

SIEMENS

Product data sheet

6ES7138-4DE02-0AB0


SIMATIC DP,
ELECTRONIC MODULE FOR ET 200S,
1 COUNT 5V/500KHZ FOR CONNECTING RS442
INCREMENTAL ENCODERS,
OPERATION MODES: MEASURE,
COUNT 30MM WIDE,
SINGLE CHANNEL WITH CLOCK CYCLIC
SYNCHRON.APP

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 losses	

Power loss, typ.	2 W
Hardware configuration	
Module exchange	
Hot swapping the IM-DP	Yes
Module exchange under process voltage	Yes
Digital inputs	
Number/binary inputs	1
Functions	Gate control, synchronization, latch function
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
Input delay (for rated value of input voltage)	
for standard inputs	
at "0" to "1", max.	2.5 μ s
Cable length	
Cable length, shielded, max.	50 m
Digital outputs	
Number/binary outputs	2
Functionality/short-circuit strength	Yes
Response threshold, typ.	2.6 A to 4 A
Limitation of inductive shutdown voltage to	L+ (-50 to -60 V)
Lamp load, max.	10 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" 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	
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
2-wire sensor	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 signal	5 V difference signal (phys. RS 422)
Input frequency, max.	650 kHz
Cable length, shielded, max.	50 m ; > 500 kHz: 30 m
Interrupts/diagnostics/status information	
Diagnostic messages	
Diagnostic functions	Yes
Diagnostics indication LED	
Group error SF (red)	Yes
Status indicator digital output (green)	Yes
Status indicator digital input (green)	Yes
Status indicator backward counting (green)	Yes
Status indicator forward counting (green)	Yes

Synchronization SYN (green)	Yes
Counter	
Number of counter inputs	1 ; 32 bits
Frequency measurement	
Measurement range, min.	0.1 Hz
Measurement range, max.	500 kHz
Cycle duration measurement	
Measuring range, lower limit	10 μ s
Measuring range, upper limit	120 s
Speed measurement	
Measurement range, min. (lower limit)	1 1/min
Measurement range, max. (upper limit)	25000 1/min
Parameter	
Remark	16 byte
Galvanic isolation	
Galvanic isolation digital inputs	
Galvanic isolation digital inputs	No ; only opposite shielding
Galvanic isolation counter	
between the channels and the backplane bus	Yes
between the channels and the load voltage L+	No
Dimensions	
Width	30 mm
Height	81 mm
Depth	52 mm
Weight	
Weight, approx.	65 g
Status	Jul 17, 2012