

SIEMENS

Product data sheet

6ES7138-4DL00-0AB0


SIMATIC DP,
ELECTRONIC MODULE FOR ET 200S, 1 POS U,
CONTROLLED POSITIONING WITH DIGITAL
OUTPUTS FOR 5V/24V INCREMENTAL ENCODER,
SSI-ENCODER, 30MM WIDE

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
Output voltage	L+ (-0.8 V)
Output current, max.	500 mA
Short-circuit protection	Yes
Power losses	
Power loss, typ.	2 W
Digital inputs	
Input characteristic curve acc. to IEC 61131, Type 2	Yes
Input voltage	
Rated value, DC	24 V
for signal "0"	-30 to +5 V
for signal "1"	11 to 30 V
Input current	
for signal "0", max. (permissible quiescent current)	2 mA
for signal "1", typ.	9 mA
Cable length	
Cable length unshielded, max.	50 m
Digital outputs	
Functionality/short-circuit strength	Yes
Response threshold, typ.	0.7 to 1.8 A
Limitation of inductive shutdown voltage to	Yes; L+ -(55 to 60 V)
Lamp load, max.	5 W
Controlling a digital input	Yes
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 μ s
"1" to "0", max.	typically 150 μ s
Switching frequency	
with resistive load, max.	100 Hz
with inductive load, max.	2 Hz
on lamp load, max.	10 Hz
Cable length	
Cable length, shielded, max.	1000 m
Cable length 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)	
Encoder signal 5 V	
Signal level	to RS-422
Terminating resistor	330 Ω
Differential input voltage, min.	1 V
Input frequency, max.	500 kHz
Cable length, shielded, max.	50 m
Encoder signal 24 V	
Rated value 24 V DC	Yes
Input voltage for signal "0"	5 V
Input voltage for signal "1"	30 V
Input current, for signal "0", max. (permissible quiescent current)	2 mA
Input current for signal "1", typ.	9 mA
Input frequency, max.	100 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
Updating the encoder value	
Telegram runtime at 13 bit, min.	7 ms
Telegram runtime at 25 bit, min.	13 ms
Monoflop time	64 ms
Response times	
Update 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 time	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
Galvanic isolation	
between backplane bus and all other circuit components	Yes
between the channels and backplane bus	Yes
Dimensions	
Width	30 mm
Height	81 mm
Depth	52 mm
Weight	
Weight, approx.	65 g
Status	Jul 17, 2012