## **SIEMENS**

## **Data sheet**

6ES7352-5AH11-0AE0



SIMATIC S7-300, FM352-5 with PNP output, High Speed Boolean Processor, for high-speed linking, 12 DI, 8 DO, 1 encoder interface for RS422 incr./SSI encoder

Figure similar

Supply voltage	
Load voltage L+	
<ul> <li>Rated value (DC)</li> </ul>	24 V
<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
<ul> <li>permissible range, upper limit (DC)</li> </ul>	28.8 V
<ul> <li>Reverse polarity protection</li> </ul>	Yes
Input current	
from load voltage1L+, max.	150 mA; typ. 60 mA
from load voltage 2L+ (without load), max.	200 mA; typ. 60 mA, DI/DO supply
from load voltage 3L+ (with encoder), max.	600 mA; typ. 80 mA plus encoder supply
from load voltage 3L+ (without load), max.	200 mA; typ. 80 mA
from backplane bus 5 V DC, typ.	135 mA
Encoder supply	
5 V encoder supply	
• 5 V	Yes
Short-circuit protection	Yes; Electronic overload protection; no protection on applying a normal or counter voltage.
Output current, max.	250 mA
24 V encoder supply	
• 24 V	Yes
Short-circuit protection	Yes; Overvoltage and overheating protection if overloaded; diagnostics if output reaches temperature limit; no protection on applying a normal or counter voltage
<ul> <li>Output current, max.</li> </ul>	400 mA
Power loss	
Power loss, typ.	6.5 W
Memory	
Type of memory	RAM
Memory size	128 kbyte; required for operation, MMC
Digital inputs	
Number of digital inputs	8; Standard and up to 12 with 24 V DC encoder inputs as digital inputs
Input voltage	
Rated value (DC)	24 V
• for signal "0"	-30 to +5 V
• for signal "1"	+11 to +30V
Input current	
• for signal "0", max. (permissible quiescent current)	1.5 mA
• for signal "1", typ.	3.8 mA
Input delay (for rated value of input voltage)	

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<ul> <li>Input frequency (with a time delay of 0.1 ms), max.</li> </ul>	200 kHz
programmable digital filter delay	None, 5 μs, 10 μs, 15 μs, 20 μs, 50 μs, 1.6 ms
Minimum pulse width for program reactions  for standard inputs.	1 µs, 5 µs, 10 µs, 15 µs, 20 µs, 50 µs, 1,6 ms
for standard inputs	2 yearham 4.5 year
— at "0" to "1", max.	3 μs; typ. 1.5 μs
Cable length	600 m
• shielded, max.	
unshielded, max.	100 m; Shielded cable recommended if filtering delay is set to less than 1.6 ms
Digital outputs	
Number of digital outputs	8
Current-sinking	No
Current-sourcing	Yes
Short-circuit protection	Yes; Overvoltage protection, thermal protection
Response threshold, typ.	1.7 to 3.5 A
Limitation of inductive shutdown voltage to	2M -45 V typ., (-40 V to -55 V); comment: no protection against inductive kickback >55 mJ
Controlling a digital input	Yes
Switching capacity of the outputs	
on lamp load, max.	5 W
Output voltage	
Rated value (DC)	24 V
• for signal "0", max.	28.8 V
• for signal "1", max.	0.5 V
Output current	
for signal "1" rated value	0.5 A; At 60 °C
• for signal "1" permissible range for 0 to 60 °C, min.	5 mA
• for signal "1" permissible range for 0 to 60 °C, max.	600 mA
<ul><li>for signal "0" residual current, max.</li></ul>	1 mA
Output delay with resistive load	
• "0" to "1", max.	1 μs; 0.6 μs 50 mA / 1.0 μs 0.5 A
• "1" to "0", max.	1.5 μs; 1.7 μs 50 mA / 1.5 μs 0.5 A
Parallel switching of two outputs	
for uprating	Yes; 2
Switching frequency	
<ul> <li>with resistive load, max.</li> </ul>	100 kHz; 20 kHz at 0.5 A; 100 kHz at 0.25 A
with inductive load, max.	2 Hz; 2 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A without external commutator diodes
on lamp load, max.	10 Hz
Cable length	
<ul><li>shielded, max.</li></ul>	600 m
unshielded, max.	100 m
Encoder	
Connectable encoders	
<ul> <li>Incremental encoder (symmetrical)</li> </ul>	Yes
<ul> <li>Incremental encoder (asymmetrical)</li> </ul>	Yes
<ul> <li>Absolute encoder (SSI)</li> </ul>	Yes
• 2-wire sensor	Yes
<ul> <li>permissible quiescent current (2-wire sensor), max.</li> </ul>	1.5 mA
Encoder signals, incremental encoder (symmetrical)	
Trace mark signals	A, notA, B, notB
<ul> <li>Zero mark signal</li> </ul>	N, notN
<ul> <li>Input voltage</li> </ul>	5 V difference signal (phys. RS 422)
<ul> <li>Input frequency, max.</li> </ul>	500 kHz
Cable length, shielded, max.	100 m; 100 m with 24 V supply and 500 kHz; 32 m with 5 V supply and 500 kHz
Encoder signals, incremental encoder (asymmetrical)	
Trace mark signals	A, B
<ul> <li>Zero mark signal</li> </ul>	N
Input voltage	24 V
■ mput voitage	∠ <del>+</del> v

overload; differential wire break; parameterization error; SSI messag frame overflow veriflow versions overflow versions and versions overflow versions versions overflow versions versio		
# - 50 kHz, 25 m shielded, max, 25 kHz, 50 m shielded, max.  DATA, notDATA Clock signal Clock frequency, max. About Clock frequency, 25 kHz, 250 kHz, 500 kHz or 1 MHz About Clock frequency, 25 kHz, 250 kHz, 500 kHz or 1 MHz About Clock frequency, 47 kBs about Clock frequency, 47 kBs available; for generation by user program About Clock frequency, 47 kBs available; for generation by user program About Clock frequency, 47 kBs available; for generation by user program About Clock frequency, 47 kBs available; for generation by user program About Clock frequency, 47 kBs available; for generation by user program About Clock frequency, 47 kBs available; for generation by user program About Clock frequency, 47 kBs available; for generation by user program About		
Darta parallel	Cable length, shielded, max.	4: 50 kHz, 25 m shielded, max., 25 kHz, 50 m shielded, max.
Clock signal  Clock signal  Clock requency, max.  Cable length, shielded, max.  Counting direction, forward  Counting direction, forward  Counting direction, forward  Cable length, shielded, max.  Cable length, shielded, max.  Cable length, shielded, max.  Counting direction, forward  Cable length, shielded, max.  Cable length, shielded, shield	Encoder signals, absolute encoder (SSI)	
Telegram length, parameterizable     Clock frequency, max.     Cable length, shielded, max.     Admontop time     Setable: 1672248764 µs     Setable: 1	Data signal	DATA, notDATA
Clock frequency, max	<ul> <li>Clock signal</li> </ul>	CK, notCK
- Cable length, shielded, max Monoflop time - Monoflop time - Monoflop time - Multitum - Multitum - Ses, one or two stations - Wultitum - Counting direction, forward - Counting direction, backward - Counting mange, description - Updating times - Diagnostic alarm - Material and State and Sta	<ul> <li>Telegram length, parameterizable</li> </ul>	13 or 25 bit
• Midrollog time • Listening mode • Listening mode • Midriturn • Counting direction, forward • Counting direction, backward • Yes  Input- to output response time  5 V input to 24 V output, 0 filter: 1 to 4 µs (typ.); 24 V input to 24 V output, 0 filter: 2 to 6 µs (typ.)  Interfaces  Point-to-point connection • Updating times • PLC interface: 1.7 ms  Interrupts/dispositics/cictus information  Alarms • Diagnostic alarm • Pladraware interrupt  Diagnoses • Wire-break in signal transmitter cable • Overflow/underflow • Imissing load voltage • Overflow/underflow • Imissing load voltage • Plansford incident LED • RUNISTOP LED • Midro Memory Card error MCF (red) • Status indicator digital input (green) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply voltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Overfload encoder supply woltage 24 V F (red) • Ove	<ul> <li>Clock frequency, max.</li> </ul>	1 MHz; 125 kHz, 250 kHz, 500 kHz or 1 MHz
Listening mode Multitum Yes: 25 bit message frame  Encoder signal evaluation  Counting direction, forward Counting direction, forward Yes Counting direction, forward Yes  Response times  Input to output response time  S V input to 24 V output. 0 filter: 1 to 4 µs (typ.): 24 V input to 24 V output. 0 filter: 2 to 6 µs (typ.)  Interfaces  Point-to-point connection Updating times Plant-to-point connection	<ul> <li>Cable length, shielded, max.</li> </ul>	320 m; At 125 kHz
Nullitum     Counting direction, forward     Counting direction, backward     Response times Input- to output response time     So Vinput to 24 V output, 0 filter: 1 to 4 µs (typ.); 24 V input to 24 V output, 0 filter: 2 to 6 µs (typ.) Interfaces Point-lo-point connection     Updating times     PLC interface: 1.7 ms Interrupts/diagnostics/status information  Alaims     Diagnostic slarm     Ves; 1L, 2L, 3L missing; MMC error; output overload (8); encoder sup overload; differential wire break; parameterization error; SSI messag frame overflow     Vire-break in signal transmitter cable     Overtow/underflow     vire-break in signal transmitter cable     Overtow/underflow     vire-break in signal transmitter cable     Overtow/underflow     indicator digital input (green)     Ves     Status indicator digital input (green)     Overtoad encoder supply voltage 24 V F (red)     Overtoad encoder supply voltage 5 V F (red) Counter Counting range, description  Counting range, lower limit     Counting mande, continuous     Counting mande, continuous     Counting mode, continuous     Potential separation digital inputs     Potential separation digital inpu	<ul> <li>Monoflop time</li> </ul>	settable: 16/32/48/64 µs
Encoder signal evaluation  Counting direction, backward  Counting direction, backward  Pes Response times Inpul- to output response time  Inpul- to output response time  Updating times PLC interface: 1.7 ms  Interrupts/diagnostics/status information  Alarms  Diagnostic alarm  Place interrupts/diagnostics/status information  Alarms  Alarms  Place interrupts/diagnostics/status information  Alarms  Place interrupt interrupt interrupt interrupt interrupts/diagnostics/status information  Alarms  Place interrupt inte	Listening mode	Yes; one or two stations
Counting direction, backward Counting direction, backward Pes Counting direction, backward Pes Response times Input- to output response time Solupit, 0 filter: 2 to 6 µs (typ.): 24 V input to 24 V output, 0 filter: 2 to 6 µs (typ.): 24 V input to 24	Multiturn	Yes; 25 bit message frame
• Counting direction, backward  Response times Input- to output response time    SV input to 24 V output, 0 filter: 1 to 4 µs (typ.); 24 V input to 24 V output, 0 filter: 2 to 6 µs (typ.)    Interfaces	Encoder signal evaluation	
Interfaces    Interfaces   5 V Input to 24 V output, 0 filter: 1 to 4 µs (typ.); 24 V input to 24 V output, 0 filter: 2 to 6 µs (typ.)   Interfaces   PLC interface: 1.7 ms     Interpolating times	<ul> <li>Counting direction, forward</li> </ul>	Yes
Input- to output response time  5 V input to 24 V output, 0 filter: 1 to 4 µs (typ.); 24 V input to 24 V output, 0 filter: 2 to 6 µs (typ.)  Interfaces  Point-to-point connection  • Updating times  Interrupts (interrupts)  • Diagnostic alarm  • Diagnostic alarm  • Diagnostic alarm  • PLC interface: 1.7 ms  Interrupts (interrupts)  Ves: 11, 2L, 3L missing; MMC error; output overload (8); encoder surpoverload; differential wire break; parameterization error; SSI messag frame overflow  • Hardware interrupt  Pes: 8 available; for generation by user program  Diagnoses  • Wire-break in signal transmitter cable • Overflow/underflow • missing load voltage  Diagnoses  • Wire-break in signal transmitter cable • Overflow/underflow • missing load voltage  Diagnoses  • Wire-break in signal transmitter cable • Courting value (interview) • Missing load voltage  Pes  • RUN/STOP LED • Module supply 5 V DC (green) • Ves • Micro Memory Card error MCF (red) • Micro Memory Card error MCF (red) • Status indicator digital input (green) • Status indicator digital output (green) • Overload encoder supply voltage 5 V F (red) • Overload encoder supply voltage 5 V F (red) • Overload encoder supply voltage 5 V F (red) • Overload encoder supply voltage 5 V F (red)  Counting range, description  Counting range, description  Counting range, upper limit • Counting range, upper limit • Counting mode, continuous •	<ul> <li>Counting direction, backward</li> </ul>	Yes
Interfaces	Response times	
Point-to-point connection  • Updating times    Diagnostics (Status Information)   Alarms   Diagnostic alarm	Input- to output response time	
Updating times  Interrupts/diagnostics/status information  Alarms  Diagnostic alarm  Diagnostic alarm  Pes; 1L, 2L, 3L missing; MMC error; output overload (8): encoder sup overload; differential wire break; parameterization error; SSI messag frame overflow  Hardware interrupt  Hardware interrupt  Pes; 8 available; for generation by user program  Diagnoses  Wire-break in signal transmitter cable Overflowfunderflow Pes  Missing load voltage  Diagnostics indication LED  RUN/STOP LED Module supply 5 V DC (green) Pes  Micro Memory Card error MCF (red) Group error SF (red) Status indicator digital input (green) Overload encoder supply voltage 24 V F (red) Overload encoder supply voltage 5 V F (red) Pes  Counter  Counting range, description  Counting range, description  Counting range, lower limit Counting range, lower limit Counting mode, individual Counting mode, individual Counting mode, continuous Pes  Counting mode, individual Counting mode, continuous Pes  Counting mode, periodic Potential separation  Potential separation digital inputs  Potential separation digital inputs  Ambient conditions  Ambient temperature during operation  max, Ambient temperature during storage/transportation	Interfaces	
Interrupts/diagnostics/status information  Alarms  Diagnostic alarm  Plagnostic alarm  Plagnostic alarm  Plagnoses  Hardware interrupt  Pes: 11, 21, 31, missing; MMC error; output overload (8); encoder sup overload; differential wire break; parameterization error; SSI messag frame overflow  Pes: 8 available; for generation by user program  Diagnoses  Wire-break in signal transmitter cable  Overflow/underflow  missing load voltage  Pes  Diagnostics indication LED  RDINSTOP LED  Module supply 5 V DC (green)  For Status IoF (red)  Group error SF (red)  Status indicator digital input (green)  Overload encoder supply voltage 24 V F (red)  Overload encoder supply voltage 5 V F (red)  Overload encoder supply voltage 5 V F (red)  Counting range, description  Counting range, lower limit  Counting range, lower limit  Counting range, upper limit  Counting mange, individual  Counting mode, individual  Counting mode, individual  Counting mode, continuous  Counting mode, continuous  Counting mode, periodic  Potential separation  Ambient conditions  Ambient conditions  Ambient temperature during operation  Pisca variable; for generation by user program  Pes: 10 to 1, 31, 31, 31, 31, 31, 31, 31, 31, 31,	·	
Alarms  Diagnostic alarm  Diagnoses  Hardware interrupt  Diagnoses  Wire-break in signal transmitter cable Overflow/underflow Mire-break in signal transmitter cable Wes Mire-break in signal transmitter cable Ves Mire-break in signal transmitter cable Yes Wes Wes Wes Wes Wes Wes Wes Wes Wes W		PLC interface: 1.7 ms
Plagnostic alarm  Yes; 1L, 2L, 3L missing; MMC error; output overload (8); encoder sup overload; differential wire break; parameterization error; SSI messag frame overflow  Hardware interrupt  Page 8  Wire-break in signal transmitter cable Overflow/underflow missing load voltage Potential super broad voltage  Potential separation  Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Page 10 °C Counting mode, continuous Potential separation digital inputs Potential separation digital inputs Page (7 °C Counting mans.)  Potential separation digital inputs Page (7 °C Counting mans.)  Potential separation digital inputs Potential separation during storage/transportation  Potential separature during storage/transportation	Interrupts/diagnostics/status information	
overload; differential wire break; parameterization error; SSI messag frame overflow ves, 8 available; for generation by user program  Diagnoses  • Wire-break in signal transmitter cable • Overflow/underflow • missing load voltage • RUN/STOP LED • RUN/STOP LED • Module supply 5 V DC (green) • I/O status IOF (red) • Micro Memory Card error MCF (red) • Group error SF (red) • Status indicator digital input (green) • Status indicator digital output (green) • Status indicator digital output (green) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply voltage 5 V F (red)  Counter  Counting range, description  Counting range, lower limit - 2 147 483 648  Counting range, lower limit - 2 147 483 647  Counting mode, individual • Counting mode, continuous • Counting mode, continuous • Counting mode, periodic  Potential separation  between 1L and 2L and 3L  Potential separation  between 1L and 2L and 3L  Potential separation digital inputs  • max.  Ambient conditions	Alarms	
Diagnoses	Diagnostic alarm	Yes; 1L, 2L, 3L missing; MMC error; output overload (8); encoder supply overload; differential wire break; parameterization error; SSI message frame overflow
Diagnoses	Hardware interrupt	Yes; 8 available; for generation by user program
Overflow/underflow imissing load voltage  Piagnostics indication LED  RNIN/STOP LED Nidule supply 5 V DC (green) Nidro Memory Card error MCF (red) Status IOF (red) Status indicator digital input (green) Status indicator digital output (green) Overload encoder supply voltage 24 V F (red) Overload encoder supply voltage 5 V F (red) Overload encoder supply voltage 5 V F (red) Counting range, description  Counting range, description  Counting range, lower limit Counting range, upper limit Counting mode, continuous Counting mode, continuous Counting mode, periodic  Potential separation between 1L and 2L and 3L Potential separation digital inputs Ambient conditions  Ambient temperature during operation  Micro V PS  Potential separation digital inputs Ambient temperature during operation  Micro V PS  Potential separation digital inputs Ambient temperature during operation  Micro V PS  Potential separation digital inputs Ambient temperature during operation  Micro V PS  Potential separation digital inputs Ambient temperature during operation  Micro V PS  Potential separation digital inputs Ambient temperature during operation  Micro V PS  Potential separation digital inputs Ambient temperature during storage/transportation	Diagnoses	
missing load voltage     Piagnostics indication LED     RUN/STOP LED     Module supply 5 V DC (green)     Wes     Module supply 5 V DC (green)     Wes     Micro Memory Card error MCF (red)     Status indicator digital input (green)     Status indicator digital input (green)     Status indicator digital output (green)     Status indicator digital inputs     Status indicator digital input	Wire-break in signal transmitter cable	Yes
Diagnostics indication LED  RUN/STOP LED  Module supply 5 V DC (green)  Wes  Module supply 5 V DC (green)  Wes  Micro Memory Card error MCF (red)  Status indicator digital input (green)  Status indicator digital output (green)  Overload encoder supply voltage 24 V F (red)  Overload encoder supply voltage 5 V F (red)  Counting range, description  Counting range, description  Counting range, description  Counting range, description  Counting range, lower limit  Counting range, upper limit  Counting range, upper limit  Counting mode  Counting mode  Counting mode, continuous  Counting mode, continuous  Pes  Counting mode, periodic  Pes  Potential separation  between 1L and 2L and 3L  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Ambient temperature during operation  min.  max.  Module Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	Overflow/underflow	Yes
RUN/STOP LED  Module supply 5 V DC (green)  I/O status IOF (red)  Micro Memory Card error MCF (red)  Status indicator digital input (green)  Overload encoder supply voltage 24 V F (red)  Overload encoder supply voltage 5 V F (red)  Counting range, description  Counting range, lower limit  Counting range, lower limit  Counting mange, lower limit  Counting mode, continuous  Counting mode, individual  Counting mode, continuous  Counting mode, periodic  Potential separation  between 1L and 2L and 3L  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Ambient temperature during operation  max.  Ambient temperature during storage/transportation	missing load voltage	Yes
Module supply 5 V DC (green)  I/O status IOF (red)  Micro Memory Card error MCF (red)  Group error SF (red)  Status indicator digital input (green)  Status indicator digital output (green)  Overload encoder supply voltage 24 V F (red)  Overload encoder supply voltage 5 V F (red)  Counting range, description  Counting range, description  Counting range, description  Counting range, lower limit  Counting range, oupper limit  Counting range, upper limit  Counting mode  Counting mode, individual  Counting mode, continuous  Counting mode, continuous  Counting mode, periodic  Potential separation  between 1L and 2L and 3L  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation	Diagnostics indication LED	
I/O status IOF (red) Micro Memory Card error MCF (red) Status indicator digital input (green) Status indicator digital output (green) Status indicator digital input (yes; I 0 to I 11 Yes; Q 0 to Q 7 Yes Courting range (ascription)  Counting range, description  Counting range (ascription within this range) Counting range, lower limit Status as 647 (user-specific within this range) Status as 647 Counting mode Counting mode, individual Status as 647 Counting mode, individual Status as 647 Counting mode, continuous Status as 647  Counting mode, periodic Yes  Potential separation  between 1L and 2L and 3L Yes  Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Status indicator Input (prem) Yes; Yes CPU, I/O and sensor units are isolated Ambient conditions  Ambient temperature during operation Status indicator input (prem) Yes Status input (prem) Yes Status input (prem) Yes Status indicator input (prem) Yes Status input (prem) Yes Status input (prem) Yes Statu	RUN/STOP LED	Yes
Micro Memory Card error MCF (red)     Group error SF (red)     Status indicator digital input (green)     Status indicator digital output (green)     Overload encoder supply voltage 24 V F (red)     Overload encoder supply voltage 25 V F (red)     Overload encoder supply voltage 5 V F (red)     Overload encoder supply voltage 5 V F (red)  Counting range, description  Counting range, description  Counting range, lower limit     Counting range, lower limit     Counting range, upper limit     Counting range, upper limit     Counting mode     Counting mode     Counting mode, continuous     Counting mode, periodic     Yes  Potential separation  between 1L and 2L and 3L  Potential separation digital inputs     Potential separation digital inputs     Potential separation digital inputs     Potential separation digital inputs     Ambient conditions  Ambient temperature during operation     • min.     • max.  Ambient temperature during storage/transportation	<ul> <li>Module supply 5 V DC (green)</li> </ul>	Yes
Group error SF (red) Status indicator digital input (green) Status indicator digital output (green) Overload encoder supply voltage 24 V F (red) Overload encoder supply voltage 5 V F (red)  Counter  Counting range, description  Counting range, description  Counting range, lower limit Counting range, lower limit Counting range, lower limit Counting range, upper limit Counting mode, individual Counting mode, individual Counting mode, continuous Counting mode, periodic  Potential separation  Between 1L and 2L and 3L Potential separation digital inputs Potential separation digital inputs Potential separature during operation  min. min. min. min. min. min. min. mi	<ul> <li>I/O status IOF (red)</li> </ul>	Yes
Status indicator digital input (green) Status indicator digital output (green) Overload encoder supply voltage 24 V F (red) Overload encoder supply voltage 5 V F (red)  Counter  Counting range, description  Counting range, lower limit Counting range, lower limit Counting range, upper limit Counting mode  Counting mode  Counting mode, individual Counting mode, continuous Counting mode, periodic  Counting mode, periodic  Potential separation  between 1L and 2L and 3L Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Ambient conditions  Ambient temperature during operation  min.  max.  Ambient temperature during storage/transportation  Yes  Yes  Yes  Counting range (16-bit counters): -32 768 to 32 767 (user-specific with this range)  Counting range (32-bit counters): -2 147 483 648 to 2 147  Yes  2 147 483 648  Counting mange, upper limit Pyes  -2 147 483 648  Yes  -2 147 483 647  Yes  -2 147 483 648  Yes  -2 147 483 647  Counting mode, continuous Yes  -2 147 483 648  Yes  -2 147 483 6	<ul> <li>Micro Memory Card error MCF (red)</li> </ul>	Yes
Status indicator digital output (green) Overload encoder supply voltage 24 V F (red) Overload encoder supply voltage 5 V F (red) Counter  Counting range, description  Counting range, description  Counting range, lower limit Counting range, lower limit Counting range, upper limit Counting mode Counting mode Counting mode, individual Counting mode, continuous Counting mode, periodic Yes  Potential separation  between 1L and 2L and 3L Potential separation digital inputs Potential separation digital inputs  Potential separation digital inputs Potential separation dig	<ul> <li>Group error SF (red)</li> </ul>	Yes
Overload encoder supply voltage 24 V F (red) Overload encoder supply voltage 5 V F (red)  Counter  Counting range, description  Counting range, description  Counting range, counting range (16-bit counters): -32 768 to 32 767 (user-specific with this range); counting range (32-bit counters): -2 147 483 648 to 2 147 483 647 (user-specific within this range)  Counting range, lower limit  -2 147 483 648  Counting range, upper limit  2 147 483 647  Counting mode  Counting mode, individual Yes  Counting mode, continuous Yes  Counting mode, periodic  Yes  Potential separation  between 1L and 2L and 3L  Potential separation digital inputs  O °C  max.  Ambient temperature during operation  min.  O °C  60 °C  Ambient temperature during storage/transportation	<ul> <li>Status indicator digital input (green)</li> </ul>	Yes; I 0 to I 11
Overload encoder supply voltage 5 V F (red)  Counter  Counting range, description  Counting range, description  Counting range (16-bit counters): -32 768 to 32 767 (user-specific wit this range); counting range (32-bit counters): -2 147 483 648 to 2 147 483 647 (user-specific within this range)  Counting range, lower limit  Counting range, upper limit  Counting mode  Counting mode  Counting mode, individual  Counting mode, continuous  Counting mode, continuous  Counting mode, periodic  Yes  Potential separation  between 1L and 2L and 3L  Potential separation digital inputs  O °C  max.  Ambient temperature during operation  min.  O °C  60 °C  Ambient temperature during storage/transportation	<ul> <li>Status indicator digital output (green)</li> </ul>	Yes; Q 0 to Q 7
Counting range, description  Counting range (16-bit counters): -32 768 to 32 767 (user-specific wit this range); counting range (32-bit counters): -2 147 483 648 to 2 147 483 647 (user-specific within this range)  Counting range, lower limit  -2 147 483 648  Counting range, upper limit  2 147 483 647  Counting mode  • Counting mode, individual  • Counting mode, continuous  • Counting mode, periodic  Potential separation  between 1L and 2L and 3L  Potential separation digital inputs  • Potential separation digital inputs	<ul> <li>Overload encoder supply voltage 24 V F (red)</li> </ul>	Yes
Counting range, description  Counting range (16-bit counters): -32 768 to 32 767 (user-specific wit this range); counting range (32-bit counters): -2 147 483 648 to 2 147 483 647 (user-specific within this range)  Counting range, lower limit  -2 147 483 648  Counting range, upper limit  2 147 483 647  Counting mode  • Counting mode, individual  • Counting mode, continuous  • Counting mode, periodic  Potential separation  between 1L and 2L and 3L  Potential separation digital inputs  • Potential separation digital inputs  • Potential separation digital inputs  Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation	Overload encoder supply voltage 5 V F (red)	Yes
this range); counting range (32-bit counters): -2 147 483 648 to 2 147 483 647 (user-specific within this range)  Counting range, lower limit -2 147 483 648  Counting range, upper limit -2 147 483 647  Counting mode  Counting mode, individual -2 147 483 647  Counting mode, continuous -2 147 483 647  Counting mode, continuous -2 147 483 647  Counting mode, periodic -3 147 483 647  Potential separation  between 1L and 2L and 3L -3 147 483 647  Potential separation between 1L and 2L and 3L -4 147 483 647  Potential separation digital inputs -4 147 483 648  Potential separation between 1L and 2L and 3L -4 147 483 648  Potential separation digital inputs -4 147 483 648  Potential separation digital inputs -4 147 483 648  Yes -2 147 483 647	Counter	
Counting range, upper limit  Counting mode  Counting mode, individual Counting mode, continuous Counting mode, continuous Counting mode, periodic Yes  Counting mode, periodic Yes  Potential separation  between 1L and 2L and 3L Yes  Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Yes; Yes CPU, I/O and sensor units are isolated  Ambient conditions  Ambient temperature during operation min. min. 0°C max.  Counting mode O'C Counting mode	Counting range, description	Counting range (16-bit counters): -32 768 to 32 767 (user-specific within this range); counting range (32-bit counters): -2 147 483 648 to 2 147 483 647 (user-specific within this range)
Counting mode  Counting mode, individual Counting mode, continuous Counting mode, continuous Counting mode, periodic Yes Counting mode, periodic Yes  Potential separation  between 1L and 2L and 3L Yes  Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Yes; Yes CPU, I/O and sensor units are isolated  Ambient conditions  Ambient temperature during operation  min. min. min. 0 °C 60 °C  Ambient temperature during storage/transportation	Counting range, lower limit	-2 147 483 648
Counting mode, individual Counting mode, continuous Counting mode, continuous Counting mode, periodic  Potential separation between 1L and 2L and 3L  Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  O °C  min.  mi	Counting range, upper limit	2 147 483 647
Counting mode, continuous Counting mode, periodic  Potential separation  between 1L and 2L and 3L  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Yes; Yes CPU, I/O and sensor units are isolated  Ambient conditions  Ambient temperature during operation  min.  min.  max.  0 °C  60 °C  Ambient temperature during storage/transportation	Counting mode	
Counting mode, periodic      Potential separation  between 1L and 2L and 3L  Potential separation digital inputs      ● Potential separation digital inputs      Potential separation digital inputs      Potential separation digital inputs      Yes; Yes CPU, I/O and sensor units are isolated  Ambient conditions  Ambient temperature during operation      ● min.      ● max.      ● max.      Ambient temperature during storage/transportation	<ul> <li>Counting mode, individual</li> </ul>	Yes
Potential separation  between 1L and 2L and 3L  Potential separation digital inputs  • Potential separation digital inputs  • Potential separation digital inputs  Ambient conditions  Ambient temperature during operation  • min.  • max.  60 °C  Ambient temperature during storage/transportation	<ul> <li>Counting mode, continuous</li> </ul>	Yes
between 1L and 2L and 3L  Potential separation digital inputs  • Potential separation digital inputs  Yes; Yes CPU, I/O and sensor units are isolated  Ambient conditions  Ambient temperature during operation  • min.  • max.  60 °C  Ambient temperature during storage/transportation	Counting mode, periodic	Yes
Potential separation digital inputs  • Potential separation digital inputs  Yes; Yes CPU, I/O and sensor units are isolated  Ambient conditions  Ambient temperature during operation  • min.  • max.  60 °C  Ambient temperature during storage/transportation	Potential separation	
Potential separation digital inputs     Yes; Yes CPU, I/O and sensor units are isolated  Ambient conditions  Ambient temperature during operation     ● min.     ● max.     ● max.     60 °C  Ambient temperature during storage/transportation	between 1L and 2L and 3L	Yes
Ambient conditions  Ambient temperature during operation  • min.  • max.  • max.  60 °C  Ambient temperature during storage/transportation	Potential separation digital inputs	
Ambient temperature during operation	Potential separation digital inputs	Yes; Yes CPU, I/O and sensor units are isolated
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<ul> <li>min.</li> <li>max.</li> <li>60 °C</li> <li>Ambient temperature during storage/transportation</li> </ul>	Ambient conditions	
Ambient temperature during storage/transportation		
Ambient temperature during storage/transportation	Ambient temperature during operation	0 °C
	Ambient temperature during operation	
<ul> <li>• min.</li> <li>-40 °C</li> </ul>	Ambient temperature during operation	

• max.	70 °C
configuration / header	
configuration / programming / header	
<ul> <li>Program cycle time (scan)</li> </ul>	1 µs
connection method / header	
required front connector	1x 40-pin
Dimensions	
Width	80 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	434 g; Module weight: approx. 434 g (with 1L connection and without I/O connection or MMC); shipping weight: approx. 500 g (with bus and 1L connection and without I/O connection or MMC)
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