SIEMENS

Data sheet

6ES7141-6BG00-0BB0



SIMATIC ET 200eco PN, DI 8x 24 V DC, M12-L, 8x M12, single and double assignment, input type 3 (IEC 61131), sink input (PNP, sinking input), input delay 0.05...20 ms, channel diagnostics for: wire break at input, encoder power supply short-circuit, 0.25 ms isochronous mode, prioritized startup, MSI, MRP, S2 redundancy, I&M0...3, multi-fieldbus, PN IO, Ethernet IP, Modbus TCP, degree of protection IP67 / IP69K

Input current Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. Encoder supply polarity 85 mA; without load 12 A; Maximum value 12 A; Maximum value	neral information	
FW update possible Vendor identification (VendorID) Device Identifier (DeviceID) Device Identifier (DeviceID) Device Identifier (DeviceID) Manufacturer ID according to ODVA (VendorID) Device ID according to ODVA (Product code) Product function • I&M data Isochronous mode Prioritized startup Fes Engineering with • STEP 7 TIA Portal configurable/integrated from version PROFINET from GSD version/GSD revision FROFINET from GSD version/GSD revision Multi Fieldbus Configuration Tool (MFCT) Operating mode • DI Counter MSI Yes Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ • Rated value (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • Reverse polarity protection Prom load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. Encoder supply Encoder supply 12 A; Maximum value Encoder supply 12 A; Maximum value Encoder supply	W functional status	FS01
Vendor identification (VendorID) Device identifier (DeviceID) Manufacturer ID according to ODVA (VendorID) Perioduct function I I&M data I Isochronous mode Prioritized startup Engineering with STEP 7 TIA Portal configurable/integrated from version PROFINET from GSD version/GSD revision Multi Fieldbus Configuration Tool (MFCT) Peating mode DI Counter MSI Supply voltage power supply according to NEC Class 2 required Load voltage 11.+ Rated value (DC) Perevisible range, lower limit (DC) Perevisible range, upper limit (DC)	rmware version	V5.1.x
Device identifier (DeviceID) Manufacturer ID according to ODVA (VendorID) Device ID according to ODVA (Product code) Product function I & M data Sisochronous mode Prointized startup Engineering with STEP 7 TIA Portal configurable/integrated from version PROFINET from GSD version/GSD revision Multi Fieldbus Configuration Tool (MFCT) Operating mode DI Counter MSI Supply voltage power supply according to NEC Class 2 required Rated value (DC) permissible range, lower limit (DC) Press (Date of the work of the product) Reverse polarity protection Est Maximum value Encoder supply STEP 7 TIA Portal configurable/integrated from version GSDML V2.3.x from V1.3 SP1 STEP 7 V17 or higher with HSP 0363 GSDML V2.3.x from V1.3 SP1 Operating mode Other No Ves Supply voltage Power supply according to NEC Class 2 required No Load voltage 1L+ Stated value (DC) State of the voltage of the very polarity No State of the very polarity in the very polarity Input current Current consumption (rated value) From load voltage 1L+ (unswitched voltage) From load voltage 1L+ (unswitched voltage) From load voltage 2L+, max. Encoder supply	FW update possible	Yes
Manufacturer ID according to ODVA (VendorID) Device ID according to ODVA (Product code) Product function • I&M data • Isochronous mode • Prioritized startup Product function • IAM Device ID according to ODVA (Product code) • IAM data • Isochronous mode • Prioritized startup Pres Engineering with • STEP 7 TIA Portal configurable/integrated from version • PROFINET from GSD version/GSD revision • Multi Fieldbus Configuration Tool (MFCT) Operating mode • DI • Counter • MSI Supply voltage power supply according to NEC Class 2 required No Load voltage 1L+ • Rated value (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • Reverse polarity protection Input current Current consumption (rated value) from load voltage 2L+, max. Encoder supply Encoder supply 12 A; Maximum value Encoder supply Encoder supply 12 A; Maximum value Encoder supply	endor identification (VendorID)	002AH
Device ID according to ODVA (Product code) Product function IskM data Iscordinous mode Prioritized startup Engineering with STEP 7 TIA Portal configurable/integrated from version PROFINET from GSD version/GSD revision PROFINET from GSD version/GSD revision Multi Fieldbus Configuration Tool (MFCT) Operating mode Ocunter MSI Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ Rated value (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption (rated value) From load voltage 9L+, max. Encoder supply Carrott on Sum Adams of the Maximum value Encoder supply From load voltage 2L+, max. Encoder supply Carrott consumption PRA4H Yes; I&M0 to I&M3 Yes STEP 7 V17 or higher with HSP 0363 GSDML V2.3.x from V1.3 SP1 OFA Ves SUPLY V2.3.x From V1.3 SP1 OSTEP 7 V17 or higher with HSP 0363 GSDML V2.3.x From V1.3 SP1 OSTEP 7 V17 or higher with HSP 0363 GSDML V2.3.x From V1.3 SP1 OSTEP 7 V17 or higher with HSP 0363 GSDML V2.3.x From V1.3 SP1 OSTEP 7 V17 or higher with HSP 0363 GSDML V2.3.x From V1.3 SP1 OSTEP 7 V17 or higher with HSP 0363 GSDML V2.3.x From V1.3 SP1 OSTEP 7 V17 or higher with HSP 0363 GSDML V2.3.x From V1.3 SP1 OSTEP 7 V17 or higher with HSP 0363 GSDML V2.3.x From V1.3 SP1 Oster V1.3 SP1 Oster V2.3 X From V1.3 SP1 Oster V2.3 X From V1.3 SP1 Oster V2.3 X From V1.4 SP1 Ves SUBLY V2.4 V Ves Subply voltage 1.4 (unswitched voltage) From load voltage 2L+, max. From load voltage 2L+, max. Encoder supply	evice identifier (DeviceID)	0306H
Product function I &M data I scorbronous mode Prioritized startup STEP 7 TIA Portal configurable/integrated from version PROFINET from GSD version/GSD revision Multi Fieldbus Configuration Tool (MFCT) Operating mode O DI O Counter MSI Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ Rated value (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption (rated value) from load voltage 2L+, max. Encoder supply Fes (Maximum value) SETE 7 V17 or higher with HSP 0363 STEP 1 V17 or high	anufacturer ID according to ODVA (VendorID)	04E3H
Isochronous mode Isochronous mode Prioritized startup STEP 7 TIA Portal configurable/integrated from version PROFINET from GSD version/GSD revision Multi Fieldbus Configuration Tool (MFCT) Operating mode DI Yes Counter No MSI Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ Rated value (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Current consumption (rated value) from load voltage 2L+, max. Encoder supply Yes Yes STEP 7 V17 or higher with HSP 0363 STEP 1 V13 or HSP 1 V1	evice ID according to ODVA (Product code)	0FA4H
Isochronous mode Prioritized startup Engineering with STEP 7 TIA Portal configurable/integrated from version PROFINET from GSD version/GSD revision Multi Fieldbus Configuration Tool (MFCT) Operating mode DI Counter No MSI Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ Rated value (DC) permissible range, lower limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Current Current consumption (rated value) from load voltage 9L+, max. Encoder supply Final PY vor or higher with HSP 0363 STEP 7 V17 or hig	oduct function	
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Engineering with STEP 7 TIA Portal configurable/integrated from version PROFINET from GSD version/GSD revision Multi Fieldbus Configuration Tool (MFCT) Operating mode DI Counter MSI Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ Rated value (DC) permissible range, lower limit (DC) Reverse polarity protection Reverse polarity protection Current consumption (rated value) from load voltage 2L+, max. Encoder supply STEP 7 V17 or higher with HSP 0363 STEP 7 V1 or higher with HSP 0363 STEP 1 V1 or higher with	 Isochronous mode 	Yes
STEP 7 V17 or higher with HSP 0363 PROFINET from GSD version/GSD revision Multi Fieldbus Configuration Tool (MFCT) Peraing mode DI Counter MSI Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ Rated value (DC) permissible range, lower limit (DC) Reverse polarity protection Reverse polarity protection Reverse polarity protection STEP 7 V17 or higher with HSP 0363 GSDML V2.3.x from V1.3 SP1 Yes No Yes Supply voltage No Load voltage 1L+ Rated value (DC) Permissible range, lower limit (DC) See Reverse polarity protection STEP 7 V17 or higher with HSP 0363 GSDML V2.3.x from V1.3 SP1 No 24 V Supply voltage Power supply according to NEC Class 2 required No Load voltage 1L+ See Against destruction; encoder power supply outputs applied with reversible range, lower limit (DC) See See Against destruction; encoder power supply outputs applied with reversible range of the voltage o	Prioritized startup	Yes
PROFINET from GSD version/GSD revision Multi Fieldbus Configuration Tool (MFCT) Operating mode DI Yes Counter No MSI Supply voltage power supply according to NEC Class 2 required No Load voltage 1L+ Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Pervise polarity protection Reverse polarity protection Paginate Current Current consumption (rated value) from load voltage 2L+, max. Encoder supply GSDML V2.3.x from V1.3 SP1 Yes No Yes No 24 V 24 V 26 V 27 V 28.8 V 28.8 V 28.8 V 29 Sagainst destruction; encoder power supply outputs applied with rever polarity Encoder supply Encoder supply	ngineering with	
Multi Fieldbus Configuration Tool (MFCT) Operating mode DI Counter MSI MSI Supply voltage power supply according to NEC Class 2 required Rated value (DC) permissible range, lower limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Encoder supply according to NEC Class 2 required No 24 V Permissible range, lower limit (DC) Permissible range, upper limit (D	STEP 7 TIA Portal configurable/integrated from version	STEP 7 V17 or higher with HSP 0363
Operating mode • DI • Counter • MSI • Counter • MSI Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ • Rated value (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • Reverse polarity protection Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. Pyes Yes No 24 V 20.4 V 28.8 V 28.8 V Pes; Against destruction; encoder power supply outputs applied with rever polarity Input current Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. 12 A; Maximum value Encoder supply	 PROFINET from GSD version/GSD revision 	GSDML V2.3.x
Onl Counter No MSI Yes Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Reverse polarity protection Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. Pyes No 24 V 20.4 V 28.8 V Yes, Against destruction; encoder power supply outputs applied with rever polarity Input current Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. 12 A; Maximum value Encoder supply	 Multi Fieldbus Configuration Tool (MFCT) 	from V1.3 SP1
Counter MSI Yes Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes; Against destruction; encoder power supply outputs applied with reverpolarity Input current Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. 12 A; Maximum value Encoder supply	perating mode	
MSI Supply voltage power supply according to NEC Class 2 required No Load voltage 1L+ Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Press Against destruction; encoder power supply outputs applied with reverpolarity Input current Current consumption (rated value) From load voltage 1L+ (unswitched voltage) From load voltage 2L+, max. 12 A; Maximum value Encoder supply	• DI	Yes
Supply voltage power supply according to NEC Class 2 required Load voltage 1L+ Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Pes; Against destruction; encoder power supply outputs applied with reversible to a polarity Input current Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. Encoder supply	Counter	No
power supply according to NEC Class 2 required Load voltage 1L+ Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Prom load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. Possible range, upper limit (DC) 24 V 29.4 V 29.4 V Yes; Against destruction; encoder power supply outputs applied with rever polarity Set mA; without load 12 A; Maximum value 12 A; Maximum value Encoder supply	• MSI	Yes
Load voltage 1L+ Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Press Against destruction; encoder power supply outputs applied with reverse polarity Input current Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. Encoder supply	ply voltage	
 Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes; Against destruction; encoder power supply outputs applied with reverse polarity Input current Current consumption (rated value) 85 mA; without load from load voltage 1L+ (unswitched voltage) 12 A; Maximum value From load voltage 2L+, max. Encoder supply 12 A; Maximum value Encoder supply	ower supply according to NEC Class 2 required	No
 permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. Encoder supply 20.4 V 28.8 V Yes; Against destruction; encoder power supply outputs applied with reverse polarity 85 mA; without load 12 A; Maximum value 12 A; Maximum value	pad voltage 1L+	
 permissible range, upper limit (DC) Reverse polarity protection Yes; Against destruction; encoder power supply outputs applied with reverpolarity Input current Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. A; Maximum value Encoder supply 	Rated value (DC)	24 V
● Reverse polarity protection Yes; Against destruction; encoder power supply outputs applied with reverpolarity Input current Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. 12 A; Maximum value Encoder supply	 permissible range, lower limit (DC) 	20.4 V
Input current Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. Encoder supply polarity 85 mA; without load 12 A; Maximum value 12 A; Maximum value	 permissible range, upper limit (DC) 	28.8 V
Current consumption (rated value) from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. 12 A; Maximum value Encoder supply	Reverse polarity protection	Yes; Against destruction; encoder power supply outputs applied with reversed polarity
from load voltage 1L+ (unswitched voltage) from load voltage 2L+, max. 12 A; Maximum value Encoder supply	ut current	
from load voltage 2L+, max. 12 A; Maximum value Encoder supply	urrent consumption (rated value)	85 mA; without load
Encoder supply	om load voltage 1L+ (unswitched voltage)	12 A; Maximum value
	om load voltage 2L+, max.	12 A; Maximum value
Number of outputs 8	oder supply	
Trumber of outputs	umber of outputs	8
24 V encoder supply	V encoder supply	
• Short-circuit protection Yes; per channel, electronic	Short-circuit protection	Yes; per channel, electronic
Output current, max. 100 mA; per output	Output current, max.	100 mA; per output
Power loss	ver loss	
Power loss, typ. 7.6 W	ower loss, typ.	7.6 W
Address area	dress area	

Address space per module	
Inputs	1 byte; + 1 byte for QI information
Hardware configuration	1 byte, 1 byte for Qriffionnation
Submodules	
Number of configurable submodules, max.	2
Digital inputs	2
Number of digital inputs	8
Digital inputs, parameterizable	Yes
Source/sink input	P-reading
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 60 °C, max.	8
Input voltage	
Rated value (DC)	24 V
• for signal "0"	-30 to +5 V
• for signal "1"	+11 to +30V
Input current	
● for signal "1", typ.	2.4 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms
Cable length	
• unshielded, max.	30 m
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
Interfaces	
Number of PROFINET interfaces	1
1. Interface	DDOCINET with 400 Mkit/s fell develop (400DAGE TV)
Interface type	PROFINET with 100 Mbit/s full duplex (100BASE-TX)
Interface types	
	Yes: 2x M12, 4-nin, D-coded
• M12 port	Yes; 2x M12, 4-pin, D-coded
M12 portNumber of ports	2
M12 portNumber of portsintegrated switch	
 M12 port Number of ports integrated switch Protocols	2 Yes
 M12 port Number of ports integrated switch Protocols PROFINET IO Device 	2
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication	2 Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types	2 Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port	2 Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation	2 Yes Yes Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port	2 Yes Yes Yes Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing	2 Yes Yes Yes Yes Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max.	2 Yes Yes Yes Yes Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols	Yes Yes Yes Yes Yes 100 Mbit/s
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO	2 Yes Yes Yes Yes Yes Yes Yes Yes 100 Mbit/s
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFIsafe	Yes Yes Yes Yes Yes Yes Yes Yes No
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFIsafe EtherNet/IP	Yes Yes Yes Yes Yes Yes Yes Yes No Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFIsafe EtherNet/IP Modbus TCP	Yes Yes Yes Yes Yes Yes Yes Yes No Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFISafe EtherNet/IP Modbus TCP PROFINET IO Device	Yes Yes Yes Yes Yes Yes Yes Yes No Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFISafe EtherNet/IP Modbus TCP PROFINET IO Device Services	2 Yes Yes Yes Yes Yes Yes Yes No Yes Yes Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFIsafe EtherNet/IP Modbus TCP PROFINET IO Device Services — IRT	Yes Yes Yes Yes Yes Yes Yes 100 Mbit/s Yes No Yes Yes Yes Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFIsafe EtherNet/IP Modbus TCP PROFINET IO Device Services — IRT — Prioritized startup	Yes Yes Yes Yes Yes Yes Yes 100 Mbit/s Yes No Yes Yes Yes Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFIsafe EtherNet/IP Modbus TCP PROFINET IO Device Services — IRT — Prioritized startup Redundancy mode	Yes Yes Yes Yes Yes Yes Yes 100 Mbit/s Yes No Yes Yes Yes Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFIsafe EtherNet/IP Modbus TCP PROFINET IO Device Services IRT Prioritized startup Redundancy mode PROFINET system redundancy (S2)	Yes Yes Yes Yes Yes Yes 100 Mbit/s Yes No Yes Yes Yes Yes Yes Yes Yes Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFISafe EtherNet/IP Modbus TCP PROFINET IO Device Services IRT Prioritized startup Redundancy mode PROFINET system redundancy (S2) — on S7-1500R/H	Yes Yes Yes Yes Yes Yes Yes 100 Mbit/s Yes No Yes Yes Yes Yes Yes Yes Yes Yes Yes
M12 port Number of ports integrated switch Protocols PROFINET IO Device Open IE communication Interface types M12 port Autonegotiation Autocrossing Transmission rate, max. Protocols Supports protocol for PROFINET IO PROFIsafe EtherNet/IP Modbus TCP PROFINET IO Device Services IRT Prioritized startup Redundancy mode PROFINET system redundancy (S2) — on S7-1500R/H — on S7-400H	2 Yes Yes Yes Yes Yes Yes 100 Mbit/s Yes No Yes

Services	— MRP	Yes
Services		165
- CIP Implicit Messaging		
- CIP Exploit Messaging		Voc
- CIP Safety - Shared device - Ves; 2x EtherNet/IP Scanner - Number of scanners with shared device, max. 2 Updating times - Requested Packet Interval (RPI) 2 ms Redundancy mode - DL R (Device Level Ring) No Address area - Address space per modula, max. 20 byte - LargeForwardOpen (Class3) No Moduse TCP - Read device injunits (code=1) Yes - read colis (code=1) Yes - read device injunits (code=2) Yes - write multiple colis (code=1) Yes - write multiple colis (code=15) Yes - Write Multiple Registers (Code=16) Yes - Parameter change by master No - Modus TCP Security Protocol No Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space per station 20 byte - No - Address space 20 byte - No - Address spa		
Shared device Number of scenners with shared device, max 2 Updating times Requested Packet Interval (RPI) 2 ms Redundancy mode DLR (Device Level Ring) No DLR (Device Level Ring) No Address space per module, max 2 byte Address space per module, max 2 byte Large Poward Open (Class3) No Module TCP Services read coils (code=1) Yes read coils (code=1) Yes read coils (code=1) Yes Read Midding Registers (Code=3) Yes write single coil (code=5) Yes write single coils (code=15) Yes write single coils (code=15) Yes write single coils (code=16) Yes Write Multiple Registers (Code=16) Yes Parameter change by master No Module TCP Security Protocol No Address space per station Address space per station Address space per station Access-consistent address space 2 byte Updating time I/O request interval Number of connections per slave I/O request interval Number of connections per slave Number of connections p	· · · · · · · · · · · · · · · · · · ·	
	•	
Deciding times		
Redundancy mode		2
Redundancy mode		2
— OLR (Device Level Ring)		ZIIIS
Address srace — Address space per module, max. — LargeForwardOpen (Class3) No	·	N.
		N0
Modus TOP		
Modbust TCP Services		
Services		No
- read colis (code=1) - read discrete inputs (code=2) - read discrete inputs (code=2) - Read Holding Registers (Code=3) - write single coll (code=5) - write multiple colis (code=5) - write multiple colis (code=16) - write multiple colis (code=16) - Parameter change by master - Modust TCP Security Protocol - With Modust TCP Security Protocol - Protocolors and Protocolors Protocolors Protocolors Protocolors - Number of connections per slave - Pur or equest inferval - Pur or equest in		
- read discrete inputs (code=2) - Read Holding Registers (Code=3) - write single coil (code=5) - write multiple coils (code=5) - write multiple coils (code=15) - write multiple coils (code=15) - Write Multiple Registers (Code=16) - Parameter change by master - Modbus TCP Security Protocol - Address space per station max Access-consistent address space - Updating time - I/O request interval - Z ms - Number of connections per slave Open ILE communication TCP/IP		
— Read Holding Registers (Code=3) Yes — write single coil (code=5) Yes — write multiple coils (code=16) Yes — Write Multiple Registers (Code=16) Yes — Parameter change by master No — Modous TCP Security Protocol No Address space per station No — Address space per station, max. 20 byte — Access-consistent address space 2 byte Updating time 2 ms — I/O request interval 2 ms Connections 12 Open IE communication Yes • TCP/IP Yes, (only EtherNet/IP or Modbus TCP) • SMMP Yes • LLDP Yes • ARP Yes Shortest clock pulse 250 µs max. cycle 4 ms shortest clock pulse 250 µs max. cycle 4 ms shortest clock pulse Yes, Parameterizable • Interrupts diagnostics/status information Yes, Parameterizable • Diagnostic alarm Yes, Parameterizable • Diagnostic informa		
write single coil (code=5) write multiple coils (code=15) write multiple coils (code=16) write multiple coils (code=16) write multiple coils (code=16) write whitiple Registers (code=16) Parameter change by master Modous TCP Security Protocol Modous TCP Security Protocol Modous TCP Security Protocol Address space per station Address space per station Address space per station Address space per station Access-consistent address space Updating time I/O request interval I/O request interval I/O request interval Number of connections per slave I/O request interval TCPIP Number of connections per slave TCPIP Number of connections per slave TCPIP SNMP TCPIP SNMP Yes LLDP NAP Yes NAP Yes NAP Yes NAP Yes NAP		
— write multiple coils (code=15) Yes — Write Multiple Registers (Code=16) Yes — Parameter change by master No — Modbus TCP Security Protocol No Address space per station — — Address space per station, max. 20 byte — Address space per station and consistent address space 2 byte Updating time — — I/O request interval 2 ms Connections — — Number of connections per slave 12 Open IE communication Yes • TCP/IP Yes; (only EtherNet/IP or Modbus TCP) • SNMP Yes • LLDP Yes • ARP Yes • Sochronous mode — Equidistance Yes • shortest clock pulse 250 µs max. cycle 4 ms ultrer, max. 10 µs Interrupts/diagnostics/status information • Diagnostic alarm Yes; Parameter/zable • Maintenance interrupt Yes; Parameter/zable • Maintenance interrupt Yes; Parameter/zabl		
- Write Multiple Registers (Code=16) - Parameter change by master - Modbus TCP Security Protocol Address space per station - Address space per station, max Access-consistent address space 2 byte Updating time - I/O request interval 2 ms Connections - Number of connections per slave 12 Open IE communication • TCP/IP	,	
— Parameter change by master No — Modbus TCP Security Protocol No Address space per station 20 byte — Access-consistent address space 2 byte Updating time — I/O request interval — I/O request interval 2 ms Connections — Number of connections per slave — Number of connections per slave 12 Open IE communication Yes: (only EtherNet/IP or Modbus TCP) • SNMP Yes • LLDP Yes • ARP Yes • LLDP Yes • ARP Yes Shortest clock pulse 250 μs max. cycle 4 ms Jitter, max. 10 μs Interrupts/diagnostics/status information Alarms Yes; Parameterizable • Diagnostic alarm Yes; Parameterizable • Hardware interrupt Yes; Parameterizable • Monitoring the supply voltage Yes • Parameterizable Yes • Wire-break Yes; DI, input current < 0.3 mA, per channel	. , , ,	Yes
- Modbus TCP Security Protocol Address space per station - Address space per station, max Access-consistent address space Updating time - I/U request interval - Number of connections per slave Open IE communication • TCP/IP • SNMP • Yes • LLDP • LARP • LLDP • ARP • Yes Isochronous mode Equidistance Equidistance Maintenance interrupt • Diagnostic alarm • Maintenance interrupt • Hardware interrupt • Hardware interrupt • Hardware interrupt • Wres • Monitoring the supply voltage - parameterizable • Wire-break • Short-circuit encoder supply Diagnostics indication LED • RUN LED • KILDP • Yes • Per Spranted LED • RUN LED • NS LED • MS LED	— Write Multiple Registers (Code=16)	Yes
Address space per station Address space per station, max. Address space per station Diffequest interval Ambient of connections Number of connections per slave Per Station TCP/IP Yes: (only EtherNet/IP or Modbus TCP) SNMP LLDP Yes ARP Yes LLDP Yes ARP Yes Isochronous mode Equidistance Yes shortest clock pulse Amax. Yes Shortest clock pulse Amax. Yes Shortest clock pulse Yes Shortest clock pulse Yes Shortest clock pulse Alarms Diagnostic alarm Yes: Parameterizable Hardware interrupt Yes: Parameterizable Alarms Diagnoses Diagnoses Diagnoses Diagnoses Short-dricuit encoder supply Yes: Per channel group Diagnostics indication LED Yes: green LED Yes: green LED Yes: green LED Yes: green/ed	 Parameter change by master 	No
- Address space per station, max Access-consistent address space - L/O request interval - L/O request interval 2 ms Connections - Number of connections per slave 12 Open IE communication • TCP/IP • SNMP • LLDP • ARP * LLDP • ARP * LLDP • ARP * Sochronous mode Equidistance shortest clock pulse max. cycle differ, max. 10 μs Interrupts/diagnostics/status information Alarms • Diagnostic alarm • Maintenance interrupt • Hardware interrupt Diagnosses • Diagnostic information readable • Monitoring the supply voltage - parameterizable • Wire-break • Short-circuit encoder supply Diagnostics indication LED • FRROR LED • FRROR LED • FRROR LED • MAINT LED • Pes; green/red LED • MAINT LED • NS LED • MS LED • MS LED • MS LED • MS LED • Yes; green/red LED • MS LED	 Modbus TCP Security Protocol 	No
- Access-consistent address space Updating time - I/O request interval Connections - Number of connections per slave 12 Open IE communication • TCP/IP • SNMP • LLDP • SNMP • LLDP • ARP Sochronous mode Equidistance Shortest clock pulse max. cycle Jitter, max. 10 μs Interrupts/diagnostics/status information Alarms • Diagnostic alarm • Maintenance interrupt • Hardware interrupt Diagnoses • Monitoring the suppily voltage — parameterizable • Monitoring the suppily voltage • Short-circuit encoder supply • RUN LED • RUN LED • RUN LED • RUN LED • MS LED • NS LED • MS LED	Address space per station	
Updating time	 Address space per station, max. 	20 byte
— I/O request interval 2 ms Connections - Number of connections per slave Open IE communication 12 • TCP/IP Yes; (only EtherNet/IP or Modbus TCP) • SNMP Yes • LLDP Yes • ARP Yes Isochronous mode 250 μs Equidistance Yes shortest clock pulse 250 μs max. cycle 4 ms Jitter, max. 10 μs Interrupts/diagnostics/status information Alarms • Diagnostic alarm • Diagnostic alarm Yes; Parameterizable • Hardware interrupt Yes; Parameterizable • Hardware interrupt Yes; Parameterizable • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Wire-break Yes; Per channel group Diagnostics indication LED Yes; Per channel group • RRND LED	 Access-consistent address space 	2 byte
Connections Number of connections per slave Open IE communication **TOP/IP** SNMP** SNMP** SNMP** Yes LLDP** ARP** Yes **LOP** ARP** Equidistance Fequidistance Shortest clock pulse ### 10 µs Interrupts/diagnostics/status information Alarms **Olagnostic alarm** Maintenance interrupt Alarware interrupt Diagnoses **Olagnostic information readable** **Olagnostic information readable** Monitoring the supply voltage **Olagnostic information readable** **Monitoring the supply voltage** **Monitoring the supply voltage** **Wire-break** Short-circuit encoder supply** **Wire-break** **Short-circuit encoder supply** **Pes; Parameterizable** **Wire-break** **Short-circuit encoder supply** **Pes** **Pes** **Per channel group Diagnostics information LED **RUN LED**	Updating time	
- Number of connections per slave Open IE communication • TCP/IP • SNMP • SNMP • LLDP • Yes • ARP • Yes • ARP • Yes Sochronous mode Equidistance Sport yes shortest clock pulse Jitter, max. 10 μs Interrupts/diagnostics/status information Alarms • Diagnostic alarm • Maintenance interrupt • Hardware interrupt Diagnoses • Diagnostic information readable • Wire-break • Wire-break • Wire-break • Short-circuit encoder supply Diagnostics indication LED • RINN LED • RRNR LED • RRNR LED • MAINT LED • MS LED	— I/O request interval	2 ms
Open IE communication TCP/IP TCP/IP SNMP Yes LLDP ARP Yes ARP Yes Sochronous mode Equidistance Yes Shortest clock pulse Max. cycle Jitter, max. 10 µs Interrupts/diagnostics/status information Alarms Diagnostic alarm Alarms Diagnostic information readable Hardware interrupt Yes; Parameterizable Hardware interrupt Yes Parameterizable Monitoring the supply voltage Amonitoring the supply voltage Wire-break Short-circuit encoder supply Pagnostics indication LED RUN LED FREN LED FREN LED FREN LED FREN LED FRES Green-yellow LED Miss LED Miss LED Fres; green/red Fres; green/red Fres; green/red	Connections	
• TCP/IP • SMMP • SMMP • LLDP • ARP • LLDP • ARP • Yes • LLDP • ARP • Yes Sochronous mode	 Number of connections per slave 	12
• SNMP • LLDP • ARP • ARP • Yes • ARP • Yes Sochronous mode Equidistance	Open IE communication	
• LLDP • ARP • ARP • Yes Isochronous mode Equidistance Equidistance max. Cycle Jitter, max. 10 µs Interrupts/diagnostics/status information Alarms • Diagnostic alarm • Maintenance interrupt • Maintenance interrupt • Hardware interrupt • Hardware interrupt Diagnoses • Diagnostic information readable • Monitoring the supply voltage — parameterizable • Wire-break • Short-circuit encoder supply Diagnostics indication LED • RUN LED • RROR LED • RROR LED • MAINT LED • MS LED • Yes; green/red LED • MS LED • MS LED • Yes; green/red LED • MS LED • Yes; green/red LED • MS LED • MS LED • Yes; green/red LED • MS LED • MS LED • Yes; green/red LED • MS LED • MS LED • Yes; green/red LED	• TCP/IP	Yes; (only EtherNet/IP or Modbus TCP)
Sochronous mode Equidistance Yes shortest clock pulse 250 μs max. cycle 4 ms Jitter, max. 10 μs Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes; Parameterizable • Maintenance interrupt Yes; Parameterizable • Hardware interrupt Yes; Parameterizable • Monitoring the supply voltage Yes • Mire-break Yes; DI, input current < 0.3 mA, per channel • Short-circuit encoder supply Diagnostics indication LED • RUN LED • ERROR LED • MAINT LED • MS LED	• SNMP	Yes
Sochronous mode Equidistance Yes shortest clock pulse 250 μs max. cycle 4 ms Jitter, max. 10 μs Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes; Parameterizable • Maintenance interrupt Yes; Parameterizable • Hardware interrupt Yes; Parameterizable • Monitoring the supply voltage Yes • Mire-break Yes; DI, input current < 0.3 mA, per channel • Short-circuit encoder supply Diagnostics indication LED • RUN LED • ERROR LED • MAINT LED • MS LED	• LLDP	Yes
Equidistance Yes shortest clock pulse 250 μs max. cycle 4 ms Jitter, max. 10 μs Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes; Parameterizable • Maintenance interrupt Yes; Parameterizable • Hardware interrupt Yes; Parameterizable • Monitoring the supply voltage Yes • Monitoring the supply voltage Yes; Per channel Y	• ARP	
shortest clock pulse 250 µs max. cycle 4 ms Jitter, max. 10 µs Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes; Parameterizable • Maintenance interrupt Yes; Parameterizable • Hardware interrupt Yes; Parameterizable • Diagnoses • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring the supply voltage Yes • Wire-break Yes; DI, input current < 0.3 mA, per channel yes; Per channel group Diagnostics indication LED • RUN LED Yes; green LED • ERROR LED Yes; red LED • MAINT LED Yes; red LED • MS LED • Yes; green/red LED • Yes; green/red LED • MS LED • MS LED • MS LED • Yes; green/red LED	Isochronous mode	
shortest clock pulse 250 µs max. cycle 4 ms Jitter, max. 10 µs Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes; Parameterizable • Maintenance interrupt Yes; Parameterizable • Hardware interrupt Yes; Parameterizable • Diagnoses • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring the supply voltage Yes • Wire-break Yes; DI, input current < 0.3 mA, per channel yes; Per channel group Diagnostics indication LED • RUN LED Yes; green LED • ERROR LED Yes; red LED • MAINT LED Yes; red LED • MS LED • Yes; green/red LED • Yes; green/red LED • MS LED • MS LED • MS LED • Yes; green/red LED	Equidistance	Yes
max. cycle Jitter, max. 10 μs Interrupts/diagnostics/status information Alarms • Diagnostic alarm • Maintenance interrupt • Hardware interrupt Diagnoses • Diagnostic information readable • Monitoring the supply voltage — parameterizable • Wire-break • Short-circuit encoder supply Diagnostics indication LED • RUN LED • ERROR LED • MAINT LED • MAINT LED • MS LED • IO LED Ves; red-green-yellow LED	·	
Jitter, max. 10 µs Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes; Parameterizable • Maintenance interrupt Yes; Parameterizable • Hardware interrupt Yes; Parameterizable Diagnoses • Diagnostic information readable Yes • Monitoring the supply voltage Yes — parameterizable Yes Wire-break Yes; DI, input current < 0.3 mA, per channel • Short-circuit encoder supply Yes; Per channel group Diagnostics indication LED • RUN LED • RROR LED • MAINT LED • MAINT LED • MS LED • Yes; green/red LED	·	
Interrupts/diagnostics/status information Alarms		
Alarms Diagnostic alarm Maintenance interrupt Maintenance		10 40
 Diagnostic alarm Maintenance interrupt Hardware interrupt Hardware interrupt Yes; Parameterizable Diagnoses Diagnostic information readable Monitoring the supply voltage — parameterizable Wire-break Short-circuit encoder supply Pes; Per channel group Diagnostics indication LED RUN LED ERROR LED MAINT LED NS LED NS LED MS LED MS LED MS LED MS LED Yes; green/red LED Yes; green-yellow LED Yes; green-yellow LED 		
 Maintenance interrupt Hardware interrupt Diagnoses Diagnostic information readable Monitoring the supply voltage — parameterizable Wire-break Short-circuit encoder supply Pes; Per channel group Diagnostics indication LED RUN LED ERROR LED MAINT LED MAINT LED NS LED MS L		Vac. Darameterizable
 Hardware interrupt Diagnoses Diagnostic information readable Monitoring the supply voltage — parameterizable Wire-break Short-circuit encoder supply Per channel group Piagnostics indication LED RUN LED ERROR LED MAINT LED NS LED NS LED MS LED MS LED MS LED Yes; Parameterizable Yes Parameterizable Yes Pes Pes Per channel group Pes Per channel group Pes Yes <	-	
Diagnoses Diagnostic information readable Monitoring the supply voltage parameterizable Wire-break Short-circuit encoder supply Pagnostics indication LED RUN LED REROR LED MAINT LED MS	·	
 Diagnostic information readable Monitoring the supply voltage — parameterizable Wire-break Short-circuit encoder supply Diagnostics indication LED RUN LED ERROR LED MAINT LED NS LED NS LED MS LED MS LED IO LED Yes; red-green-yellow LED Yes; green-yellow LED 		res, rarameterizable
 Monitoring the supply voltage — parameterizable — Wire-break — Short-circuit encoder supply — Parameterizable — Wire-break — Short-circuit encoder supply — Short-circuit encoder supply — Parameterizable — Yes; DI, input current < 0.3 mA, per channel — Yes; Per channel group — Parameterizable — Yes; Per channel group — Parameterizable — Yes; Green LED — Yes; Green LED — Yes; red LED — WAINT LED — WAINT LED — Yes; Yellow LED — WS LED — MS LED — Yes; Green/red LED — Yes; Green/red LED — Yes; Green-yellow LED — Yes; Green-yellow LED 	9	Ver
 — parameterizable • Wire-break • Short-circuit encoder supply Diagnostics indication LED • RUN LED • ERROR LED • MAINT LED • NS LED • NS LED • MS LED • Yes; green/red LED 		
 Wire-break Short-circuit encoder supply Diagnostics indication LED RUN LED ERROR LED MAINT LED NS LED MS LED MS LED MS LED IO LED Yes; DI, input current < 0.3 mA, per channel Yes; Per channel group Yes; green LED Yes; green LED Yes; red LED Yes; Yellow LED Yes; green/red LED Yes; green/red LED Yes; green/red LED Yes; green/red LED Yes; green-yellow LED Yes; red-green-yellow LED		
Short-circuit encoder supply Piagnostics indication LED RUN LED ERROR LED MAINT LED NS LED NS LED MS LED MS LED Yes; green/red LED	·	
Diagnostics indication LED ● RUN LED Yes; green LED ● ERROR LED Yes; red LED ● MAINT LED Yes; Yellow LED ● NS LED Yes; green/red LED ● MS LED Yes; green/red LED ● IO LED Yes; red-green-yellow LED		
 RUN LED ERROR LED MAINT LED NS LED MS LED MS LED Yes; green/red LED MS LED Yes; green/red LED Yes; green/red LED Yes; green/red LED 		Yes; Per channel group
 ERROR LED MAINT LED NS LED MS LED MS LED IO LED Yes; red LED Yes; green/red LED Yes; green/red LED Yes; green/red LED Yes; red-green-yellow LED 	Diagnostics indication LED	
 MAINT LED NS LED MS LED MS LED IO LED Yes; green/red LED Yes; green/red LED Yes; green/red LED Yes; red-green-yellow LED 	• RUN LED	
 NS LED MS LED IO LED Yes; green/red LED Yes; green/red LED Yes; red-green-yellow LED 	• ERROR LED	Yes; red LED
 MS LED IO LED Yes; green/red LED Yes; red-green-yellow LED 	MAINT LED	Yes; Yellow LED
• IO LED Yes; red-green-yellow LED	• NS LED	Yes; green/red LED
	• MS LED	Yes; green/red LED
Channel status display Yes; green LED	• IO LED	Yes; red-green-yellow LED
	Channel status display	Yes; green LED

 for channel diagnostics 	Yes; red LED
 Connection display LINK TX/RX 	Yes; green LED, only link
Potential separation	
between the load voltages	Yes
between Ethernet and electronics	Yes
Potential separation channels	
 between the channels 	No
 between the channels and the power supply of the electronics 	No
Isolation	
tested with	
• 24 V DC circuits	707 V DC (type test)
 Test voltage for interface, rms value [Vrms] 	1 500 V; According to IEEE 802.3
Degree and class of protection	
IP degree of protection	IP65/67/69K
Standards, approvals, certificates	
Suitable for safety-related tripping of standard modules	Yes; From FS01
Highest safety class achievable for safety-related tripping of stand	dard modules
 Performance level according to ISO 13849-1 	PL d
 Category according to ISO 13849-1 	Cat. 3
SIL acc. to IEC 62061	SIL 2
 remark on safety-oriented shutdown 	https://support.industry.siemens.com/cs/de/en/view/39198632
Ambient conditions	
Ambient temperature during operation	
• min.	-40 °C
• max.	60 °C
Altitude during operation relating to sea level	
Ambient air temperature-barometric pressure-altitude	Up to max. 5 000 m, at installation height > 2 000 m additional restrictions
connection method	
Design of electrical connection	4/5-pin M12 circular connectors
Design of electrical connection for the inputs and outputs	M12, 5-pin, A-coded
Design of electrical connection for supply voltage	M12, 4-pin, L-coded
Dimensions	
Width	45 mm
Height	200 mm
Depth	48 mm
Weights	
Weight, approx.	780 g

last modified: