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Data sheet 6ES7138-4DL00-0AB0



*** Spare part *** SIMATIC DP, Electronics module for ET 200S, 1 POS U, Controlled positioning with digital outputs for 5 V/24 V incremental encoder, SSI encoder, 30 mm overall width

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 voltage L+ (without load), max.	55 mA
from backplane bus 3.3 V DC, max.	10 mA
Encoder supply	
5 V encoder supply	
● 5 V	No
24 V encoder supply	
● 24 V	Yes
● Short-circuit protection	Yes
● Output current, max.	500 mA
Absolute encoder (SSI) encoder supply	
● Absolute encoder (SSI)	Yes
● Type of output voltage	L+ (-0.8 V)
● Short-circuit protection	Yes
● Output current, max.	500 mA
Power loss	
Power loss, typ.	2 W
Digital inputs	
Input characteristic curve in accordance with IEC 61131, type 2	Yes
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)	2 mA
● for signal "1", typ.	9 mA
Input delay (for rated value of input voltage)	
● Input frequency (with a time delay of 0.1 ms), max.	100 kHz
Cable length	
● unshielded, max.	50 m
Digital outputs	
Short-circuit protection	Yes
● Response threshold, typ.	0.7 to 1.8 A

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Limitation of inductive shutdown voltage to	Yes; L+ -(55 to 60 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
● on lamp load, max.	5 W
Output voltage	
● Rated value (DC)	24 V
● for signal "0", max.	3 V
● for signal "1", min.	L+ (-1 V)
Output current	
● for signal "1" permissible range for 0 to 60 °C, min.	7 mA
● for signal "1" permissible range for 0 to 60 °C, max.	600 mA
● for signal "0" residual current, max.	0.3 mA
Output delay with resistive load	
● "0" to "1", max.	typically 150 µs
● "1" to "0", max.	typically 150 µs
Switching frequency	
● with resistive load, max.	100 Hz
● with inductive load, max.	2 Hz
● on lamp load, max.	10 Hz
Cable length	
● shielded, max.	1 000 m
● unshielded, max.	600 m
Encoder	
Number of connectable encoders, max.	1
Connectable encoders	
● Incremental encoder (symmetrical)	Yes
● Incremental encoder (asymmetrical)	Yes
● Absolute encoder (SSI)	Yes
● 2-wire sensor	Yes; Type 2
Encoder signals, incremental encoder (symmetrical)	
● Input voltage	to RS-422
● Differential input voltage, min.	1 V
● terminating resistor	330 Ω
● Input frequency, max.	500 kHz
● Cable length, shielded, max.	50 m
Encoder signals, absolute encoder (SSI)	
● Cable length, shielded, max.	320 m at 125 kHz, 160 m at 250 kHz, 60 m at 500 kHz, 20 m at 1 MHz, 8 m at 2 MHz, twisted in pairs and shielded
● Monoflop time	64 µs
Updating the encoder value	
— Telegram runtime at 13 bit, min.	7 µs
— Telegram runtime at 25 bit, min.	13 µs
Response times	
Updating time of the feedback messages	1 ms
Latch	In the case of incremental encoders: typ. 400 ms; in the case of SSI encoders: typ. 400 ms + age of the encoder value:
Response time at switchover/switchoff point	In the case of incremental encoders: output delay + 30 µs; in the case of SSI encoders: output delay + message frame runtime + 30 ms
Interrupts/diagnostics/status information	
Diagnostics indication LED	
● Actual value falling DN (green)	Yes
● Actual value rising UP (green)	Yes
● Positioning mode POS (green)	Yes
● Group error SF (red)	Yes
● Status indicator digital input (green)	Yes
Potential separation	
between backplane bus and all other circuit components	Yes
between the channels and backplane bus	Yes
Dimensions	

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Width	30 mm
Height	81 mm
Depth	52 mm

Weights

Weight, approx.	65 g

Classifications

	Version	Classification
eClass	16	27-24-26-05
eClass	14	27-24-26-05
eClass	12	27-24-26-05
eClass	9.1	27-24-26-05
eClass	9	27-24-26-05
eClass	8	27-24-26-05
eClass	7.1	27-24-26-05
eClass	6	27-24-26-05
ETIM	10	EC001601
ETIM	9	EC001601
ETIM	8	EC001601
ETIM	7	EC001601
IDEA	4	3567
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

Miscellaneous | Manufacturer Declaration

General Product Approval | **EMV** | **For use in hazardous locations**

China RoHS

For use in hazardous locations

FM | Miscellaneous

For use in hazardous locations | **Maritime application**

CCC-Ex | NK / Nippon Kaiji Kyokai

Maritime application

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CCS (China Classification Society)

KR (Korean Register of Shipping)

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