SIEMENS

Data sheet

6ES7352-5AH01-0AE0



SIMATIC S7-300, FM352-5 with NPN 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)	
 Input frequency (with a time delay of 0.1 ms), max. 	200 kHz

Millimum pulse width for program reactions for standard injude	and the state of t	Name 5 viz 40 viz 45 viz 00 viz 50 viz 40 viz
For standard inputs - all "O" to"", max. Subside length - inhabided, max. Unified of digital outputs Summer of digital outputs - Response threshold, typ. Limitation of inductive shututions voitage to - Response threshold, typ. Limitation of inductive shututions voitage to - Response threshold, typ. Limitation of inductive shututions voitage to - Response threshold, typ. Limitation of inductive shututions voitage to - Response threshold, typ. Limitation of inductive shututions voitage to - Response threshold, typ. Limitation of inductive shututions voitage to - Response threshold typ. - On lamp load, max. - Or signal "1" part and value - For part "1" part and value - F	programmable digital filter delay	None, 5 µs, 10 µs, 15 µs, 20 µs, 50 µs, 1.6 ms
	· · · · · · · · · · · · · · · · · · ·	1 μs, 5 μs, 10 μs, 15 μs, 20 μs, 50 μs, 1,6 ms
Selection Content Co	·	
enhelbed, max		3 μs; typ. 1.5 μs
unshalded, max. Number of digital outputs 8 Current-anking Yes Current-anking Yes Current-anking No Short-icruit protection Paraponse threshold, typ. Limitation of inductive shautown voltage to Paraponse threshold, typ. Limitation of inductive shautown voltage to Paraponse threshold, typ. Limitation of inductive shautown voltage to Paraponse threshold, typ. Limitation of inductive shautown voltage to Paraponse threshold, typ. Limitation of inductive shautown voltage to Paraponse threshold, typ. Limitation of inductive shautown voltage to Paraponse threshold, typ. Limitation of inductive shautown voltage to Paraponse threshold, typ. Limitation of inductive shautown voltage to Paraponse threshold, typ. Limitation of inductive shautown voltage to Paraponse threshold, typ. Limitation of inductive shautown voltage to Paraponse threshold typ. Limitation of inductive shautown voltage to Paraponse threshold typ. Limitation of inductive shautown voltage to Paraponse threshold typ. Limitation of inductive shautown voltage to Paraponse threshold value Paraponse voltage protection, thermal protection Paraponse voltage voltage voltage Paraponse voltage voltage Paraponse voltage voltage Paraponse voltage voltage Paraponse vol	Cable length	
Number of digital outputs Section Sectio	shielded, max.	600 m
Number of digital outputs Current-sinking Yes Current-sourcing No Short-circuit protection Response threshold, typ. 1.7 to 3.5 A Limitation of inductive shutdown valtage to Controlling a digital input Switching capacity of the outputs on lomp load, max. Switching capacity of the outputs on lomp load, max. Switching capacity of the outputs on lomp load, max. Switching capacity of the outputs on long load in max. Switching capacity of the outputs on long load max. Switching capacity of the outputs on long load, max. Switching capacity of the outputs of resignal ""1", max. Switching capacity of the outputs of resignal ""1", max. Switching capacity of the outputs of resignal ""1", max. Switching capacity of the outputs of resignal ""1", max. Switching load of the outputs of resignal ""1", max. Switching load of the outputs of resignal ""1", max. Switching load outputs of resignal ""1", permissible range for 0 to 60 "C, mix. Switching fequency of resignal ""1", max. Switching load outputs of resignal ""1", max. Switching fequency of the outputs of resignal ""1", max. Switching fequency of the outputs of	unshielded, max.	100 m; Shielded cable recommended if filtering delay is set to less than 1.6 ms
Current-sinking Yes Current-sourcing No No Nort-circuit protection Press Overvoltage protection, thermal protection Press Overvoltage Press Overvoltage protection, thermal protection Press Overvoltage Press Overv	Digital outputs	
Current-sourcing No Yes, Overvoltage protection, thermal protection Responses threshold, typ. 1.7 to 3.5 A 2M -45 V by., (-40 V to -55 V); comment: no protection against inductive kickback > 55 m.] No Switching capacity of the outputs - on lamp load, max SW Cutput voltage - Readed value (PC) - for signal "1", max - or signal "1", max - or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min of or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" permissible range for 0 to 60 °C, min or signal "1" pe	Number of digital outputs	8
Short-circuit protection	Current-sinking	Yes
Elmitation of inductive shutdown voltage to 2M - 45 V by., (-40 V to -55 V); comment: no protection against inductive Notable on a protection against inductive Notable of Service (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable Notable notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable Notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable Notable notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable notable (1998). (-40 V to -55 V); comment: no protection against inductive Notable notable (1998). (-50 V to -55 V); comment: no protection against inductive Notable notable (1998). (-50 V to -55 V); comment: no protection against inductive Notable no	Current-sourcing	No
Limitation of inductive shutdown voltage to 24M - 45 V typ, - (-40 V to -55 V); comment: no protection against inductive kickback > 55 mJ Switching capacity of the outputs on lamp load, max for signal "0", max. of or signal "1", max. of or signal "1" permissible range for 0 to 60 °C, mix. of or 0 signal "1" permissible range for 0 to 60 °C, mix. of or 1 permissible range for 0 to 60 °C, mix. of or 1 permissible range for 0 to 60 °C, mix. of or 1 permissible range for 0 to 60 °C, mix. of or 1 permissible range for 0 to 60 °C, mix. of or 1 permissible range for 0 to 60 °C, mix. of or 1 permissible range for 0 to 60 °C, mix. of on 1 permissible range for 0 to	Short-circuit protection	Yes; Overvoltage protection, thermal protection
Limitation of inductive shutdown voltage to 2M. 45 V pp., (-40 V to -55 V); comment: no protection against inductive kickback > 55 mJ No Switching capacity of the outputs on lamp load, max of or signal "1", max. O.5 V Coutput current of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of or signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissible range for 0 to 60 °C, min. of signal "1" permissib	Response threshold, typ.	1.7 to 3.5 A
Switching capacity of the outputs on lamp load, max. 5 W Output votage Rated value (DC) for signal "1", max. of sygnal "1", max. of sygnal "1" permissible range for 0 to 60 "C, min. for signal "1" permissible range for 0 to 60 "C, min. for signal "1" permissible range for 0 to 60 "C, min. for signal "1" permissible range for 0 to 60 "C, min. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for signal "1" permissible range for 0 to 60 "C, max. for uprating the signal signa	•	
on lamp load, max. Output voltage Rated value (DC) for signal "0", max.	Controlling a digital input	No
• on lamp load, max. Output voltage • Rated value (DC) • for signal "0", max. • for signal "1", max. O.5 V Output current • for signal "1" permissible range for 0 to 60 "C, min. • for signal "1" permissible range for 0 to 60 "C, min. • for signal "1" permissible range for 0 to 60 "C, max. • for signal "1" permissible range for 0 to 60 "C, max. • for signal "1" permissible range for 0 to 60 "C, max. • for signal "1" permissible range for 0 to 60 "C, max. • for signal "0" residual current, max. Output delay with resistive load • "0" to "1", max. • "1" to "0", max. • "1" to "0", max. • "1" to "0", max. • for uprating Yes: 2 Switching frequency • with resistive load, max. • with inductive load, max. • on lamp load, max. • on lamp load, max. • on lamp load, max. • on la	Switching capacity of the outputs	
Cutput voltage	·	5 W
Rated value (DC) for signal 1°C, max. for signal 1°C, max		
• for signal "1", max. • for signal "1", max. 0,5 V Output current • for signal "1" rated value • for signal "1" permissible range for 0 to 60 "C, min. • for signal "1" permissible range for 0 to 60 "C, min. • for signal "0" residual current, max. 1 mA Output delay with resistive load • "0" to "1", max. • "1" to "0", max. 1 ,5 us; 1.7 us 50 mA / 1.5 us 0.5 A * "1" to "0", max. • "1" to "0", max. • "1" to "0", max. • for signal "0" sedual current, max. 1 us; 0.6 us 50 mA / 1.5 us 0.5 A * "1" to "0", max. • for signal "0" sedual current, max. 10 kHz; 20 kHz at 0.5 A; 100 kHz at 0.25 A * with inductive load, max. • on lamp load, max. • shielded, max. • on lamp load, max. •	1 0	24 V
• for signal "1", max. Output current • for signal "1" permissible range for 0 to 60 "C, min. • for signal "1" permissible range for 0 to 60 "C, min. • for signal "0" residual current, max. • "1" to "0", max. • with inductive load, max. • with inductive load, max. • unith inductive load, max. • on lamp load, max. • unshielded, max. • unshielded, max. • incremental encoder (symmetrical) • incremental encoder (symmetrical) • incremental encoder (symmetrical) • Zewire sensor • permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max.	,	
Output current • for signal *1" reted value • for signal *1" permissible range for 0 to 60 °C, min. • for signal *1" permissible range for 0 to 60 °C, max. • for signal *1" permissible range for 0 to 60 °C, max. • for signal *1" permissible range for 0 to 60 °C, max. • for signal *1" permissible range for 0 to 60 °C, max. • for signal *1" permissible range for 0 to 60 °C, max. • for signal *1" permissible range for 0 to 60 °C, max. • *1" to "0" *1", max. • *1		
• for signal "1" rated value • for signal "1" permissible range for 0 to 60 °C, min. • for signal "1" permissible range for 0 to 60 °C, max. • for signal "0" residual current, max. Output delay with resistive load • "0" to "1", max. • "1" to "0", max. • "1" to "0", max. • "1" to "0", max. • "1" to "0", max. • "1" to "0", max. • "1" to "0", max. • "1" to "0", max. • "1" to "0", max. • "1" to "0", max. • "1" to "0", max. • with resistive load, max. • with inductive load, max. • with inductive load, max. • on lamp load, max. • on lamp load, max. • shielded, max. • unshielded, max. • Incremental encoder (symmetrical) • Incremental encoder (symmetrical) • Incremental encoder (symmetrical) • Absolute encoder (SS) • 2-wire sensor — permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Trace mark signal • Trace mark signal • Put voltage • Input voltage • Input voltage • Input voltage • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal		0.5 V
for signal "1" permissible range for 0 to 60 °C, min. for signal "1" permissible range for 0 to 60 °C, max. for signal "0" residual current, max. 1	·	0.5.4.44.00.90
• for signal "1" permissible range for 0 to 60 °C, max. • for signal "0" residual current, max. Output delay with resistive load • "0" to "1", max. 1		
• for signal "0" residual current, max. Output delay with resistive load • "0" to "1", max. • "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. • with inductive load, max. • with inductive load, max. • on lamp load, max. • on lamp load, max. • unshielded, max. • unshielded, max. • unshielded, max. • loo m • loo m • loo m Encoder Connectable encoder (symmetrical) • loremental encoder (symmetrical) • 2-wire sensor — permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Input frequency, max. • Cable length, shielded, max.		
Output delay with resistive load • "0" to "1", max. • "1" to "0", max. • "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. • with inductive load, max. • on lamp load, max. • long the delay in the sternal commutator diodes; 0.5 Hz at 0.5 A without external commutator diodes • on lamp load, max. • on lamp load, max. • unshielded, max. • unshielded, max. • unshielded, max. • loncremental encoder (symmetrical) • Incremental encoder (symmetrical) • Absolute encoder (SSI) • 2-wire sensor — permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. 100 m; 100 m with 24 V supply and 500 kHz; 32 m with 5 V supply and 50 kHz; 25 m shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Parce mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Parce mark		
*0" to "1", max. *1" to "0", max. *1" to "0", max. *1" to "0", max. Parallel switching of two outputs *6 or uprating Switching frequency *with resistive load, max. *with inductive load, max. *with inductive load, max. **on lamp load, max. **on lamp load, max. **unshielded, max. **unshielded, max. **unshielded, max. **unshielded, max. **unshielded, max. **on lame la encoder (symmetrical) **linermental encoder (asymmetrical) **absolute encoder (SSI) **2-wire sensor **—permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) **Trace mark signal **Input frequency, max. **Cable length, shielded, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shielded, max. **Doubt frequency, max. **Cable length, shie		1 mA
• "1" to "0", max. Parallel switching of two outputs • for uprating Yes; 2 Switching frequency • with resistive load, max. • with inductive load, max. • on lamp load, max. • on lamp load, max. • shielded, max. • unshielded, max. • Incremental encoder (symmetrical) • Incremental encoder (SSI) • Zewire sensor — permissible quiescent current (2-wire sensor), max. Encoder Signals, incremental encoder (symmetrical) • Trace mark signal • Input requency, max. • Cable length, shielded, max. • On lamp load, max. • Unshielded, max. • Incremental encoder (symmetrical) • Absolute encoder (SSI) • Zero mark signal • Trace mark signal • Input requency, max. • Cable length, shielded, max. • On the "Trace mark signal • Input requency, max. • Cable length, shielded, max. • On the "Trace mark signal • Trace mark signal • Input requency, max. • Cable length, shielded, max. • On the Unique of Structure of Structu	Output delay with resistive load	
Parallel switching of two outputs • for uprating Switching frequency • with resistive load, max. • with inductive load, max. • on lamp load, max. • on lamp load, max. • shielded, max. • unshielded, max. • unshielded, max. • lincremental encoder (symmetrical) • lincremental encoder (sSI) • 2-wire sensor — permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) • Trace mark signals • Input voltage • Input frequency, max. • Cable length, shielded, max. • On lamp load, max. • On lamp load, max. • On max. • Incremental encoder (symmetrical) • Yes • Absolute encoder (SSI) • Yes • 2-wire sensor — permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) • Trace mark signals • Zero mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. • Cable length, shielded, max. • On my 100 m with 24 V supply and 500 kHz; 32 m with 5 V supply and 50 my; 100 m with 24 V supply and 500 kHz; 32 m with 5 V supply and 50 my; 100 m with 24 V supply and 500 kHz; 32 m with 5 V supply and 50 my; 100 my; 100 m with 24 V supply and 500 kHz; 32 m with 5 V supply and 50 my; 100 my; 1	• "0" to "1", max.	1 μs; 0.6 μs 50 mA / 1.0 μs 0.5 A
• for uprating Yes; 2 Switching frequency • with resistive load, max. • with inductive load, max. • with inductive load, max. • on lamp load, max. • on lamp load, max. • unshielded, max. • unshielded, max. • unshielded, max. • loo m • loncremental encoder (symmetrical) • lorcremental encoder (asymmetrical) • Absolute encoder (SSI) • Absolute encoder (SSI) • Absolute encoder (symmetrical) • Trace mark signal • Trace mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. • On metable encoder (symmetrical) • Trace mark signal • Trace mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. • On m; 100 m; 100 m with 24 V supply and 500 kHz; 32 m with 5 V supply and 50 kHz • Zero mark signal • Trace mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max.	• "1" to "0", max.	1.5 µs; 1.7 µs 50 mA / 1.5 µs 0.5 A
with resistive load, max. with inductive load, max. 100 kHz; 20 kHz at 0.5 A; 100 kHz at 0.25 A with inductive load, max. 10 hz 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 shielded, max. unshielded, max. 100 m Encoder Connectable encoders Incremental encoder (symmetrical) Incremental encoder (symmetrical) Absolute encoder (SSI) 2-wire sensor — permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) Trace mark signal A notA, B, notB Zero mark signal Input voltage Input frequency, max. Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) Trace mark signal A B Zero mark signal A NotN South Encoder signals, incremental encoder (asymmetrical) Trace mark signal A B Zero mark signal A B Zero mark signal A B Zero mark signal A B A Cable length, shielded, max.	Parallel switching of two outputs	
 with resistive load, max. with inductive load, max. 2 Hz; 2 Hz at 0.5 A; 100 kHz at 0.25 A 2 Hz; 2 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A withon external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes Cancelled, max. Encoder signals, incremental encoder (symmetrical) Trace mark signal A, B Pare of the properties of the external commutator diodes; 0.5 Hz at 0.5 A with external commutator diodes A, B Pare of the properties of the external commutator diodes A, B A, B A, B<td>for uprating</td><td>Yes; 2</td>	for uprating	Yes; 2
 with inductive load, max. on lamp load, max. 10 Hz Cable length shielded, max. unshielded, max. unshielded, max. floor mental encoder lncremental encoder (symmetrical) Absolute encoder (SSI) 2-wire sensor permissible quiescent current (2-wire sensor), max. Frace mark signals Trace mark signal Input voltage Input voltage Input voltage Incoder signals, incremental encoder (asymmetrical) Trace mark signals Input voltage Input requency, max. Cable length, shielded, max. Trace mark signals Trace mark signals Trace mark signals Input voltage <li< td=""><td>Switching frequency</td><td></td></li<>	Switching frequency	
external commutator diodes on lamp load, max. Cable length shielded, max. ounshielded, max. 100 m Encoder Connectable encoder (symmetrical) Incremental encoder (symmetrical) Absolute encoder (SSI) Pes Permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) Trace mark signals A, notA, B, notB A, notN Input voltage Input frequency, max. Cable length, shielded, max. Encoder signals, incremental encoder (symmetrical) Trace mark signal A, notA, B, notB A, notA,	 with resistive load, max. 	100 kHz; 20 kHz at 0.5 A; 100 kHz at 0.25 A
Cable length • shielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • loncemental encoder (symmetrical) • Incremental encoder (asymmetrical) • Absolute encoder (asymmetrical) • Absolute encoder (SSI) • 2-wire sensor — permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) • Trace mark signals • Zero mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signals • Zero mark signals • Zero mark signals • Input voltage • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Trace m	• 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
shielded, max. unshielded, max. 100 m Encoder Connectable encoders Incremental encoder (symmetrical) Absolute encoder (symmetrical) Yes Absolute encoder (SSI) Yes permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) Trace mark signal A, notA, B, notB N, notN Input voltage Input voltage Input frequency, max. Cable length, shielded, max. Encoder signals, incremental encoder (symmetrical) Trace mark signal N, notN Input voltage Input frequency max. Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) Trace mark signals A, notA, B, notB N, notN Input voltage Input frequency, max. Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) Trace mark signals A, B Cero mark signal Input voltage Input frequency, max. Input frequency, max. Input voltage Input frequency, max. Input freq	● on lamp load, max.	10 Hz
unshielded, max. Encoder Connectable encoders Incremental encoder (symmetrical) Absolute encoder (asymmetrical) Yes Absolute encoder (SSI) Yes - permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) Trace mark signal Input voltage Input frequency, max. Cable length, shielded, max. Encoder signals, incremental encoder (symmetrical) Trace mark signal A, notA, B, notB N, notN Input voltage S V difference signal (phys. RS 422) Input frequency, max. Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) Trace mark signals A, B Zero mark signal A, B Input voltage Input frequency, max. Inp	Cable length	
Encoder Connectable encoders Incremental encoder (symmetrical) Incremental encoder (asymmetrical) Absolute encoder (SSI) Pes - permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) Trace mark signals Zero mark signal Input voltage Input frequency, max. Cable length, shielded, max. Encoder signals, incremental encoder (symmetrical) A, notA, B, notB N, notN Ves Ves A, notA, B, notB N, notN Ves Ves A, notA, B, notB N, notN Ves Ves Ves A, notA, B, notB N, notN Ves Ves Ves A, notA, B, notB N, notN Ves Ves Ves A, notA, B, notB N, notN Ves Ves Ves Ves A, notA, B, notB N, notN Ves Ves Ves Ves Ves A, notA, B, notB N, notN Ves Ves Ves Ves Ves Ves Ves Ve	• shielded, max.	600 m
Connectable encoders Incremental encoder (symmetrical) Incremental encoder (asymmetrical) Incremental encoder (sol) Incremental encoder (sol) Incremental encoder (sol) Incremental encoder (symmetrical) Incremental encoder (asymmetrical) Incremental encoder (asymmet	• unshielded, max.	100 m
 Incremental encoder (symmetrical) Incremental encoder (asymmetrical) Absolute encoder (SSI) 2-wire sensor — permissible quiescent current (2-wire sensor), max. Trace mark signals Zero mark signal Input voltage Input frequency, max. Cable length, shielded, max. Input voltage Trace mark signals Input frequency max. Cable length, shielded, max. Trace mark signal Trace mark signals Input frequency max. Cable length, shielded, max. Trace mark signals Input voltage Input frequency max. Trace mark signals Input voltage Input voltage Input voltage Input frequency, max. Input frequency, max.	Encoder	
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— permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) Trace mark signals Zero mark signal Input voltage Input frequency, max. Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) Trace mark signal A, notA, B, notB N, notN V difference signal (phys. RS 422) Too m; 100 m with 24 V supply and 500 kHz; 32 m with 5 V supply an	, ,	
Encoder signals, incremental encoder (symmetrical) • Trace mark signals • Zero mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signal • Zero mark signal • Input voltage • Input voltage • Input frequency, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) • Trace mark signals • Zero mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. • Cable length, shielded, max. • Cable length, shielded, max.		
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 Input voltage Input frequency, max. Cable length, shielded, max. Trace mark signals Zero mark signal Input voltage Input voltage Input frequency, max. Cable length, shielded, max. 8 V difference signal (phys. RS 422) 500 kHz 100 m; 100 m with 24 V supply and 500 kHz; 32 m with 5 V supply and 500 kHz; 32	-	
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 Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) Trace mark signals Zero mark signal Input voltage Input frequency, max. Cable length, shielded, max. 100 m; 100 m with 24 V supply and 500 kHz; 32 m with 5 V s	•	
Encoder signals, incremental encoder (asymmetrical) • Trace mark signals • Zero mark signal • Input voltage • Input frequency, max. • Cable length, shielded, max. • Cable length, shielded, max. Encoder signals, incremental encoder (asymmetrical) A, B N 24 V 200 kHz 50 m; Cable length, HTL incremental encoder, Siemens, type 6FX2001-4: kHz, 25 m shielded, max., 25 kHz, 50 m shielded, max.		
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 Zero mark signal Input voltage Input frequency, max. Cable length, shielded, max. Cable length, shielded, max. So m; Cable length, HTL incremental encoder, Siemens, type 6FX2001-4: kHz, 25 m shielded, max., 25 kHz, 50 m shielded, max. 	· · · · · ·	
 Input voltage Input frequency, max. Cable length, shielded, max. Cable length, shielded, max. 50 m; Cable length, HTL incremental encoder, Siemens, type 6FX2001-4: kHz, 25 m shielded, max., 25 kHz, 50 m shielded, max. 	Trace mark signals	А, В
 Input frequency, max. Cable length, shielded, max. Cable length, shielded, max. 50 m; Cable length, HTL incremental encoder, Siemens, type 6FX2001-4: kHz, 25 m shielded, max., 25 kHz, 50 m shielded, max. 	Zero mark signal	N
• Cable length, shielded, max. 50 m; Cable length, HTL incremental encoder, Siemens, type 6FX2001-4: kHz, 25 m shielded, max., 25 kHz, 50 m shielded, max.	Input voltage	24 V
kHz, 25 m shielded, max., 25 kHz, 50 m shielded, max.	 Input frequency, max. 	200 kHz
kHz, 25 m shielded, max., 25 kHz, 50 m shielded, max.	Cable length, shielded, max.	50 m; Cable length, HTL incremental encoder, Siemens, type 6FX2001-4: 50
F 1 1 1 1 (00!)		
Encoder signals, absolute encoder (SSI)	Encoder signals, absolute encoder (SSI)	

Data signal	DATA, notDATA
Clock signal	CK, notCK
 Telegram length, parameterizable 	13 or 25 bit
 Clock frequency, max. 	1 MHz; 125 kHz, 250 kHz, 500 kHz or 1 MHz
 Cable length, shielded, max. 	320 m; At 125 kHz
 Monoflop time 	settable: 16/32/48/64 µs
Listening mode	Yes; one or two stations
Multiturn	Yes; 25 bit message frame
Encoder signal evaluation	
 Counting direction, forward 	Yes
Counting direction, backward	Yes
Response times	
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/diagnostics/status information Alarms	
Diagnostic alarm	Yes; 1L, 2L, 3L missing; MMC error; output overload (8); encoder supply
	overload; differential wire break; parameterization errror; SSI message frame overflow
Hardware interrupt	Yes; 8 available; for generation by user program
Diagnoses	
 Wire-break in signal transmitter cable 	Yes
 Overflow/underflow 	Yes
missing load voltage	Yes
Diagnostics indication LED	
RUN/STOP LED	Yes
 Module supply 5 V DC (green) 	Yes
I/O status IOF (red)	Yes
 Micro Memory Card error MCF (red) 	Yes
 Group error SF (red) 	Yes
 Status indicator digital input (green) 	Yes; I 0 to I 11
 Status indicator digital output (green) 	Yes; Q 0 to Q 7
 Overload encoder supply voltage 24 V F (red) 	Yes
Overload encoder supply voltage 5 V F (red)	Yes
Counter	
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 range, lower limit	-2.14748E+9
Counting range, upper limit	2.14748E+9
Counting mode	2.1.1.102.0
Counting mode, individual	Yes
Counting mode, continuous	Yes
Counting mode, periodic	Yes
Potential separation	
between 1L and 2L and 3L	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.	0°C
• max.	60 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
configuration / header	
configuration / programming / header	
Program cycle time (scan)	1 μs
connection method	

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: 12/8/2024 🖸