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+	
Rated value (DC)	24 V
 permissible range, lower limit (DC) 	20.4 V
 permissible range, upper limit (DC) 	28.8 V
 Reverse polarity protection 	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
 Output current, max. 	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)	

- long to find a company (with a find a delay of 0.4 max) may	200 H I=
 Input frequency (with a time delay of 0.1 ms), max. 	200 kHz
programmable digital filter delay Minimum pulses width for the program reportions	None, 5 µs, 10 µs, 15 µs, 20 µs, 50 µs, 1.6 ms
Minimum pulse width for program reactions	1 μs, 5 μs, 10 μs, 15 μs, 20 μs, 50 μs, 1,6 ms
for standard inputs	2 us; tvn 1.5 us
— at "0" to "1", max. Cable length	3 μs; typ. 1.5 μs
shielded, max.	600 m
unshielded, max. unshielded, max.	100 m; Shielded cable recommended if filtering delay is set to less than
unsilielded, max.	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
■ for signal "0" residual current, max.	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	
with resistive load, max.	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	000
• shielded, max.	600 m
unshielded, max.	100 m
Encoder	
Connectable encoders	
Incremental encoder (symmetrical)	Yes
Incremental encoder (asymmetrical) Absolute area day (COI)	Yes
Absolute encoder (SSI)	Yes
• 2-wire sensor	Yes
 permissible quiescent current (2-wire sensor), max. 	1.5 mA
Encoder signals, incremental encoder (symmetrical)	
Trace mark signals	A, notA, B, notB
Zero mark signal	N, notN
Input voltage	5 V difference signal (phys. RS 422)
Input frequency, max.	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)	000 M IZ
Trace mark signals	A, B
Zero mark signal	N
Input voltage	24 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, sh	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	 Clock signal 	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	 Telegram length, parameterizable 	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 in Carlo (Fred) • RNINSTOP LED • Midro Memory Card error MCF (red) • Status indicator digital input (green) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply voltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply woltage 24 V F (red) • Overload encoder supply	 Clock frequency, max. 	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	 Cable length, shielded, max. 	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	 Monoflop time 	settable: 16/32/48/64 µs
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• 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	 Counting direction, forward 	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 - 2 147 483 648 Counting range, upper limit - 2 147 483 647 Counting mode, endividual • Counting mode, continuous	 Counting direction, backward 	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	
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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
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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
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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	 Counting mode, individual 	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	 Counting mode, continuous 	Yes
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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
	A 11 / 11/1	
 min. max. 60 °C Ambient temperature during storage/transportation 	Ambient conditions	
Ambient temperature during storage/transportation		
Ambient temperature during storage/transportation	Ambient temperature during operation	0 °C
	Ambient temperature during operation	
 • min. -40 °C 	Ambient temperature during operation	

• max.	70 °C
configuration / header	
configuration / programming / header	
 Program cycle time (scan) 	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)
last modified:	1/16/2021 🗗