SIEMENS

Data sheet 6ES7138-4DE02-0AB0



Figure similar

*** Spare part *** SIMATIC DP, Electronics module for ET 200S, 1 count 5 V/500 kHz connection of RS422 incremental encoders, operating modes: Measure, Count, 30 mm installation width, 1-channel with clock synchronization

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.	45 mA
from backplane bus 3.3 V DC, max.	10 mA
Encoder supply	
24 V encoder supply	
● 24 V	Yes; L+ (-0.8 V)
● Short-circuit protection	Yes
● Output current, max.	500 mA
Power loss	
Power loss, typ.	2 W
Hardware configuration	
Module exchange	
● Module exchange during operation of the IM-DP	Yes
● Module exchange under process voltage	Yes
Digital inputs	
Number of digital inputs	1
Functions	Gate control, synchronization, latch function
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)	
for standard inputs	
— at "0" to "1", max.	2.5 µs
Cable length	
● shielded, max.	50 m
Digital outputs	
Number of digital outputs	2

© Copyright Plcally

Short-circuit protection	Yes
● Response threshold, typ.	2.6 A to 4 A
Limitation of inductive shutdown voltage to	L+ (-50 to -60 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
● on lamp load, max.	10 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" rated value	2 A
● for signal "1" permissible range for 0 to 60 °C, min.	5 mA
● for signal "1" permissible range for 0 to 60 °C, max.	2.4 A
● for signal "0" residual current, max.	0.5 mA
Output delay with resistive load	
● "0" to "1", max.	100 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
Encoder signals, incremental encoder (symmetrical)	
● Trace mark signals	A, notA, B, notB, A and B offset by 90°
● Zero mark signal	N, notN
● Input voltage	to RS-422
● Differential input voltage, min.	1 V
● terminating resistor	330 Ω
● Input frequency, max.	650 kHz
● Cable length, shielded, max.	50 m; > 500 kHz: 30 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Diagnostics indication LED	
● Group error SF (red)	Yes
● Status indicator digital input (green)	Yes
● Status indicator digital output (green)	Yes
● Status indicator forward counting (green)	Yes
● Status indicator backward counting (green)	Yes
● Synchronization SYN (green)	Yes
Integrated Functions	
Measuring functions	
Measuring range	
— Frequency measurement, min.	0.1 Hz
— Frequency measurement, max.	500 kHz
— Cycle duration measurement, min.	10 µs
— Cycle duration measurement, max.	120 s
— Speed measurement, min.	1 1/min
— Speed measurement, max.	25 000 1/min
Counter	
Number of counter inputs	1; 32 bit
Parameter	
Remark	16 byte

© Copyright Plcally

Potential separation	
Potential separation digital inputs	
● Potential separation digital inputs	No; only opposite shielding
Potential separation counter	
● between the channels and backplane bus	Yes
● Between the channels and load voltage L+	No
Dimensions	
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

© Copyright PIcally

CCC-Ex

ABS

BUREAU VERITAS

DNV

LRS

NK / Nippon Kaiji Kyokai

Maritime application

PRS

RINA

CCS (China Classification Society)

last modified: 8/22/2025

Subject to change without notice
© Copyright Plcally