-0AB0 ET200PRO: IM 154-8 PN/DP CPU, 384KB
General information	
Engineering with	
• Programming package	STEP 7 V5.5 or higher
Supply voltage	
Rated value (DC)	24 V
Power loss	
Power loss, typ.	8.5 W
Memory	
Work memory	
• integrated	384 kbyte
Load memory	
• Plug-in (MMC), max.	8 Mbyte
CPU processing times	
for bit operations, typ.	0.05 µs
for word operations, typ.	0.09 µs
for fixed point arithmetic, typ.	0.12 µs
for floating point arithmetic, typ.	0.45 µs
Counters, timers and their retentivity	
S7 counter	
• Number	256
IEC counter	
• present	Yes
S7 times	
• Number	256
IEC timer	
• present	Yes
Data areas and their retentivity	
Flag	
• Number, max.	2 048 byte
Address area	
I/O address area	
• Inputs	2 048 byte
• Outputs	2 048 byte
Process image	
• Inputs, adjustable	2 048 byte
• Outputs, adjustable	2 048 byte
Time of day	
Clock	
• Hardware clock (real-time)	Yes
Operating hours counter	
• Number	1
1. Interface	
Interface type	Integrated RS 485 interface
Physics	RS 485/connection: 2 x M12 b-coded
Functionality	
• MPI	Yes
• PROFIBUS DP master	Yes
• PROFIBUS DP slave	Yes
• Point-to-point connection	No
DP master	
• Number of DP slaves, max.	124

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Ordering data

Article No.

Article No.

IE connecting cable M12-180/M12-180

- Preassembled IE FC TP Trailing Cable GP 2 x 2 (PROFINET Type C) with two 4-pin M12 plugs (4-pin, D-coded), degree of protection IP65/IP67, in various lengths:
 - 0.3 m
 - 0.5 m
 - 1.0 m
 - 1.5 m
 - 2.0 m
 - 3.0 m
 - 5.0 m
 - 10 m
 - 15 m
- PROFINET M12 connecting cable, trailing cable preassembled at both ends with angled M12 connectors (male insert), in various lengths:
 - 3.0 m
 - 5.0 m
 - 10 m
- PROFINET M12 connecting cable, trailing cable preassembled at one end with angled M12 connector (male insert at one end, other end open), in various lengths:
 - 3.0 m
 - 5.0 m
 - 10 m

6XV1870-8AE30
6XV1870-8AE50
6XV1870-8AH10
6XV1870-8AH15
6XV1870-8AH20
6XV1870-8AH30
6XV1870-8AH50
6XV1870-8AN10
6XV1870-8AN15

3RK1902-2NB30
3RK1902-2NB50
3RK1902-2NC10

3RK1902-2HB30
3RK1902-2HB50
3RK1902-2HC10

IE FC M12 Plug PRO

PROFINET M12 plug connector, D-coded with fast connection system, axial cable outlet.

- 1 unit
- 8 units
- PROFINET M12 plug connector, D-coded, angled.

6GK1901-0DB20-6AA0
6GK1901-0DB20-6AA8
3RK1902-2DA00

IE panel feed-through

Cabinet feedthrough for converting from the M12 connection system (D-coded, IP65/IP67) to the RJ45 connection system (IP20), 1 pack = 5 units.

6GK1901-0DM20-2AA5

7/8" connecting cable to power supply

5-wire, 5 x 1.5 mm², trailing type, preassembled with two 7/8" connectors (axial cable outlet), 5-pin, up to 50 m, in various lengths:

- 1.5 m
- 2.0 m
- 3.0 m
- 5.0 m
- 10 m
- 15 m
- Other special lengths with 90° or 180° cable outlet.

6XV1822-5BH15
6XV1822-5BH20
6XV1822-5BH30
6XV1822-5BH50
6XV1822-5BN10
6XV1822-5BN15

See

<http://support.automation.siemens.com/WW/view/en/26999294>

- Power cable, can be trailed, 5 x 1.5 mm², preassembled at both ends with 7/8" angled connectors (female insert at one end, male insert at the other end), in various lengths:
 - 3.0 m
 - 5.0 m
 - 10 m

3RK1902-3NB30
3RK1902-3NB50
3RK1902-3NC10

- Power cable, can be trailed, 5 x 1.5 mm², preassembled at one end with 7/8" angled connector with female insert (female insert at one end, other end open), in various lengths:
 - 3.0 m
 - 5.0 m
 - 10 m

3RK1902-3GB30
3RK1902-3GB50
3RK1902-3GC10

Power line

5-wire, 5 x 1.5 mm², trailing type, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m.

6XV1830-8AH10

7/8" cable connector

For ET 200eco, with axial cable outlet

- with male insert, 5-pack
- with female insert, 5-pack
- angled, with female insert, 1 unit
- angled, with male insert, 1 unit

6GK1905-0FA00
6GK1905-0FB00
3RK1902-3DA00
3RK1902-3BA00

7/8" cover cap, 10 per pack

6ES7194-3JA00-0AA0

Ordering data	Article No.	Article No.
CPU 1516pro-2 PN Work memory 1 MB for program, 5 MB for data, PROFINET I/O IRT interface, PROFINET/PROFIBUS interface; SIMATIC Memory Card required	6ES7516-2PN00-0AB0	IE Connecting Cable M12-180/M12-180 • Preassembled IE FC TP Trailing Cable GP 2 x 2 (PROFINET Type C) with two 4-pin M12 plugs (4-pin, D-coded), degree of protection IP65/IP67, in various lengths: • 0.3 m • 0.5 m • 1.0 m • 1.5 m • 2.0 m • 3.0 m • 5.0 m • 10 m • 15 m • PROFINET M12 connecting cable, trailing cable preassembled at both ends with angled M12 connectors (male insert), in various lengths: • 3.0 m • 5.0 m • 10 m • PROFINET M12 connecting cable, trailing cable preassembled at one end with angled M12 connector (male insert at one end, other end open), in various lengths: • 3.0 m • 5.0 m • 10 m
Accessories		
SIMATIC Memory Card		
4 MB ¹⁾	6ES7954-8LC02-0AA0	6XV1870-8AE30
12 MB ¹⁾	6ES7954-8LE02-0AA0	6XV1870-8AE50
24 MB ¹⁾	6ES7954-8LF02-0AA0	6XV1870-8AH10
256 MB ¹⁾	6ES7954-8LL02-0AA0	6XV1870-8AH15
2 GB ¹⁾	6ES7954-8LP02-0AA0	6XV1870-8AH20
32 GB ¹⁾	6ES7954-8LT03-0AA0	6XV1870-8AH30
Connection module	6ES7194-4AP00-0AA0	6XV1870-8AH50
CM CPU 2PN M12 / 7/8"; with 3 x M12 and 2 x 7/8", for connecting 2 x PROFINET		6XV1870-8AN10
Industrial Ethernet FC RJ45 Plug 180		6XV1870-8AN15
RJ45 plug connector for Industrial Ethernet with a rugged metal enclosure and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet		
• 1 unit • 10 units • 50 units	6GK1901-1BB10-2AA0 6GK1901-1BB10-2AB0 6GK1901-1BB10-2AE0	3RK1902-2NB30 3RK1902-2NB50 3RK1902-2NC10
Industrial Ethernet Fast Connect installation cables		
• FastConnect Standard Cable • FastConnect Trailing Cable • FastConnect Marine Cable	6XV1840-2AH10 6XV1840-3AH10 6XV1840-4AH10	
Industrial Ethernet FastConnect installation cables		
• IE FC TP Trailing Cable GP 2 x 2; sold by the meter, max. delivery unit 1 000 m; minimum order quantity 20 m. • IE TP Torsion Cable GP 2 x 2; sold by the meter, max. delivery unit 1 000 m; minimum order quantity 20 m.	6XV1870-2D 6XV1870-2F	6GK1901-0DB20-6AA0 6GK1901-0DB20-6AA8 3RK1902-2DA00
Industrial Ethernet FastConnect Stripping Tool	6GK1901-1GA00	6GK1901-0DM20-2AA5

¹⁾ An MMC is essential for operating the CPU

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Fail-safe CPUs

IM 154-8 F PN/DP CPU

Ordering data	Article No.		Article No.
Accessories		Industrial Ethernet FastConnect installation cables	
SIMATIC Micro Memory Cards		• IE FC TP Trailing Cable GP 2 x 2; sold by the meter, max. delivery unit 1 000 m; minimum order quantity 20 m.	6XV1870-2D
MMC 64 KB ²⁾	6ES7953-8LF31-0AA0	• IE TP Torsion Cable GP 2 x 2; sold by the meter, max. delivery unit 1 000 m; minimum order quantity 20 m.	6XV1870-2F
For program backup.			
MMC 128 KB ²⁾	6ES7953-8LG31-0AA0		
For program backup.			
MMC 512 KB ²⁾	6ES7953-8LJ31-0AA0		
For program backup.			
MMC 2 MB ²⁾	6ES7953-8LL31-0AA0		
For program backup and/or firmware updates.			
MMC 4 MB ²⁾	6ES7953-8LM31-0AA0		
For program backup.			
MMC 8 MB ²⁾	6ES7953-8LP31-0AA0		
For program backup.			
Connection module	6ES7194-4AN00-0AA0	Industrial Ethernet FastConnect	
For CPU IM154-8 PN/DP, with 4 x M12 and 2 x 7/8", for connecting PROFINET and PROFIBUS DP.		Stripping Tool	6GK1901-1GA00
SCALANCE X-200 Industrial Ethernet switches	6GK5208-0HA10-2AA6	IE Connecting Cable M12-180/M12-180	
With integral SNMP access, web diagnostics, copper cable diagnostics and PROFINET diagnostics, for setting up linear, star and ring structures SCALANCE X208PRO, in degree of protection IP65, with eight 10/100 Mbit/s M12 ports, incl. eleven M12 dust caps.		• Preassembled IE FC TP Trailing Cable GP 2 x 2 (PROFINET Type C) with two 4-pin M12 plugs (4-pin, D-coded), degree of protection IP65/IP67, in various lengths: - 0.3 m - 0.5 m - 1.0 m - 1.5 m - 2.0 m - 3.0 m - 5.0 m - 10 m - 15 m • PROFINET M12 connecting cable, trailing cable preassembled at both ends with angled M12 connectors (male contact insert), in various lengths: - 3.0 m - 5.0 m - 10 m • PROFINET M12 connecting cable, trailing cable preassembled at one end with angled M12 connector (male contact insert at one end, other end open), in various lengths: - 3.0 m - 5.0 m - 10 m	6XV1870-8AE30 6XV1870-8AE50 6XV1870-8AH10 6XV1870-8AH15 6XV1870-8AH20 6XV1870-8AH30 6XV1870-8AH50 6XV1870-8AN10 6XV1870-8AN15
Industrial Ethernet FC RJ45 Plug 90			3RK1902-2NB30 3RK1902-2NB50 3RK1902-2NC10
RJ45 plug connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 90° cable outlet.			
• 1 unit • 10 units	6GK1901-1BB20-2AA0 6GK1901-1BB20-2AB0		3RK1902-2HB30 3RK1902-2HB50 3RK1902-2HC10
Industrial Ethernet FC RJ45 Plug 180		IE FC M12 Plug PRO	
RJ45 plug connector for Industrial Ethernet with a rugged metal enclosure and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet		PROFINET M12 plug connector, D-coded with fast connection system, axial cable outlet.	
• 1 unit • 10 units • 50 units	6GK1901-1BB10-2AA0 6GK1901-1BB10-2AB0 6GK1901-1BB10-2AE0	• 1 unit • 8 units • PROFINET M12 plug connector, D-coded, angled	6GK1901-0DB20-6AA0 6GK1901-0DB20-6AA8 3RK1902-2DA00
Industrial Ethernet FastConnect installation cables		IE panel feedthrough	
• FastConnect Standard Cable • FastConnect Trailing Cable • FastConnect Marine Cable	6XV1840-2AH10 6XV1840-3AH10 6XV1840-4AH10	Cabinet feedthrough for converting from the M12 connection system (D-coded, IP65/IP67) to the RJ45 connection system (IP20), 1 pack = 5 units	6GK1901-0DM20-2AA5

²⁾ An MMC is essential for operating the CPU

Ordering data	Article No.	Article No.
CPU 1516pro F-2 PN Work memory 1.5 MB for program, 5 MB for data, PROFINET IO IRT interface, PROFINET/PROFIBUS interface; SIMATIC Memory Card required	6ES7516-2GN00-0AB0	
Accessories		
SIMATIC Memory Card 4 MB ¹⁾ 12 MB ¹⁾ 24 MB ¹⁾ 256 MB ¹⁾ 2 GB ¹⁾ 32 GB ¹⁾	6ES7954-8LC02-0AA0 6ES7954-8LE02-0AA0 6ES7954-8LF02-0AA0 6ES7954-8LL02-0AA0 6ES7954-8LP02-0AA0 6ES7954-8LT03-0AA0	
Connection module CM CPU 2PN M12 / 7/8"; with 3 x M12 and 2 x 7/8", for connecting 2 x PROFINET	6ES7194-4AP00-0AA0	
Industrial Ethernet FC RJ45 Plug 180 RJ45 plug connector for Industrial Ethernet with a rugged metal enclosure and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet • 1 unit • 10 units • 50 units	6GK1901-1BB10-2AA0 6GK1901-1BB10-2AB0 6GK1901-1BB10-2AE0	
Industrial Ethernet Fast Connect installation cables • FastConnect Standard Cable • FastConnect Trailing Cable • FastConnect Marine Cable	6XV1840-2AH10 6XV1840-3AH10 6XV1840-4AH10	
Industrial Ethernet FastConnect installation cables • IE FC TP Trailing Cable GP 2 x 2; sold by the meter, max. delivery unit 1 000 m; minimum order quantity 20 m. • IE TP Torsion Cable GP 2 x 2; sold by the meter, max. delivery unit 1 000 m; minimum order quantity 20 m.	6XV1870-2D 6XV1870-2F	
Industrial Ethernet Fast Connect Stripping Tool	6GK1901-1GA00	
		IE Connecting Cable M12-180/M12-180 Preassembled IE FC TP Trailing Cable GP 2 x 2 (PROFINET Type C) with two 4-pin M12 plugs (4-pin, D-coded), degree of protection IP65/IP67, in various lengths: • 0.3 m • 0.5 m • 1.0 m • 1.5 m • 2.0 m • 3.0 m • 5.0 m • 10 m • 15 m PROFINET M12 connecting cable, trailing cable preassembled at both ends with angled M12 connectors (male insert), in various lengths: • 3.0 m • 5.0 m • 10 m PROFINET M12 connecting cable, trailing cable preassembled at one end with angled M12 connector (male insert at one end, other end open), in various lengths: • 3.0 m • 5.0 m • 10 m
		6XV1870-8AE30 6XV1870-8AE50 6XV1870-8AH10 6XV1870-8AH15 6XV1870-8AH20 6XV1870-8AH30 6XV1870-8AH50 6XV1870-8AN10 6XV1870-8AN15 3RK1902-2NB30 3RK1902-2NB50 3RK1902-2NC10 3RK1902-2HB30 3RK1902-2HB50 3RK1902-2HC10
		IE FC M12 Plug PRO PROFINET M12 plug connector, D-coded with fast connection system, axial cable outlet. • 1 unit • 8 units • PROFINET M12 plug connector, D-coded, angled.
		IE panel feedthrough Cabinet feedthrough for converting from the M12 connection system (D-coded, IP65/IP67) to the RJ45 connection system (IP20), 1 pack = 5 units.
		6GK1901-0DB20-6AA0 6GK1901-0DB20-6AA8 3RK1902-2DA00 6GK1901-0DM20-2AA5

¹⁾ An MMC is essential for operating the CPU