

# SIEMENS

## Product data sheet

**6ES7332-5TB00-0AB0**


SIMATIC DP, HART ANALOG OUTPUT SM 332,  
2AO, 0/4 - 20MA HART,  
FOR ET200M WITH IM153-2, 20 PIN

Supply voltage	
Load voltage L+	
Rated value (DC)	24 V
Reverse polarity protection	Yes
Input current	
from backplane bus 5 V DC, max.	100 mA
from supply voltage L+, max.	150 mA
Power losses	
Power loss, typ.	3.5 W
Analog outputs	
Number of analog outputs	2
Voltage output, short-circuit protection	Yes
Current output, no-load voltage, max.	19 V
Cycle time (all channels) max.	5 ms
Output ranges, current	

0 to 20 mA	Yes
4 to 20 mA	Yes
<b>Connection of actuators</b>	
for current output 2-conductor connection	Yes
<b>Load impedance (in rated range of output)</b>	
with current outputs, max.	650 $\Omega$
with current outputs, inductive load, max.	7.5 mH
<b>Destruction limits against externally applied voltages and currents</b>	
Voltages at the outputs towards MANA	max. 17 V / -0.5 V
Current, max.	60 mA / -1 A
<b>Cable length</b>	
Cable length, shielded, max.	400 m
<b>Analog value creation</b>	
<b>Integrations and conversion time/ resolution per channel</b>	
Resolution with overrange (bit including sign), max.	12 bit ; Output value; 8 bit (+ sign) read back value
Conversion time (per channel)	40 ms
<b>Settling time</b>	
for resistive load	2.5 ms
for capacitive load	4 ms
for inductive load	2.5 ms
<b>Errors/accuracies</b>	
Output ripple (based on output area, bandwidth 0 to 50 kHz)	+/- 0.02 %
Linearity error (relative to output area)	+/- 0.03 %
Temperature error (relative to output area)	+/- 0.01 %
Crosstalk between the outputs, min.	130 dB
Repeat accuracy in settled status at 25 °C (relative to output area)	+/- 0.005 %
<b>Operational limit in overall temperature range</b>	
Current, relative to output area	+/- 0,55 %
<b>Basic error limit (operational limit at 25 °C)</b>	
Current, relative to output area	+/- 0,15 %
<b>Interrupts/diagnostics/status information</b>	

Substitute values connectable	Yes ; Parameterizable
<b>Alarms</b>	
Diagnostic alarm	Yes ; Parameterizable
<b>Diagnostic messages</b>	
Diagnostic functions	Yes ; Parameterizable
Diagnostic information readable	Yes
Diagnostics	Yes
Overrange	Yes
Wire break	Yes ; as of output value > 0.5 mA
Wire break in actuator cable	Yes
HART communication active	Yes ; green LED (H)
<b>Diagnostics indication LED</b>	
Group error SF (red)	Yes ; Additional group message per channel
Channel error indicator F (red)	Yes ; per channel
<b>Ex(i) characteristics</b>	
Module for Ex(i) protection	Yes
<b>Max. values of output circuits (per channel)</b>	
Co (permissible external capacity), max.	230 nF
Io (short-circuit current), max.	66 mA
Lo (permissible external inductivity), max.	7.5 mH
Po (power of load), max.	506 mW
Uo (output no-load voltage), max.	19 V
Um (fault voltage), max.	60 V ; DC
Ta (permissible ambient temperature), max.	60 °C
<b>Galvanic isolation</b>	
between the channels and backplane bus	Yes
<b>Galvanic isolation analog outputs</b>	
Galvanic isolation analog outputs	Yes
between the channels	Yes
between the channels and the load voltage L+	Yes
<b>Permissible potential difference</b>	
between the outputs (UCM)	60 V DC/30 V AC
between M internally and the outputs	60 V DC/30 V AC

Isolation	
tested with	
Channels against backplane bus and load voltage L+	1500 V AC
Channels among one another	1500 V AC
Load voltage L+ against backplane bus	500 V DC
Standards, approvals, certificates	
FM approval	Available soon
Use in hazardous areas	
Type of protection acc. to EN 50020 (CENELEC)	[EEx ib] IIC
Type of protection acc. to FM	Class I, Division 2, Group A, B, C, D T4; Class I, Zone 2, Group IIC T4
Test number KEMA	97 ATEX 2359 X
Type of protection acc. to KEMA	II3 (2) G Eex nA [ib] IIC T4
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weight	
Weight, approx.	280 g
Status	Jul 17, 2012