SIEMENS

Data sheet

6ES7144-6KD00-0AB0



SIMATIC DP, ET 200ECO PN, 8 AI (4 U/I+4 RTD/TC); 8x M12, Degree of protection IP67 $\,$

Figure similar

Seneral information Vendor identification (VendorID) 002AH 002	i igure sininai	
Device identifier (DeviceID) Usuary vortage	General information	
Rated value (DC)	Vendor identification (VendorID)	002AH
Rated value (DC)	Device identifier (DeviceID)	0306H
Reverse polarity protection	Supply voltage	
power supply according to NEC Class 2 required Input current Current consumption, typ. 110 mA Encoder supply Number of outputs 4 24 V encoder supply • Short-circuit protection Yes; Electronic at 1.4 A • Output current, max. 1 A Power loss Power loss, typ. 2.8 W Analog inputs Number of analog inputs 8 • For voltage/current measurement 4 • For resistance/resistance thermometer measurement 4 permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages • 0 to +10 V Yes • 10 V to +10 V Yes • 10 V to +80 mV Yes Input ranges (rated values), currents • 0 to 20 mA Yes • 1 type J Yes • Type I Yes • Type J Yes • Type N Yes Input ranges (rated values), thermocouples • Type K Yes • Type N Yes Input ranges (rated values), resistance thermometer • Ni 100 Yes	Rated value (DC)	24 V
Input current Current consumption, typ. 110 mA Encoder supply Number of outputs 4 24 V encoder supply • Short-circuit protection Yes; Electronic at 1.4 A • Output current, max. 1 A Power loss Power loss, typ. 2.8 W Analog inputs Number of analog inputs • For voltage/current measurement 4 • For resistance/resistance thermometer measurement 4 • For resistance/resistance thermometer measurement 4 permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages • 0 to +10 V Y Yes • 10 V to 5 V Yes • 10 V to +10 V Yes • 80 mV to +80 mV Yes Input ranges (rated values), currents • 0 to 20 mA • 20 mA to +20 mA • 20 mA to +20 mA • 1 Type E • Type J • Type F • Type V • Type F • Type N Input ranges (rated values), resistance thermometer • Ni 100 Yes	Reverse polarity protection	Yes
Current consumption, typ. 110 mA Encoder supply Number of outputs 4 24 V encoder supply Short-circuit protection Yes; Electronic at 1.4 A Output current, max. 1 A Power loss Power loss V Power loss, typ. 2.8 W Analog inputs Number of analog inputs 8 For voltage/current measurement 4 For resistance/resistance thermometer measurement 4 permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages I to 4 10 V Yes I to 5 V Yes I 10 V to 5 V Yes Input ranges (rated values), currents O to 20 mA Yes A mA to 20 mA Yes Input ranges (rated values), thermocouples I type E Type E Type E Type F Type N I put ranges (rated values), resistance thermometer Ni 100 Yes	power supply according to NEC Class 2 required	Yes
Encoder supply Number of outputs 4 Ye recoder supply • Short-circuit protection • Output current, max. 1 A Power loss Power loss, typ. Anatog Inputs Number of analog inputs • For voltage/current measurement • For resistance/resistance thermometer measurement permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages • 10 to +10 V • Yes • -10 V to +5 V • -80 mV to +80 mV Input ranges (rated values), currents • 0 to 20 mA • 4 mA to 20 mA privale • Type E • Type E • Type S Input ranges (rated values), resistance thermometer • Ni 100 Yes Input ranges (rated values), resistance thermocupter • Ni 100 Yes	Input current	
Number of outputs 4 24 V encoder supply Short-circuit protection Yes; Electronic at 1.4 A Output current, max. 1 A Power loss Power loss, typ. 2.8 W Analog inputs Number of analog inputs 8 For voltage/current measurement 4 For resistance/resistance thermometer measurement 4 permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages 0 to +10 V Yes -10 V to +10 V Yes -80 mV to +80 mV Yes 1nput ranges (rated values), currents 0 to 20 mA Yes -20 mA to +20 mA Yes -10 put ranges (rated values), thermocouples 1 yes 1 yes 1 yes 1 yes -1 ye F -1 ye N -1 yes -1 y	Current consumption, typ.	110 mA
24 V encoder supply Short-circuit protection Output current, max. Power loss. Power loss, typ. Analog inputs Number of analog inputs For voitage/current measurement For resistance/resistance thermometer measurement permissible input voitage for voitage input (destruction limit), max. Input ranges (rated values), voitages 0 to +10 V 1 to 5 V 1 V to 5 V 2 S8 W bermanent, 35 V for max. 500 ms 1 V to 5 V 1 V to 5 V 2 S8 W permanent, 35 V for max. 500 ms 1 V to 5 V 1 V to 5 V 2 S8 W permanent, 35 V for max. 500 ms 28 S8 V permanent, 35 V for max. 500 ms 28 S8 V permanent, 35 V for max. 500 ms 28 S8 V permanent, 35 V for max. 500 ms 28 S8 V permanent, 35 V for max. 500 ms 28 S8 V permanent, 35 V for max. 500 ms 28 S8 V permanent, 35 V for max. 500 ms 28 S8 V permanent, 35 V for max. 500 ms 29 S8 S8 V permanent, 35 V for max. 500 ms 29 S8 S8 V permanent, 35 V for max. 500 ms 20 S8 S8 V permanent, 35 V for max. 500 ms 20 S8 V permanent, 35 V for max. 5	Encoder supply	
Short-circuit protection Output current, max. Power loss Power loss, typ. Analog inputs Number of analog inputs For voltage/current measurement For resistance/resistance thermometer measurement Permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages 1 V to 5 V 1 V to 5 V 1 V to 5 V 1 O to 10 V to +10 V 2 Fes More and to +20 mA 2 Can More Acade Aca	Number of outputs	4
Output current, max. Power loss Power loss, typ. Analog inputs Number of analog inputs For voltage/current measurement For resistance/resistance thermometer measurement permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages o to to +10 V	24 V encoder supply	
Power loss Power loss, typ. Analog inputs Number of analog inputs • For voltage/current measurement • For resistance/resistance thermometer measurement permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages • 0 to +10 V • 1 V to 5 V • -10 V to +10 V • -80 mV to +80 mV • 0 to 20 mA • -20 mA to +20 mA • -20 mA to 20 mA • -20 mA to 20 mA • Type E • Type B • Type B • Type K • Type N Input ranges (rated values), resistance thermometer • Ni 100 Yes 1 Ves	Short-circuit protection	Yes; Electronic at 1.4 A
Power loss, typ. Analog inputs Number of analog inputs • For voltage/current measurement • For resistance/resistance thermometer measurement permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages • 0 to +10 V • 1 V to 5 V • 1 V to 5 V • -10 V to +10 V • -80 mV to +80 mV Input ranges (rated values), currents • 0 to 20 mA • -20 mA to +20 mA • 4 mA to 20 mA Input ranges (rated values), thermocouples • Type E • Type J • Type K • Type N Input ranges (rated values), resistance thermometer • Ni 100 Yes	 Output current, max. 	1 A
Analog inputs Number of analog inputs For voltage/current measurement For resistance/resistance thermometer measurement permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages 0 to +10 V 1 to 5 V 1 V to 5 V 28.8 V permanent, 35 V for max. 500 ms ***Pes** 1 V to 5 V 28.8 V permanent, 35 V for max. 500 ms ***Pes** 1 V to 5 V 28.8 V permanent, 35 V for max. 500 ms ***Pes** 1 V to 5 V 28.8 V permanent, 35 V for max. 500 ms ***Pes** 1 V to 5 V 28.8 V permanent, 35 V for max. 500 ms ***Pes** 1 V to 5 V 28.8 V permanent, 35 V for max. 500 ms ***Pes** 1 V to 5 V 28.8 V permanent, 35 V for max. 500 ms ***Pes** 1 V to 5 V 2 V es 1 V es 1 T to 5 V 2 V es 4 T to 6 V 4 M to 20 mA 4 V es 1 T to 20 mA 4 T to 20 mA 4 T to 20 mA 5 T to 20 mA 7 T to 20 mA	Power loss	
Number of analog inputs • For voltage/current measurement • For resistance/resistance thermometer measurement permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages • 0 to +10 V • 1 V to 5 V • -10 V to +10 V • -80 mV to +80 mV Input ranges (rated values), currents • 0 to 20 mA • -20 mA to +20 mA • 4 mA to 20 mA Input ranges (rated values), thermocouples • Type E • Type J • Type K • Type N Input ranges (rated values), resistance thermometer • Ni 100 Yes	Power loss, typ.	2.8 W
For voltage/current measurement For resistance/resistance thermometer measurement permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages • 0 to +10 V	Analog inputs	
For resistance/resistance thermometer measurement permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages • 0 to +10 V	Number of analog inputs	8
permissible input voltage for voltage input (destruction limit), max. Input ranges (rated values), voltages • 0 to +10 V • 1 V to 5 V • -10 V to +10 V • -80 mV to +80 mV Input ranges (rated values), currents • 0 to 20 mA • -20 mA to +20 mA • 4 mA to 20 mA Input ranges (rated values), thermocouples • Type E • Type J • Type N Input ranges (rated values), resistance thermometer • Ni 100 Yes 28.8 V permanent, 35 V for max. 500 ms 28.8 V permanent, 35 V for max. 500 ms 28.8 V permanent, 35 V for max. 500 ms 28.8 V permanent, 35 V for max. 500 ms 28.8 V permanent, 35 V for max. 500 ms 4 yes 4 yes 4 yes 4 yes 5 Yes • Type I • Yes • Type I • Yes • Type N Input ranges (rated values), resistance thermometer • Ni 100	 For voltage/current measurement 	4
Input ranges (rated values), voltages • 0 to +10 V	For resistance/resistance thermometer measurement	4
 0 to +10 V 1 V to 5 V -10 V to +10 V -80 mV to +80 mV Yes Input ranges (rated values), currents 0 to 20 mA -20 mA to +20 mA Yes 4 mA to 20 mA Type E Type E Type J Type K Type N Input ranges (rated values), resistance thermometer Ni 100 Yes 		28.8 V permanent, 35 V for max. 500 ms
 1 V to 5 V -10 V to +10 V -80 mV to +80 mV Yes Input ranges (rated values), currents 0 to 20 mA -20 mA to +20 mA 4 mA to 20 mA Type E Type J Type K Type N Input ranges (rated values), resistance thermometer Ni 100 Yes Yes Yes Type N Yes 	Input ranges (rated values), voltages	
	• 0 to +10 V	Yes
	• 1 V to 5 V	Yes
Input ranges (rated values), currents • 0 to 20 mA • -20 mA to +20 mA • 4 mA to 20 mA Input ranges (rated values), thermocouples • Type E • Type J • Type K • Type N Input ranges (rated values), resistance thermometer • Ni 100 Yes	• -10 V to +10 V	Yes
• 0 to 20 mA • -20 mA to +20 mA • -20 mA to 20 mA • 4 mA to 20 mA Input ranges (rated values), thermocouples • Type E • Type J • Type K • Type N Input ranges (rated values), resistance thermometer • Ni 100 Yes	● -80 mV to +80 mV	Yes
 -20 mA to +20 mA 4 mA to 20 mA Type E Type J Type K Type N Type N Input ranges (rated values), thermocouples Yes Type N Yes Type N Yes Type N Yes Type N Yes 	Input ranges (rated values), currents	
4 mA to 20 mA Input ranges (rated values), thermocouples Type E Type J Type K Type N Input ranges (rated values), resistance thermometer Ni 100 Yes	• 0 to 20 mA	Yes
Input ranges (rated values), thermocouples • Type E • Type J • Type K • Type K • Type N Input ranges (rated values), resistance thermometer • Ni 100 Yes		
 Type E Type J Type K Type N Type N Type N Input ranges (rated values), resistance thermometer Ni 100 Yes 		Yes
 Type J Type K Type N Type N Yes Input ranges (rated values), resistance thermometer Ni 100 Yes 		
Type K Type N Yes Type N Yes Input ranges (rated values), resistance thermometer Ni 100 Yes		
Type N Yes Input ranges (rated values), resistance thermometer Ni 100 Yes	•	
Input ranges (rated values), resistance thermometer • Ni 100 Yes		
• Ni 100 Yes		Yes
• Ni 1000 Yes		
	• Ni 1000	Yes

● Ni 120	Yes
• Ni 200	Yes
● Ni 500	Yes
• Pt 100	Yes
• Pt 1000	Yes
• Pt 200	Yes
• Pt 500	Yes
Input ranges (rated values), resistors	
• 0 to 150 ohms	Yes
• 0 to 300 ohms	Yes
• 0 to 600 ohms	Yes
• 0 to 3000 ohms	Yes
Thermocouple (TC)	
Temperature compensation	
— parameterizable	Yes
 internal temperature compensation 	Yes
 external temperature compensation with 	Yes
compensations socket	
Cable length	
• shielded, max.	30 m
Analog value generation for the inputs	
Analog value display	SIMATIC S7 format
Measurement principle	integrating
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), max. 	16 bit
 Integration time, parameterizable 	Yes
Integration time (ms)	2/16.67/20/100 ms
 Interference voltage suppression for interference 	500 / 60 / 50 / 10 Hz
frequency f1 in Hz	
Conversion time (per channel)	4 / 19 / 22 / 102 ms
Smoothing of measured values	
parameterizable	Yes
Step: None	Yes; 1x cycle time
Step: low	Yes; 4x cycle time
Step: Medium	Yes; 16x cycle time
Step: High	Yes; 64x cycle time
Encoder	
Number of connectable encoders, max.	8
Connection of signal encoders	
 for voltage measurement 	Yes
 for current measurement as 2-wire transducer 	Yes
 for current measurement as 4-wire transducer 	Yes
• for resistance measurement with two-wire connection	Yes
• for resistance measurement with three-wire connection	Yes
• for resistance measurement with four-wire connection	Yes
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.01 %
Temperature error (relative to input range), (+/-)	U: 0.0035%/°C; I:0.006%/°C; RTD: 0.0005%/°C; TC: 0.0035%/°C
Crosstalk between the inputs, min.	85 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.008 %
Interference voltage suppression for $f = n \times (f1 + /- 1 \%)$, $f1 = interfe$	erence frequency
Series mode interference (peak value of interference < rated value of input range), min.	46 dB
Common mode interference, min.	70 dB
Interfaces	
Transmission procedure	100BASE-TX
Number of PROFINET interfaces	1
Interface	
Interface types	Von
M12 port integrated quiteb	Yes
integrated switch	Yes

Interface types	
· · · · · · · · · · · · · · · · · · ·	
M12 port • Autonegotiation	Yes
Autoregoliation Autorossing	Yes
Transmission rate, max.	100 Mbit/s
Protocols	100 MIDIUS
Supports protocol for PROFINET IO	Yes
PROFINET CBA	No
PROFIsafe	No
PROFINET IO Device	110
Services	
IRT with the option "high flexibility"	Yes
— Prioritized startup	Yes
Redundancy mode	
Media redundancy	
— MRP	Yes
Open IE communication	
• TCP/IP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
• ping	Yes
• ARP	Yes
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
Diagnostic alarm	Yes
Diagnoses	
 Diagnostic information readable 	Yes
 Monitoring the supply voltage 	Yes; green "ON" LED
 Short-circuit encoder supply 	Yes; per module
Group error	Yes; Red/yellow "SF/MT" LED
Overflow/underflow	Yes
Potential separation	
between the load voltages	Yes
between load voltage and all other switching components	No
between Ethernet and electronics	Yes
Potential separation channels	N.
between the channels	No
Permissible potential difference	40.1/27.40
Between the inputs and MANA (UCM)	10 Vpp AC
Isolation	
tested with	707 V DC (type test)
24 V DC circuits24 V DC circuits	707 V DC (type test) 707 V DC (type test)
24 V DC circuitsTest voltage for interface, rms value [Vrms]	1 500 V; According to IEEE 802.3
Degree and class of protection	1 300 V, According to ILLE 602.3
IP degree of protection	IP65/67
Standards, approvals, certificates	33(3)
Suitable for applications according to AMS 2750	Yes; Declaration of Conformity, see online support entry 109757262
Suitable for applications according to CQI-9	Yes; Based on AMS 2750 E
Use in hazardous areas	
Explosion protection category for gas	ATEX gas explosion protection, Zone 2
Explosion protection category for dust	ATEX dust explosion protection, Zone 22
connection method	
Design of electrical connection	4/5-pin M12 circular connectors
Dimensions	
Width	60 mm
Height	175 mm
Depth	49 mm

Weights
Weight, approx.

930 g

last modified:
10/18/2024