Data sheet

6ES7138-7FA00-0AB0



SIMATIC, fail-safe electronic module for ET200iSP, 4F-Al HART Ex I, up to category 4 (EN954-1)/ SIL3 (IEC61508)/PLE (ISO13849), for connecting (HART) 2-wire transmitters, supported HART protocol version 7.0, Ex ib (ia Ga) IIC T4 Gb, Ex ib [ia IIIC Da] IIC T4 Gb, Ex ib [ia] I Mb

General information		
Product brand name	SIMATIC	
Product family	ET 200iSP	
Product category	Analog module input	
Product type designation	4F-ALLEX HART	
Installation type/mounting		
Rack mounting	No	
Front mounting	Yes	
Rail mounting	Yes	
Wall mounting/direct mounting	Yes	
Supply voltage		
Type of supply voltage	DC	
permissible range, lower limit (DC)	19.2 V	
permissible range, upper limit (DC)	30 V	
Input current		
Current consumption, typ.	315 mA	
from supply voltage L+, max.	490 mA; int. Powerbus	
output voltage / header		
supply voltage of the transmitters / header		
 short-circuit proof 	Yes	
 Supply current, max. 	25 mA; Plus 4 mA per channel	
Power loss		
Power loss, typ.	3.8 W	
Power loss, max.	5.4 W	
Address area		
Address space per module		
 Address space per module, max. 	16 byte; 12 bytes in the I area / 4 bytes in the O area	
Hardware configuration		
Fieldbus connection via separate transceiver	Yes	
Analog inputs		
Number of analog inputs	4	
Cycle time (all channels) max.	See data in manual	
Input ranges		
Voltage	No	
Current	Yes	
Thermocouple	No	
Resistance thermometer	No	
Resistance	No	
Input ranges (rated values), currents		
• 0 to 20 mA	Yes	

Cable language Analog value generation for the injusts Mossurement principle integration and conversion timeresolution per channel • Rosolution with overrange (bit including sign), max. • Integration into meparameterizable • Integration and conversion timeresolution per channel • Rosolution with overrange (bit including sign), max. • Integration into parameterizable • Interference values suppression for inferference frequency of in extra suppression for inferference frequency of in extra superior of the parameterizable • Interference values suppression for inferference frequency of in extra superior of the parameter superior of paramete	• 4 mA to 20 mA	Yes
National Control of the Inputs Measurement principle Integrating (Signa-Dolta)		165
Analogy value generation for the inputs Measuroment principle Resolution with overrange (bit including sign), max. Resolution of the sign of the si		500 m
Measurement principle integrations and conversation time/resolution per channel - Resolution with overnange to B including sign), max Integration time, parameterizable - Size; Six Copie time - Siz	,	300 111
Integration and conversion improvedution part channel - Resolution with overlange little including sign), max. - Integration time, parameterizable - Integration time, param		integrating (Sigma-Delta)
Resolution with overrange (bit including spin), max. 16 bit		integrating (eighta belta)
Interference voltage suppression for interference frequency of 1 is size. Interference voltage suppression for interference frequency of 1 is size. Interference voltage suppression for interference frequency of 1 is size. Interference voltage suppression for interference frequency of 1 is size. Interference voltage suppression for interference frequency of 1 is size. Interference voltage suppression for interference frequency of 1 is size. Interference voltage suppression for 1 is size. Interference voltage	·	16 bit
interference voltage suppression for interference frequency of in Hz Smoothing of measured values - parameterizable - Step: None - Step: Hedrum - Ves; Yes; Vey to lime - Step: Hedrum - Ves; Yes; Vey to lime - Step: Hedrum - Ves; 16x cycle time - Ves; 16		
Smoothing of measured values • parameterizable • Step: None • Step: None • Step: None • Step: Medium • Step: Medium • Step: Medium • Step: High • S	-	50 / 60 Hz
Parameterizable Slap: Nome Slap: Nome Slap: Live Slap: Live Slap: Live Slap: Live Slap: Live Yes, 16x cycle time Slap: Live Yes, 16x cycle time Slap: Lipin Yes, 16x cycle time Connection of signal encoders Frontal current measurement as 2-wire transducer Burden of 2-wire transmitter, max. 750 0 Frontal course Slap: Linearly error (relative to injust range), (+-) Constalix between the injust, min. Slap: Linearly error (relative to injust range), (+-) Constalix between the injust, min. Slap: Linearly error (relative to injust range), (+-) Constalix between the injust, min. Slap: Linearly error (relative to injust range), (+-) Constalix between the injust, min. Slap: Linearly error (relative to injust range), (+-) Constalix between the injust, min. Slap: Linearly error (relative to injust range), (+-) Constalix between the injust, min. Slap: Linearly error (relative to injust range), (+-) Constalix between the injust, min. Slap: Linearly error (relative to injust range), (+-) Constalix between the injust, min. Slap: Linearly error (relative to injust range), (+-) Constalix between the injust, min. Slap: Linearly error (relative to injust range), (+-) Constalix between the injust, min. Slap: Linearly error (relative to injust range), (+-) Constalix between the injust range, (+-) Constalix between the slap transport of the range of the r	frequency f1 in Hz	
Stigs: None Stigs: None Stigs: Near Westurn S	Smoothing of measured values	
	 parameterizable 	Yes; in 4 stages
Step: High Step: High Step: High Yes: 64x cycle time Encoder Connection of signal encoders • for current measurement as 2-wire transducer — Burden of 2-wire transmitter, max. 750 Ω Errorsfaccuracies Linearity error (relative to input range), (++) Linearity error (relative to input range), (++) Crosstalk between the inputs, min. -50 dB Repeat accuracy in steady state at 25 °C (relative to input range), (++) O.055 %K Crosstalk between the inputs, min. -50 dB Repeat accuracy in steady state at 25 °C (relative to input range), (++) O.15 % Exemperature error (relative to input range, (++) O.15 % Exemperature error (relative to input range, (++) O.15 % Essacement limit in overall temperature range • Current, relative to input range, (++) O.15 % Essacement limit (poerational limit at 25 °C) • Current, relative to input range, (++) Interference voltage suppression for f = n x (ff ++1 * %), ff = interference frequency • Series mode interference (peak value of interference < rated value of input range), rim. • Common mode interference, min. • Common mode interference, min. • Common mode interference, min. 50 dB Interfaces No PROFINET interfaces O Protocols Supports protocol for PROFINET IO No PROFIBUS • One Thouse stems No Interrupted languastic status information Alarms • Diagnostic alarm Pessential separation readable Ves • Wire-break • Ves • Diagnostic information readable • Ves • Diagnostic information readable • Ves • Diagnostic information readable • Pessential separation and plants • between the channels and load valtage L+ Ves; Power bus • Between the channels and load valtage L+ Ves; Power bus • Between the channels and load valtage L+ Ves; Power bus • Between the channels and load valtage L+ Ves; Power bus • Between the channels and load valtage L+ Ves; Power bus • Degree and class of protection IP degree of protection	·	· · · · · · · · · · · · · · · · · · ·
Step: High Fincader Connection of signal encoders of or current measurement as 2-wire transducer —Burden of 2-wire transmitter, max. 750 Ω Frorsaccuracies Linearity error (relative to input range), (+/-) Consolable between the inputs, min. -50 dB Repeat accuracy in steady state at 25 °C (relative to input range), (+/-) Operational error limit in overall temperature range ocurrent, relative to input range, (+/-) Sasic error limit (operational limit at 25 °C) ocurrent, relative to input range, (+/-) Sasic error limit (operational limit at 25 °C) ocurrent, relative to input range, (+/-) Sasic error limit (operational limit at 25 °C) ocurrent, relative to input range, (+/-) sasic error limit (operational limit at 25 °C) ocurrent, relative to input range, (+/-) sasic error limit (operational limit at 25 °C) ocurrent, relative to input range, (+/-) sasic error limit (operational limit at 25 °C) ocurrent, relative to input range, (+/-) sasic error limit (operational limit at 25 °C) ocurrent, relative to input range, (+/-) ocurrent, relative t	·	· · · · · · · · · · · · · · · · · · ·
Encoder Connection of signal encoders - for current measurement as 2-wire transducer - Burden of 2-wire transmitter, max. 750 Q Errors/accuracies Linearity error (relative to input range), (+/-) Temperature error limit in overall temperature renge - Current, relative to input range, (+/-) Current, relative to input range, (+/-) - Current, relativ		
Connection of signal encoders • for current measurement as 2-wire transducer —Burden of 2-wire transmitter, max. 750 Q Errors/Jaccuracids Linearity error (relative to input range), (+/-) Crosstatk between the inputs, min. Crosstatk between the input arrage, (+/-) Current, relative to input arrage, (+/-) Current, relative to input arrage, (+/-) Current, relative to input arrage, (+/-) Counties contained the interference (peak value of interference Frequency • Series mode interference, peak value of interference Frequency • Series mode interference, min. • Common mode interference, min. Interfaces Number of PROFINET interfaces Protocots No Crosstate Preoficial Pre		Yes; 64x cycle time
• for current measurement as 2-wire transducer — Burden of 2-wire transmitter, max. 750 \(\text{D} \) Errors/accuracies Linearity error (relative to input range), (+/-) Temperature error (relative to input range), (+/-) Temperature error (relative to input range), (+/-) Temperature error (relative to input range), (+/-) Operational error limit in overall temperature range • Current, relative to input range, (+/-) Operational error limit in overall temperature range • Current, relative to input range, (+/-) Operational error limit in overall temperature range • Current, relative to input range, (+/-) Interference voltage suppression for f = n x (f1 +/-1 %), f1 = interference frequency • Series mode interference (peak value of interference < a dd dB rated value of input range), min. • Common mode interference, min. 1 transferes Number of PROFINET interfaces Number of PROFINET interfaces Protocols Supports protocol for PROFINET IO No PROFISIBS No Further protocols • other bus systems No Interrupts/dilagnostic-setatus information Alarms • Diagnostic alarm Diagnoses • Diagnostic information readable • Yes • Short-circuit Pes • Short-circuit Pes • Group error SF (red) • Yes Potential separation Potential separation analog inputs • between the channels and backplane bus • Between the channels and backplane bu		
- Burden of 2-wire transmitter, max. 750 Ω Errora/accuracies Linearity enry (relative to input range), (+/-) 0.015 % Temperature error (relative to input range), (+/-) 0.005 %/K Crossalak between the inputs, min. 500 dB Repeat accuracy in steady state at 25 °C (relative to input range), (+/-) 0.015 % Operational error limit in overall temperature range • Current, relative to input range, (+/-) 0.35 % Basic error limit (operational limit at 25 °C) • Current, relative to input range, (+/-) 0.1 % Interference voltage suppression for f = n x (1 +/-1 %), f1 = interference fequency • Series mode interference (peak value of interference < related value of input range), min. • Common mode interference (peak value of interference < related value of input range), min. • Common mode interference on the common of th		V
Errors/accuracies Linearly error (relative to input range), (+/-) Crosstalk between the inputs, min. Repeat accuracy in steady state at 25 °C (relative to input range), (+/-) Qerectional error limit in overall temperature range • Current, relative to input range, (+/-) Qerectional error limit in overall temperature range • Current, relative to input range, (+/-) Basic error limit (operational limit at 25 °C) • Current, relative to input range, (+/-) Series mode infererence (peak value of interference error requency • Series mode infererence, (peak value of interference error requency • Series mode infererence, (peak value of interference error requency • Series mode infererence, min. • Common mode interference, min. • Common mode interference, min. • Common mode interference, min. • No Protocols Supports protocol for PROFINET IO No PROFISES No Protocols Supports protocol for PROFINET IO No PROFISES No Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes: Parameterizable Diagnostic information readable • Vies • Wirk-break • Short-circuit Yes Diagnostics information readable • Ves • Wirk-break • Short-circuit Diagnostics information apply in the common protocol of		
Linearity error (relative to input range), (+/-) Temperature error (relative to input range), (+/-) Crosstalic Neveen the inputs, min. Repeat accuracy in steady state at 25 °C (relative to input range), (+/-) Operational error limit in overall temperature range • Current, relative to input range, (+/-) Basic error limit (operational limit at 25 °C) • Current, relative to input range, (+/-) Basic error limit (operational limit at 25 °C) • Current, relative to input range, (+/-) • Current, relative to input range • O d dd dd dd dd dd dd dd dd dd	·	1.00 77
Temperature error (relative to input range), (+/-) Crossalik between the inputs, min. Foo dB Repeat accuracy in steady state at 25 °C (relative to input range), (+/-) Operational error limit in overall temperature range • Current, relative to input range, (+/-) Operational error limit in overall temperature range • Current, relative to input range, (+/-) Out of the current, relative to input range, (+/-) Out of the current, relative to input range, (+/-) Out of the current, relative to input range, (+/-) Out of the current, relative to input range, (+/-) Out of the current, relative to input range, (+/-) Out of the current, relative to input range, (+/-) Out of the current, relative to input range, (+/-) Out of the current of the		0.015 %
Crosstalk between the inputs, min. Repeat accuracy in steady state at 25 °C (relative to input range), (1/*) Operational error limit in overall temperature range • Current, relative to input range, (1/*) Basic error limit (operational limit at 25 °C) • Current, relative to input range, (1/*) Social of the properation of f = n x (ft 1/*) 1 %), ft = interference frequency • Series mode interference (peak value of interference < rated value of input range, min. • Common mode interference, min. • Operationals Supports protocol for PROFINET IO No PROFISISE Supports protocol for PROFINET IO No PROFISISE Yes PROFIBUS • Other bus systems • No Interrupts (diagnostics/status information) Alarms • Diagnostic alarm Diagnoses • Diagnostic information readable • Ves • Wirc-break • Diagnostic information readable • Ves • Wirc-break • Short-circuit Diagnossics indication LED • Croup error SF (red) Potential separation Potential separation analog inputs • between the channels • between the channels and load voltage L+ Permissible potential difference between different circuits • Go V DC/30 V AC Degree and class of protection IP 30		
Repeat accuracy in steady state at 25 °C (relative to input lange), (+r) Operational error limit in overall temperature range • Current, relative to input range, (+r) Basic error limit (operational limit at 25 °C) • Current, relative to input range, (+r) Basic error limit (operational limit at 25 °C) • Current, relative to input range, (+r) Series mode interference (peak value of interference frequency • Series mode interference (peak value of interference frequency • Series mode interference, min. • Common mode interference, min. • Common mode interference, min. • Common mode interference, min. • Oba B Interfaces No Protocols Supports protocol for PROFINET IO No PROFISafe Yes PROFIBUS No Protocols Oher bus systems No Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes; Parameterizable Diagnosses • Diagnostic information readable Yes • Wire-break Yes • Short-circuit Yes Diagnostic indication LED • Group error SF (red) Yes Potential separation analog inputs • between the channels and load voltage L+ Yes; Power bus Permissible potential difference Detween different circuits Go V DC/30 V AC Degree and class of protection IP30		
range), (+/-) Operational error limit in overall temperature range • Current, relative to input range, (+/-) Basic error limit (operational limit at 25 °C) • Current, relative to input range, (+/-) • Series mode interference (peak value of interference < rate value of input range), min. • Common mode interference, min. • Number of PROFINET interfaces Protocols		
Current, relative to input range, (+/-) Basic error limit (operational limit at 25 °C) Current, relative to input range, (+/-) Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency Series mode interference (peak value of interference < rated value of input range), min. Common mode interference, min. So dB Interfaces Number of PROFINET interfaces Proficeois Supports protocol for PROFINET IO No PROFISATE PROFIBUS No Interprotocols other bus systems No Other bus systems Other		0.010 /0
Basic error limit (operational limit at 25 °C) • Current, relative to input range, (+/-) interference voltage suppression for f = n x (11 +/- 1 %), f1 = interference frequency • Series mode interference (peak value of interference < rated value of input range), min. • Common mode interference, min. 50 dB Interfaces Number of PROFINET interfaces 0 Protocols Supports protocol for PROFINET IO No PROFISAF PROFIBUS No Further protocols • other bus systems No Interrupts/diagnostics/status information Alarms • Diagnostic alarm Diagnoses • Diagnostic information readable • Wire-break • Short-circuit Yes Diagnostics indication LED • Group error SF (red) Potential separation Potential separation analog inputs • between the channels and load voltage L+ Yes; Power bus Permissible potential difference between different circuits Degree and class of protection IP degree of protection	Operational error limit in overall temperature range	
Current, relative to input range, (+/-) Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency Series mode interference (peak value of interference < d0 dB rated value of input range), min. Common mode interference, min. So dB Number of PROFINET interfaces Number of PROFINET interfaces 0 Protocols Supports protocol for PROFINET IO No PROFISIEUS No Further protocols Other bus systems No Interrupts/diagnostics/status information Alarms Diagnostic alarm Yes; Parameterizable Diagnoses Diagnoses Diagnoses Diagnoses Diagnoses Olognostic information readable Yes Wire-break Yes Short-circuit Yes Diagnostics indication LED Group error SF (red) Yes Potential separation Potential separation Potential separation Potential separation analog inputs Detween the channels and load voltage L+ Yes; Power bus Permissible potential difference between different circuits Obyere of protection IP degree of protection IP degree of protection IP 30	 Current, relative to input range, (+/-) 	0.35 %
Interference voltage suppression for f = n x (f1 */- 1 %), f1 = interference frequency • Series mode interference (peak value of interference < rated value of input range), min. • Common mode interference, min. • Common mode interference, min. • Common mode interference, min. • Common mode interference, min. • On B Interfaces Number of PROFINET interfaces Supports protocol for PROFINET IO PROFISATE PROFISATE PROFIBUS • Other bus systems No Interrupts/diagnostics/status information Alarms • Diagnostic alarm Diagnoses • Diagnostic information readable • Wire-break • Short-circuit Diagnosts indication LED • Group error SF (red) Potential separation Potential separation Potential separation Potential separation Potential separation Potential separation Potential information and load voltage L+ Pormissible potential difference between the channels and backplane bus • Between the channels and load voltage L+ Pormissible potential difference between different circuits Boy DC/30 V AC Degree and class of protection IP degree of protection IP degree of protection	Basic error limit (operational limit at 25 °C)	
Series mode interference (peak value of interference < rated value of input range), min. Common mode interference, min. So dB Interfaces Number of PROFINET interfaces Protocols Supports protocol for PROFINET IO No PROFISATE PROFIBUS No Further protocols • other bus systems No Interrupts/diagnostics/status information Alarms • Diagnostic alarm • Diagnostic information readable • Wire-break • Wire-break • Short-circuit Yes • Other fuction indication LED • Group error SF (red) Potential separation Potential separation Potential separation Potential separation Potential separation Potential separation and og inputs • Detween the channels and backplane bus • Between the channels and backplane bus • Between the channels and backplane bus • Between the channels and load voltage L+ Pormissible potential difference between different circuits Degree and class of protection IP degree of protection	 Current, relative to input range, (+/-) 	0.1 %
rated value of input range), min. • Common mode interference, min. • Common mode interference, min. Interfaces Number of PROFINET interfaces 0 Protocols Supports protocol for PROFINET IO No PROFIsafe Yes PROFIBUS • other bus systems Interrupts/diagnostics/status information Alarms • Diagnostic alarm Diagnosses • Diagnostic information readable Wire-break • Short-circuit Pes Short-circuit Potential separation Potential separation Potential separation Potential separation Potential separation Potential separation analog inputs • between the channels and load voltage L+ Permissible potential difference between different circuits Degree and class of protection IP degree of protection	Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference	rence frequency
• Common mode interference, min. Interfaces Number of PROFINET interfaces 0 Protocols Supports protocol for PROFINET IO PROFIsafe PROFIBUS • other bus systems Interrupts/diagnostics/status information Alarms • Diagnostic alarm Diagnoses • Uire-break • Wire-break • Short-circuit Pes Diagnostics indication LED • Group error SF (red) Potential separation Potential separation analog inputs • between the channels and load voltage L+ Permissible potential difference between different circuits Degree and class of protection IP degree of protection	· ·	40 dB
Interfaces Number of PROFINET interfaces 0 Protocols Supports protocol for PROFINET IO No PROFISafe PROFIBUS No Further protocols • other bus systems Interrupts/disgnostics/status information Alarms • Diagnostic alarm Polagnoses • Diagnostic information readable • Wire-break • Short-circuit Posenticuit Potential separation Potential separation Potential separation Potential separation • Detween the channels and backplane bus • between the channels and load voltage L+ Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection		EO dD
Number of PROFINET interfaces Protocols Supports protocol for PROFINET IO PROFIsafe PROFIBUS Further protocols • other bus systems No Interrupts/diagnostics/status information Alarms • Diagnostic alarm Diagnoses • Diagnostic information readable • Wire-break • Short-circuit Potential separation Potential separation Potential separation Potential separation Potential separation analog inputs • between the channels and load voltage L+ Permissible potential difference between different circuits Degree and class of protection IP degree of protection	·	30 dB
Supports protocol for PROFINET IO PROFIsafe PROFIBUS other bus systems other bus systems No Interrupts/diagnostics/status information Alarms o Diagnostic alarm Piagnoses Diagnoses Diagnoses Diagnoses Diagnostic information readable wire-break o Short-circuit yes Short-circuit Fotential separation Potential separation Potential separation analog inputs between the channels and backplane bus between the channels and load voltage L+ Permissible potential difference between different circuits Degree and class of protection IP degree of protection IP degree of protection		0
Supports protocol for PROFINET IO PROFIsafe PROFIBUS No Further protocols • other bus systems Interrupts/diagnostics/status information Alarms • Diagnostic alarm Polagnostic information readable • Wire-break • Wire-break • Short-circuit Poiagnostics indication LED • Group error SF (red) Potential separation Potential separation Potential separation analog inputs • between the channels and backplane bus • Between the channels and load voltage L+ Permissible potential difference between different circuits Degree and class of protection IP degree of protection IP degree of protection IP 30		C .
PROFISATE PROFIBUS No Further protocols other bus systems No Interrupts/diagnostics/status information Alarms Diagnostic alarm Ves; Parameterizable Diagnoses Uire-break Ves Vire-break Ves Short-circuit Ves Diagnostics indication LED Ordential separation Potential separation Potential separation analog inputs Detween the channels and backplane bus Between the channels and load voltage L+ Permissible potential difference between different circuits Degree and class of protection IP degree of protection IP degree of protection IP30		No
PROFIBUS Further protocols other bus systems No Interrupts/diagnostics/status information Alarms Diagnostic alarm Ves; Parameterizable Diagnoses Diagnostic information readable Ves Wire-break Ves Short-circuit Ves Short-circuit Ves Diagnostics indication LED Group error SF (red) Potential separation Potential separation analog inputs between the channels Between the channels and backplane bus Between the channels and load voltage L+ Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP degree of protection	· · · · · · · · · · · · · · · · · · ·	
Further protocols • other bus systems No Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes; Parameterizable Diagnoses • Diagnostic information readable • Wire-break • Wire-break • Short-circuit Yes • Short-circuit Yes Diagnostics indication LED • Group error SF (red) Potential separation Potential separation analog inputs • between the channels • between the channels and backplane bus • Between the channels and load voltage L+ Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection		
other bus systems Interrupts/diagnostics/status information Alarms Diagnostic alarm Yes; Parameterizable Diagnoses Diagnostic information readable Yes Wire-break Yes Short-circuit Yes Oroup error SF (red) Potential separation Potential separation analog inputs Oetween the channels Between the channels and backplane bus Between the channels and load voltage L+ Permissible potential difference Detween different circuits Degree and class of protection IP degree of protection IP degree of protection IP 30		INC
Interrupts/diagnostics/status information Alarms Diagnoses Diagnostic information readable Wire-break Short-circuit Ves Group error SF (red) Potential separation Potential separation analog inputs Detween the channels and backplane bus Between the channels and load voltage L+ Permissible potential difference between different circuits Degree and class of protection IP degree of protection Permissible potenticin Page Parameterizable Yes Parameterizable Yes Pes Pes Pes Pes Pes Pes Permissible potential difference Pegree and class of protection IP degree of protection	·	No
Alarms Diagnostic alarm Pes; Parameterizable Diagnoses Diagnostic information readable Wire-break Short-circuit Potential separation Potential separation analog inputs between the channels and backplane bus Between the channels and load voltage L+ Permissible potential difference between different circuits Diagnostics indication LED Yes Potential separation No between the channels No between the channels and backplane bus Between the channels and load voltage L+ Permissible potential difference between different circuits Degree and class of protection IP degree of protection IP degree of protection	·	
Diagnoses Diagnostic information readable Wire-break Short-circuit Ves Group error SF (red) Potential separation Potential separation analog inputs between the channels and backplane bus Between the channels and load voltage L+ Ves; Power bus Permissible potential difference between different circuits Diagnostics information readable Yes Yes No Yes No Yes ON ON ON ON ON ON ON ON ON O		
Diagnoses Diagnostic information readable Wire-break Short-circuit Yes Diagnostics indication LED Group error SF (red) Yes Potential separation Potential separation analog inputs between the channels between the channels and backplane bus Between the channels and load voltage L+ Yes; Power bus Permissible potential difference between different circuits Degree and class of protection IP degree of protection IP 30		Yes: Parameterizable
Diagnostic information readable Wire-break Short-circuit Yes Diagnostics indication LED Group error SF (red) Yes Potential separation Potential separation analog inputs between the channels between the channels and backplane bus Between the channels and load voltage L+ Yes; Power bus Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP30		
Wire-break Short-circuit Yes Diagnostics indication LED Group error SF (red) Potential separation Potential separation analog inputs between the channels between the channels and backplane bus Between the channels and load voltage L+ Yes; Power bus Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP30		Yes
● Short-circuit Diagnostics indication LED ● Group error SF (red) Potential separation Potential separation analog inputs ● between the channels ● between the channels and backplane bus ● between the channels and load voltage L+ Permissible potential difference between different circuits Degree and class of protection IP degree of protection IP30	-	
Group error SF (red) Potential separation Potential separation analog inputs between the channels between the channels and backplane bus Between the channels and load voltage L+ Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP30	Short-circuit	Yes
Potential separation Potential separation analog inputs • between the channels • between the channels and backplane bus • Between the channels and load voltage L+ Yes; Power bus Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP30	Diagnostics indication LED	
Potential separation analog inputs • between the channels • between the channels and backplane bus • Between the channels and load voltage L+ Yes; Power bus Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP30	Group error SF (red)	Yes
between the channels between the channels and backplane bus between the channels and load voltage L+ Yes; Power bus Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP30	Potential separation	
between the channels and backplane bus Between the channels and load voltage L+ Yes; Power bus Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP30	Potential separation analog inputs	
Between the channels and load voltage L+ Yes; Power bus Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP30	between the channels	No
Permissible potential difference between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP30	• between the channels and backplane bus	Yes
between different circuits 60 V DC/30 V AC Degree and class of protection IP degree of protection IP30	 Between the channels and load voltage L+ 	Yes; Power bus
Degree and class of protection IP degree of protection IP30	Permissible potential difference	
IP degree of protection IP30	between different circuits	60 V DC/30 V AC
	Degree and class of protection	
Standards, approvals, certificates	IP degree of protection	IP30
	Standards, approvals, certificates	

CE mark	Yes
Suitable for safety functions	Yes
reference designation according to IEC 81346-2 (2009)	K
Highest safety class achievable in safety mode	
• acc. to EN 954	4
 Performance level according to ISO 13849-1 	PLe
SIL acc. to IEC 61508	SIL 3
Use in hazardous areas	
ATEX marking	II 2 G (1) GD Ex ib[ia Ga][ia IIIC Da] IIC T4 GB and I M2 Ex ib[ia Ma] I Mb
ATEX certificate	10 ATEX 0058
 Explosion protection category for gas 	ATEX gas explosion protection, Zone 1
Explosion protection category for dust	ATEX dust explosion protection, Zone 21 always install in corresponding enclosure
 associated equipment (Ex ia) 	Yes
 associated equipment (Ex ib) 	Yes
connection method	
Design of electrical connection	Screw/spring-type terminal
Dimensions	
Width	30 mm
Height	129 mm
Depth	136.5 mm
Weights	
Weight, approx.	299 g

last modified: 4/25/2024 🖸