SIEMENS

Data sheet

6ES7131-6BF00-0CA0



SIMATIC ET 200SP, digital input module, DI 8x 24 V DC High Feature, input type 3 (IEC 61131), sink input, (PNP, sink input) Packing unit: 1 unit, suitable for BU type A0, color code CC01, input delay 0.05..20 ms; Channel diagnostics for: Encoder power supply short circuit, wire break, supply voltage, channel fault LED

	Fi	gure	simi	ar
--	----	------	------	----

General information				
Product type designation	DI 8x24 V DC HF			
HW functional status	From FS07			
Firmware version				
 FW update possible 	Yes			
usable BaseUnits	BU type A0			
Color code for module-specific color identification plate	CC01			
Product function				
● I&M data	Yes; I&M0 to I&M3			
 Isochronous mode 	Yes			
Engineering with				
STEP 7 TIA Portal configurable/integrated from version	V13 SP1 / -			
 STEP 7 configurable/integrated from version 	V5.5 / -			
 PCS 7 configurable/integrated from version 	V8.1 SP1			
 PROFIBUS from GSD version/GSD revision 	One GSD file each, Revision 3 and 5 and higher			
 PROFINET from GSD version/GSD revision 	GSDML V2.3			
Operating mode				
• DI	Yes			
Counter	No			
Oversampling	No			
• MSI	Yes			
Supply voltage				
Rated value (DC)	24 V			
permissible range, lower limit (DC)	19.2 V			
permissible range, upper limit (DC)	28.8 V			
Reverse polarity protection	Yes			
Encoder supply				
Number of outputs	8			
Output voltage, min.	19.2 V			
Short-circuit protection	Yes			
24 V encoder supply				
• 24 V	Yes			
 Short-circuit protection 	Yes; per channel, electronic			
 Output current per channel, max. 	700 mA			
Output current per module, max.	700 mA			
Power loss				
Power loss, typ.	1.5 W; 24 V, 8 inputs supplied via encoder supply			
Address area				
Address space per module				

Image:	• Inputs	1 byte; + 1 byte for QI information			
Automatic encoding Yes • Methanical coding element Yes • Methanical coding element Type A Sensitive 4 Selection of Baselulation for connection variants 4 • Avide connection BU type A0 • 2.wire connection BU type A0 • 2.wire connection BU type A0 • 4.wire connection BU type A0 with AUX terminals or potential distributor module BU type A0 Yes SourceSink input Yes Pulse densition Yes SourceSink input Yes Pulse densition Yes SourceSink input Yes Pulse densition Yes Fige evaluation Yes Potential distributor Y					
• Wechanical coding element Yes • Type of mechanical coding element Type A Submodules • • Number of configurable submodules, max. 4 Submodules • • 1 vire connection BU type A0 • 2 vire connection BU type A0 with AUX terminals or potential distributor module • 4 vire connection BU type A0 with AUX terminals or potential distributor module • 1 vire connection BU type A0 with AUX terminals or potential distributor module • 1 vire connection BU type A0 + Potential distributor module • 1 vire connection Potential distributor module • 1 vire connection Yes • 1 vire vire vire vire vire vire vire vire					
• Type of mechanical coding element Type A • Number of configurable submodules, max. 4 Selection of Beaching to connection variants 8 • Jurite connection BU type A0 • Source/sink input Presenting • Longth 2 • Longth 2 • Longth 2 • Failed value (DC) 24 V • For signal '10' -30 to 15 V • For signal '11', tpn 2.5 mA Input characteria inputs - • For signal '11', tpn 2.5 mA Input characteria inputs - • For signal '11', tpn 2.5 mA Input characteria inputs - • For signal '11', tpn 2.5 mA Input characteria inputs - • To signal '11', tpn 2.0 for signal '12 (2 / 12 / 2 / 2 / 0 ms (in each case + delay of signa input selection input selection input selection input selection input selection input selection	6				
Submabules - • Number of configurable standards B • Swite connection BU type A0 • Swite connection BU type A0 with AUX terminals or potential distributor module • Javier connection BU type A0 with AUX terminals or potential distributor module • Javier connection BU type A0 with AUX terminals or potential distributor module • Javier connection BU type A0 with AUX terminals or potential distributor module • Digital inputs 8 Optigital inputs 8 Sourcosistik (input Preading Input characteristic curve in accordance with IEC 61131, type 3 Yes • Longth 2 + 5 Cons, 100 ms, 200 ms, 500 ms, 15, 2 + 2 • Edge evaluation Yes, rising edge, falling edge, edge change • Input voltage - • Tor signal '1', typ. 2.5 mA • Input delay (for rate voltage) for signal '1', typ. • at '0' to 1'', max. 2.0 ms - at '1' to 0'', max. 2.0 ms - at '1' to 0'', max. 2.0 ms • shelefed, max. 1000 m • unshielded, max. 0.05 ms • Sore info	-				
Aumber of configurable submodules, max. Selection of BaseJunit for connection variants Selection of BaseJunit for connection variants Selection of BaseJunit for connection variants Seconcelion Bul type A0 Bul type A0 Bul type A0 +Potential distributor module Seconcelion Seco		Туре А			
Selection of BaseUnit for connection variants 1-wire connection BU type A0 2-wire connection BU type A0 + Potential distributor module 4-wire connection BU type A0 + Potential distributor module Digital inputs 8 Digital inputs 8 Digital inputs 1-wire connection BU type A0 + Potential distributor module BU type A0 + Potential distributor module But type A0 + Potential distributor module Press connection But type A0 + Potential distributor module Press type A0 + Potential distributor module Press connection Press type A0 + Potential distributor module Press type A0 + Potential distributor module Press type A0 + Potential distributor module Press connection Press type A0 + Potential distributor module <		4			
• I-wire connection BU type A0 • 2-wire connection BU type A0 with AUX terminals or potential distributor module • 4-wire connection BU type A0 + Potential distributor module • Optical input 8 Optical input 8 SourceSrick input 8 Input characteristic curve in accordance with IEC 61131, type 3 Yes Pulse extension Yes; Pulse duration from 4 µs • Length 2 x; 50 ms, 100 ms, 200 ms, 50 ms, 1 s, 2 x Edge exatation Yes; raising edge, falling edge, edge change Input characteristic curve in accordance with IEC 61131, type 3 Yes; raising edge, falling edge, edge change • for signal 1° - 30 to 45 V • for signal 1° - 30 to 45 V • for signal 1° - 30 to 45 V • for signal 1° - 30 to 45 V • for signal 1° - 30 to 50 x • for signal 1° - 30 to 50 x • for signal 1° - 30 to 50 x • for signal 1°, typ. 25 mA • for signal 1°, typ. 0.5 ms • a tor 10 *1', rin. 0.05 ms • a tor 10 *1', rin. 0.05 ms • a tor 10 *1', rin. 0.05 ms • a tor 10 *1'', rin. 0.05 ms • a tor 10 *1'', rin. 0.05 ms • a tor 10 *1'', rin. <		4			
- 2-wise connection BU type A0 - 3-wise connection BU type A0 with AUX terminals or potential distributor module - 4-wise connection BU type A0 + Potential distributor module Digital inputs 8 Variable of digital inputs 8 Digital inputs, parametrizable Yes Source/sink input P-reading Input characteristic curve in accordance with IEC 61131, type 3 Yes Pulse extension 2 + 50 ms, 100 ms, 200 ms, 500 ms, 15, 2 ± 3 Edge evaluation Yes, rising edge, falling edge, edge change Input dealy (for rate value (CC) 24 V • for signal '1' -10 to 5V • for signal '1' -11 to 50V Input dealy (for rate value (CC) 24 V • for signal '1' -10 to 5V • for signal '1' -10 to 5V • for signal '1' -10 to 5V • for signal '1' -10 to 500 µs, depending on line length) • at '1' to 0'', max. 20 ms • at '1' to 0'', max. 20 ms • at '1' to 0'', min. -20 ms • at '1' to 0'', max. 20 ms • at '1' to 0'', max. 20 ms • at '1' to 0'', max. 20 ms • at '1' to 0'', min. -20 ms • at '1' to 0'', max. 800 ms					
- Swite connection - BU type A0 + Potential distributor module Digital inputs Number of digital inputs Ves Sourceshnk input Input characterizable Yes Sourceshnk input Input characterizable Yes Yes Ves Sourceshnk input Input characterizable Yes Yes Yes Yes Ves Ves					
e Averice connection BU type A0 + Potential distributor module Digital inputs 8 Digital inputs 8 Digital inputs 9 Source/sink input Preading Input otheracteristic curve in accordance with IEC 61131, type 3 Yes Puise extension Yes; Puise duration from 4 µs 2.8 Edge evaluation Yes; roling edge, falling edge, edge change Imput voltage Input voltage 9 2.5 cm s., 10 m. 32 0 m. s. 10 s., 2 s. 2 s. Input voltage 9 2.5 cm s., 10 m. 32 0 m. s. 1 s., 2 s. 2 s. Input voltage 9 2.5 cm s., 10 m. 32 0 m. s. 1 s., 2 s. 2 s. Input voltage 9 2.5 m A 10 to 4.0 s. 1 f. 6 / 3.2 / 12.8 / 20 ms (in each case + delay of or signal '1', tor, m. 2.0 ms Input voltage Yes; 0.0 s / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 0.5 m. 2.0 ms Input voltage Yes; 0.0 s / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 0.5 m. 2.0 ms Input voltage Yes; 0.0 s / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 0.5 m. 2.0 ms Input delay (for rated valu					
Digital inputs 8 Number of digital inputs 8 Sourcesink input Preading Number of digital inputs 9 Sourcesink input Preading Input obtarcetratistic curve in accordance with IEC 61131. Yes Puise extension • • Length 2 s; 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s Edge evaluation Yes • for signal '1" +11 to +30v Input deals (for rated value of input voltage) 6 or signal '1", typ. • for signal '1", typ. 2.5 mA Input deals (for rated value of input voltage) for standard inputs - parameterizable '41 to +30v Input deals (for rated value of input voltage) for signal '1", typ. - at '0" to '1", min. 0.05 ms - at '1" to '0", max. 20 ms Coble length 1.000 m • sheleded, max. 600 m Encodar Yes Connectable encoders -2 wire sensor - wire sensor Yes - blagnostic information readable Yes • blagnostic alarm					
Number of digital inputs 8 Digital inputs, parameterizable Yes Source/sink input Preading Input characteristic curve in accordance with IEC 61131. Yes Yes Pulse duration from 4 µs Length 2.5 Oms, 10 ms, 20 ms, 50 ms, 15, 2 s Edge evaluation Yes; rising edge, failing edge, odge change Input voltage Yes; rising edge, failing edge, odge change Input voltage - Act 40 value (DC) 4 rest value (DC) 24 V 5 for signal '1" +11 to +30V Input voltage - S signal '1", typ: 5 or signal '1", typ: 2.5 mA Input delay (for relet value of input voltage) for standard inputs - parameterizable Yes: 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs. depending on line length) - at '0" to '1", min. 0.05 ms - at '1" to '0", nin. 20 ms - at '1" to '0", min. 20 ms - at '1" to '0", min. 0.00 m - permissible quiescent current (2-wire sensor), max. 200 ms - permissible quiescent current (2-wire sensor), max. 420 µs </td <td></td> <td>BU type A0 + Potential distributor module</td>		BU type A0 + Potential distributor module			
Digital inputs Yes Source/sink input Preading Input chracteristic curve in accordance with IEC 61131, type 3 Yes; Pulse duration from 4 µs Pulse extension 2 s; 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s Edge evaluation Yes; rising edge, failing edge, edge change Input voltage * • Rated value (DC) 24 V • for signal °1" - • for signal °1", fyp. 25 mA Input voltage * • for signal °1", fyp. 25 mA Input voltage * • for signal °1", fyp. 25 mA Input voltage * • for signal °1", fyp. 25 mA Input voltage * • for signal °1", fyp. 25 mA Input voltage * • at °0" to "1", min. 0.05 ms • at °1" to "0, max. 20 ms Cable length • • shelded, max. 600 m • anshelded, max. 600 m • and processing time (TC), min. 420 µs Subled, max. 8 µs	Digital inputs				
Source/sink input Preading Input obtaracteristic curve in accordance with IEC 61131, type 3 Yes Puble extension Yes: Puble duration from 4 μs • Length 2: \$50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s Edge evaluation Yes: fingle dge, failing edge, edge change • Input voltage Yes • Rated value (DC) 24 V • for signal 1°" -30 to +5 V • for signal 1°", typ. 2.5 mA Input voltage *** • for signal 1°", typ. 2.5 mA Input voltage *** • for signal 1°", typ. 2.5 mA Input voltage **** • at "0" to "1", min. 0.05 ms - at "1" to "0", min. 0.05 ms - at "1" to "0", max. 20 ms Connectable encoders **** • shielded, max. 600 m • or the "1" nin. 0.05 ms • at "1" to "0", min. 0.05 ms • at "1" to "0", min. 0.05 ms • at "1" to "0", min. 0.05 ms • at max. 600 m Elable le	Number of digital inputs	8			
Input characteristic curve in accordance with IEC 61131, ype 3 Yes Pulse extension 2 ± 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s Edge evaluation Yes; rising edge, failing edge, edge change Input voltage 2 ± 50 ms, 100 ms, 200 ms, 1 s, 2 s Rated value (DC) 24 V • for signal "1" -30 to +5 V • for signal "1", typ. 2.5 mA Input voltage For signal "1", typ. • for signal "1", typ. 2.5 mA Input voltage (for rated value of input voltage) for standard inputs • for standard inputs - parameterizable • at 70" to "1", min. 0.05 ms - at 71" to "0", max. 20 ms - at 1"1 to "0", max. 20 ms • Shielded, max. 0.05 ms • at 1"1" to "0", max. 20 ms • Comectable encoders - • Connectable quescent current (2-wire sensor), max. 20 ms • Just we sensor Yes • Just yot ing and processing time (TCI), min. 420 µs Bus cycle time (TDP), min. 500 µs • Diagnostic afarm Yes • Just p	Digital inputs, parameterizable	Yes			
type 3 Yes: Pulse duration from 4 μs Pulse extension Yes: Fulse duration from 4 μs Edge evaluation Yes: fining edge, failing edge, edge change Input votage Yes: fining edge, failing edge, edge change Input votage 30 to 45 V • for signal "0" -30 to 45 V • for signal "1", typ. 2.5 mA Input delay (for rated value of input votage) for standard inputs • for signal "1", typ. 2.5 mA Input delay (for rated value of input votage) for standard inputs • for signal "1", typ. 2.5 mA Input delay (for rated value of input votage) for standard inputs • at "0" to "1", min. 0.05 ms - at "0" to "1", max. 20 ms - at "1" to "0", max. 800 m Encoder Encoder Connectable encoders Yes	Source/sink input	P-reading			
Pulse extension Yes; Pulse duration from 4 µs • Length 2 s; 50 ms, 100 ms, 200 ms, 200 ms, 500 ms, 1 s, 2 s Edge evaluation Yes; rising edge, failing edge, edge change Input voltage - • Rated value (DC) 24 V • for signal "0" -30 to 45 V • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) - for standard inputs - - parameterizable Yes: 0.5 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs, depending on line length) - at "0" to "1", min. 0.05 ms - at "0" to "1", max. 20 ms - at "1" to "0", min. 0.05 ms - at "1" to "0", max. 20 ms • Shielded, max. 1000 m • unshielded, max. 1000 m • Using and processing time (TCI), min. 420 µs Survir sensor Yes - permissible quiescent current (2-wire sensor), max. 1.5 mA Bas cycle time (TDP), min. 500 µs Bas cycle time (TDP), min. 500 µs Usignostic struction Yes Alarms 9 µs Diagnostic infor	Input characteristic curve in accordance with IEC 61131,	Yes			
 Length 2 s; 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s Edge evaluation Yes; rising edge, edge change Input voltage A tated value (DC) 2 4 V 6 ro signal "1" 10 to 50 V 4 for signal "1", typ. 2 s m A Input delay (for rated value of input voltage) for signal "1", min. a t "0" to "1", max. 2 ms a t "1" to "0", max. 2 ms c as t "1" to "0", min. a t "1" to "0", max. 2 ms c as t "1" to "0", max. 2 ms c as t "1" to "0", max. 2 ms a t "1" to "0", max. 2 ms a t "1" to "0", max. 2 ms a t "1" to "0", min. a shielded, max. 600 m Encoder Connectable encoders 2 wire sensor a wire sensor a straid quiescent current (2-wire sensor), max. a to "10", min. 500 µs a straid on the sensor implication in the sensor implication is the sensor impl	type 3				
Edge evaluation Yes; rising edge, falling edge, edge change Input voltage • • Rated value (DC) 24 V • for signal "0" -30 to 45 V • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) • for standard inputs - - parameterizable Yes: 0.5 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs, depending on line length) - at "0" to "1", min. 0.05 ms - at "1" to "0", min. 0.05 ms - permissible quiescent current (2-wire sensor) 1.5 mA max. 1000 m • 2-wire sensor 1.5 mA - permissible quiescent current (2-wire sensor), max. 1.5 mA Bus cycle time (TDP), min. 420 µs Sub cycle time (TDP), min. 420 µs Diagnostic sfunction	Pulse extension	Yes; Pulse duration from 4 µs			
Input voltage 44 V • Rated value (DC) 24 V • for signal "0" -30 to +5 V • for signal "1" +111 to +30V Input current • • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for signal "1", typ. for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for signal "1", typ. for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for signal "1", typ. for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for signal "1", typ. - at "0" to "1", min. 0.05 ms - at "1" to "0", max. 20 ms Cable length 1000 m • shielded, max. 1000 m • unshielded, max. 600 m Encoder Yes Connectable encoders Yes • 2.virte sensor Yes - at "1" to "0", min. 500 µs uitter, max. 80 µs Interrupts/diagnostics/status information Yes	• Length	2 s; 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s			
• Rated value (DC) • 4V • for signal ''0" • 30 to +5V • for signal ''1" • 110 + 30V Input current • for signal ''1" • 110 + 30V Input delay (for rated value of input voltage) for standard inputs • parameterizable • at '0" to '1", min. 0.5 ms - at '0" to '1", min. 0.5 ms - at '0" to '1", min. 0.5 ms - at '0" to '1", max. 20 ms - at '1" to '0", min. - at '0" to '1", max. 20 ms - at '1" to '0", max. 20 ms Cable length • shielded, max. 1 000 m vushielded.max. 1 000 m vushielded.max. 1.5 mA max. Is on Max 1.5 mA max. Is cochronous mode Filtering and processing time (TCI), min. Bus cycle time (TDP), min. dagnastics function Ves Alarms Ves Alarns Ves Alarns Ves Alarns Ves Alarns Ves Alarns Ves Alarnselinderiniterupt Ves: channel by channel Ve	Edge evaluation	Yes; rising edge, falling edge, edge change			
• for signal "0" -30 to +5 V • for signal "1" +11 to +30V Input current • • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for standard inputs parameterizable Yes; 0.05 / 0.1 / 0.4 / 0.8 / 16 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs, depending on line length) at "0" to "1", min. 0.05 ms at "1" to "0", max. 20 ms Cable length - at "1" to "0", max. Cable length - at "1" to "0", max. Connectable encoders • shielded, max. 600 m Encoder Connectable encoders Yes permissible quiescent current (2-wire sensor), max. 15 mA Bus cycle time (TDP), min. 420 µs Bus cycle time (TDP), min. 8 µs Interrupts/diagnostics/status information 500 µs Diagnostic alarm Yes; channel by channel • Diagnostic alarm Yes; Parameterizable, channels 0 to 7 Diagnostic information readable Yes • Diagnostic information readable Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-brea	Input voltage				
• for signal "0" -30 to +5 V • for signal "1", typ. +11 to +30V Input delay (for rated value of input voltage) for standard inputs • parameterizable Yes; 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs, depending on line length) - at "0" to "1", min. 0.05 ms - at "0" to "1", max. 20 ms - at "1" to "0", max. 20 ms Cable length • shielded, max. • shielded, max. 1000 m • unshielded, max. 600 m Encoder Yes Connectable encoders Yes • 2-wire sensor 1.5 mA - permissible quiescent current (2-wire sensor), max. 8 µs Interrupts/diagnostics/status information 500 µs Diagnostics function Yes; channel by channel • Diagnostic site function readable Yes; channel by channel • Diagnostic information readable Yes • Diagnostic information readable Yes • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break	· •	24 V			
• for signal "1" +11 to +30V Input current • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) • for signal "1", typ. 2.5 mA • for signal "1", typ. 2.5 mA • for signal "1", typ. • or standard inputs • or standard inputs • or standard inputs • at "0" to "1", min. 0.05 ms 20 ms • at "1" to "0", min. 0.05 ms 20 ms • at "1" to "0", max. 20 ms 20 ms Cable length • 1000 m 600 m • shielded, max. 600 m 600 m Encoder • 2.4 wire sensor Yes • 2.4 wire sensor Yes 1.5 mA • as. 500 µs. 500 µs. Sub cycle time (TDP), min. 420 µs 500 µs. Bus cycle time (TDP), min. 8 µs 1.5 mA • Diagnostics function Yes. 7.4 larms • Diagnostic structurent (2-wire sensor), max. 8 µs 1.5 mA • Source time (TDP), min. 420 µs 500 µs. Bus cycle time (TDP), min. 8 µs 1.5 mA • Diagnostic structurent (2-wire sensor), max		-30 to +5 V			
Input current • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for standard inputs	-	+11 to +30V			
• for signal *1*, typ. 2.5 mA Input delay (for rated value of input voltage) for standard inputs parameterizable Yes; 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs, depending on line length) at "0" to "1", min. 0.05 ms at "0" to "1", max. 20 ms at "1" to "0", min. 0.05 ms at "1" to "0", max. 20 ms Cable length • shielded, max. • shielded, max. 1000 m • unshielded, max. 600 m Encoder Connectable encoders permissible quiescent current (2-wire sensor), max. 1.5 mA Bus cycle time (TDP), min. 420 µs					
Input delay (for rated value of input voltage) for standard inputs		2.5 mA			
for standard inputs Yes; 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs, depending on line length)					
parameterizable Yes: 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs, depending on line length) at "0" to "1", min. 0.05 ms at "0" to "1", max. 20 ms at "1" to "0", min. 0.05 ms at "1" to "0", max. 20 ms Cable length 1000 m • shielded, max. 1000 m • unshielded, max. 600 m Encoder Connectable encoders • 2-wire sensor Yes permissible quiescent current (2-wire sensor), max. 1.5 mA Bus cycle time (TDP), min. 500 µs Bus cycle time (TDP), min. 500 µs Juiter, max. 8 µs Interrupts/diagnostics/status information Yes Diagnostic stortion Yes Alarms • Diagnostic information readable Yes • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Ves Yes • Monitoring of encoder power supply Yes; Channel by channel • Ves Yes • Monitoring of encoder power supply Yes; Channel by channel • Ves; Channel by channel Yes; Channel by channel					
 of 30 to 500 µs, depending on line length) - at "0" to "1", min. 0.05 ms - at "1" to 70", min. 0.05 ms - at "1" to 70", max. 20 ms Cable length • shielded, max. 600 m • unshielded, max. 600 m • unshielded, max. 600 m • cable and the max 600 m • cable and the max 0.05 ms 2. wire sensor - permissible quiescent current (2-wire sensor), max. 1.5 mA Isochronous mode Filtering and processing time (TCI), min. 80 µs Interrupts/diagnostics/status information Diagnostic function Yes Alarms Oliagnostic information readable Yes - parameterizable Yes - parameterizable Yes - parameterizable Yes Winchring of neoder power supply Yes; Channel by channel Yes; C		Yes: 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay			
	parameterizabio				
	— at "0" to "1". min.				
	-	20 ms			
at "1" to "0", max. 20 ms Cable length					
Cable length 1000 m • shielded, max. 600 m Encoder 600 m Connectable encoders • 2-wire sensor • 2-wire sensor Yes permissible quiescent current (2-wire sensor), max. 1.5 mA Isochronous mode 1.5 mA Filtering and processing time (TCI), min. 420 µs Bus cycle time (TDP), min. 500 µs Jitter, max. 8 µs Interrupts/diagnostics/status information Yes Diagnostics function Yes; channel by channel • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; Channel by channel • Monitoring of encoder power supply Yes; Channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED					
• shielded, max. 1 000 m • unshielded, max. 600 m Encoder - Connectable encoders - • 2-wire sensor Yes pernissible quiescent current (2-wire sensor), max. 1.5 mA Isochronous mode - Filtering and processing time (TCI), min. 420 μs Bus cycle time (TDP), min. 500 μs Jitter, max. 8 μs Interrupts/diagnostics/status information Diagnostic function Yes Alarms - • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnosses - • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED					
• unshielded, max. 600 m Encoder Connectable encoders • 2-wire sensor Yes permissible quiescent current (2-wire sensor), max. 1.5 mA Isochronous mode Filtering and processing time (TCI), min. Filtering and processing time (TCI), min. 420 μs Bus cycle time (TDP), min. 500 μs Jitter, max. 8 μs Interrupts/diagnostics/status information Diagnostics/status information Diagnostic function Yes; channel by channel • Diagnostic information readable Yes; channel by channel • Hardware interrupt Yes; channel by channel • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED		1 000 m			
Encoder Connectable encoders Yes - permissible quiescent current (2-wire sensor), max. 1.5 mA Isochronous mode Filtering and processing time (TCI), min. Bus cycle time (TDP), min. 420 µs Bus cycle time (TDP), min. 500 µs Jitter, max. 8 µs Interrupts/diagnostics/status information Diagnostics function Yes; channel by channel • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses Yes • Diagnostic information readable Yes • Diagnostic information readable Yes; channel by channel • Monitoring the supply voltage Yes - parameterizable Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; Channel by channel • Wire-break Yes; channel by channel • Short-circuit Yes; channel by channel • Short-circuit Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED					
Connectable encoders Yes • 2-wire sensor Yes permissible quiescent current (2-wire sensor), max. 1.5 mA Isochronous mode 1.5 mA Filtering and processing time (TCI), min. 420 µs Bus cycle time (TDP), min. 500 µs Jitter, max. 8 µs Interrupts/diagnostics/status information Yes Alarms Ves; channel by channel • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses Yes • Monitoring the supply voltage Yes; channel by channel • Wire-break Yes; channel by channel • Short-circuit Yes; channel by channel • Short-circuit Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED		000 m			
• 2-wire sensor Yes — permissible quiescent current (2-wire sensor), max. 1.5 mA Isochronous mode 1.5 mA Filtering and processing time (TCI), min. 420 μs Bus cycle time (TDP), min. 500 μs Jitter, max. 8 μs Interrupts/diagnostics/status information Yes Alarms Ves; channel by channel • Diagnostic alarm Yes; Parameterizable, channels 0 to 7 Diagnostic information readable Yes • Diagnostic information readable Yes • Diagnostic information readable Yes • Monitoring the supply voltage Yes — parameterizable Yes; channel by channel • Wire-break Yes; channel by channel • Monitoring of encoder power supply Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED					
— permissible quiescent current (2-wire sensor), max. 1.5 mA Isochronous mode 1.5 mA Filtering and processing time (TCI), min. 420 μs Bus cycle time (TDP), min. 500 μs Jitter, max. 8 μs Interrupts/diagnostics/status information Yes Diagnostic function Yes Alarms • Diagnostic alarm • Diagnostic information readable Yes; channel by channel • Diagnostic information readable Yes • Diagnostic information readable Yes • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; Channel by channel • Wire-break Yes; channel by channel • Wire-break Yes; channel by channel • Short-circuit Yes; channel by channel • Short-circuit Yes; channel by channel • Short-circuit Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED					
max. Isochronous mode Filtering and processing time (TCI), min. 420 μs Bus cycle time (TDP), min. 500 μs Jitter, max. 8 μs Interrupts/diagnostics/status information Ves Diagnostic sfunction Yes Alarms • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnostic information readable Yes • Diagnostic information readable Yes • Monitoring the supply voltage Yes - parameterizable Yes; channel by channel • Wire-break Yes; channel by channel • Wire-break Yes; channel by channel • Short-circuit Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED					
Isochronous mode Filtering and processing time (TCI), min. Bus cycle time (TDP), min. 500 μs Jitter, max. 8 μs Interrupts/diagnostics/status information Diagnostics function Yes Alarms • • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses • • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; Channel by channel • Short-circuit Yes; Channel by channel • Short-circuit Yes; Channel by channel • Short-circuit Yes; Channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED		1.5 mA			
Filtering and processing time (TCI), min. 420 μs Bus cycle time (TDP), min. 500 μs Jitter, max. 8 μs Interrupts/diagnostics/status information Diagnostics function Diagnostic function Yes Alarms • • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses • • Diagnostic information readable Yes • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; Channel by channel • Wire-break Yes; channel by channel • Short-circuit Yes; channel by channel • Short-circuit Yes; channel by channel • Short-circuit Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED					
Bus cycle time (TDP), min. 500 μs Jitter, max. 8 μs Interrupts/diagnostics/status information Interrupts/diagnostics/status information Diagnostics function Yes Alarms • Diagnostic alarm • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses • • Diagnostic information readable Yes • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; Channel by channel, optional protective circuit for preventing wire-break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm • Short-circuit Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED	Isochronous mode				
Jitter, max. 8 μs Interrupts/diagnostics/status information Diagnostics function Yes Alarms • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses • Diagnostic information readable Yes • Monitoring the supply voltage Yes - parameterizable Yes; channel by channel • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; channel by channel • Short-circuit Yes; channel by channel • Short-circuit Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED	Filtering and processing time (TCI), min.	420 µs			
Jitter, max. 8 μs Interrupts/diagnostics/status information Diagnostics function Yes Alarms • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses • Diagnostic information readable Yes • Monitoring the supply voltage Yes - parameterizable Yes; channel by channel • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; channel by channel • Short-circuit Yes; channel by channel • Short-circuit Yes; channel by channel • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED	Bus cycle time (TDP), min.	500 µs			
Diagnostics function Yes Alarms • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses • • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; Channel by channel • Short-circuit Yes; channel by channel Diagnostics indication LED Yes; green PWR LED					
Diagnostics function Yes Alarms • Diagnostic alarm Yes; channel by channel • Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses • • Diagnostic information readable Yes • Monitoring the supply voltage Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; Channel by channel • Short-circuit Yes; channel by channel Diagnostics indication LED Yes; green PWR LED					
Alarms• Diagnostic alarm • Hardware interruptYes; channel by channel Yes; Parameterizable, channels 0 to 7Diagnoses• Diagnostic information readable • Monitoring the supply voltage • parameterizableYes• Monitoring of encoder power supply • Wire-breakYes; channel by channel Yes; channel by channel 		Vec			
 Diagnostic alarm Hardware interrupt Yes; channel by channel Yes; Parameterizable, channels 0 to 7 Diagnoses Diagnostic information readable Monitoring the supply voltage parameterizable Monitoring of encoder power supply Wire-break Short-circuit Short-circuit Yes; channel by channel Yes; channel by channel Yes; channel by channel Yes; Channel by channel, optional protective circuit for preventing wire-break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm Short-circuit Yes; channel by channel 					
 Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses Diagnostic information readable Monitoring the supply voltage - parameterizable Monitoring of encoder power supply Wire-break Short-circuit Short-circuit Yes; channel by channel Yes; channel by channel Short-circuit Yes; channel by channel 		Ves: channel by channel			
Diagnoses Diagnostic information readable Monitoring the supply voltage Monitoring the supply voltage Parameterizable Monitoring of encoder power supply Wire-break Wire-break Short-circuit Short-circuit Yes; channel by channel Yes; channel by channel Yes; break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm Short-circuit Yes; channel by channel Yes; green PWR LED Yes; green PWR LED	-				
 Diagnostic information readable Monitoring the supply voltage Monitoring the supply voltage Parameterizable Monitoring of encoder power supply Wire-break Wire-break Short-circuit Short-circuit Yes; channel by channel 					
 Monitoring the supply voltage Monitoring of encoder power supply Monitoring of encoder power supply Wire-break Wire-break Short-circuit Short-circuit Yes; channel by channel Yes; Channel by channel, optional protective circuit for preventing wire-break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm Short-circuit Yes; channel by channel 	<u> </u>	Ver			
— parameterizable Yes • Monitoring of encoder power supply Yes; channel by channel • Wire-break Yes; Channel by channel, optional protective circuit for preventing wire- break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm • Short-circuit Yes; channel by channel Diagnostics indication LED Yes; green PWR LED	-				
Monitoring of encoder power supply Wire-break Wire-break Short-circuit Short-circuit Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED					
Wire-break Yes; Channel by channel, optional protective circuit for preventing wire- break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm Short-circuit Yes; channel by channel Yes; channel by channel Yes; green PWR LED					
break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm • Short-circuit Yes; channel by channel Diagnostics indication LED • Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED					
• Short-circuit 45 kOhm • Short-circuit Yes; channel by channel Diagnostics indication LED Yes; green PWR LED	Wire-break				
Short-circuit Yes; channel by channel Diagnostics indication LED Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED					
Diagnostics indication LED Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED	e Short airquit				
Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED		res, channel by channel			
Channel status display Fes, green LED	Channel status display	Yes; green LED			

 for channel diagnostics 	Yes; red LED
for module diagnostics	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
between the channels	No
 between the channels and backplane bus 	Yes
 between the channels and the power supply of the electronics 	No
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for safety functions	No
Ambient conditions	
Ambient temperature during operation	
 horizontal installation, min. 	-30 °C; < 0 °C as of FS07
 horizontal installation, max. 	60 °C
 vertical installation, min. 	-30 °C; < 0 °C as of FS07
 vertical installation, max. 	50 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	28 g
last modified:	1/16/2021 🖸