

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

SIEMENS

Data sheet 6ES7331-7KF02-0AB0



Figure similar

SIMATIC S7-300, Analog input SM 331, isolated, 8 AI, Resolution 9/12/14 bits, U/I/thermocouple/resistor, alarm, diagnostics, 1x 20-pole Removing/inserting with active backplane bus

Supply voltage	
Load voltage L+	
● Rated value (DC)	24 V
● Reverse polarity protection	Yes
Input current	
from load voltage L+ (without load), max.	30 mA
from backplane bus 5 V DC, max.	50 mA
Power loss	
Power loss, typ.	1 W
Analog inputs	
Number of analog inputs	8
● For resistance measurement	4
permissible input voltage for voltage input (destruction limit), max.	20 V; continuous; 75 V for max. 1 s (mark to space ratio 1:20)
permissible input current for current input (destruction limit), max.	40 mA
Constant measurement current for resistance-type transmitter, typ.	1.67 mA
Input ranges	
● Voltage	Yes
● Current	Yes
● Thermocouple	Yes
● Resistance thermometer	Yes
● Resistance	Yes
Input ranges (rated values), voltages	
● 0 to +10 V	No
● 1 V to 5 V	Yes
— Input resistance (1 V to 5 V)	100 kΩ
● 1 V to 10 V	No
● -1 V to +1 V	Yes
— Input resistance (-1 V to +1 V)	10 MΩ
● -10 V to +10 V	Yes
— Input resistance (-10 V to +10 V)	100 kΩ
● -2.5 V to +2.5 V	Yes
— Input resistance (-2.5 V to +2.5 V)	100 kΩ
● -250 mV to +250 mV	Yes
— Input resistance (-250 mV to +250 mV)	10 MΩ
● -5 V to +5 V	Yes
— Input resistance (-5 V to +5 V)	100 kΩ

Subject to change without notice
© Copyright Siemens

● -50 mV to +50 mV	No
● -500 mV to +500 mV	Yes
— Input resistance (-500 mV to +500 mV)	10 MΩ
● -80 mV to +80 mV	Yes
— Input resistance (-80 mV to +80 mV)	10 MΩ
Input ranges (rated values), currents	
● 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	25 Ω
● -10 mA to +10 mA	Yes
— Input resistance (-10 mA to +10 mA)	25 Ω
● -20 mA to +20 mA	Yes
— Input resistance (-20 mA to +20 mA)	25 Ω
● -3.2 mA to +3.2 mA	Yes
— Input resistance (-3.2 mA to +3.2 mA)	25 Ω
● 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	25 Ω
Input ranges (rated values), thermocouples	
● Type B	No
● Type C	No
● Type E	Yes
— Input resistance (Type E)	10 MΩ
● Type J	Yes
— Input resistance (type J)	10 MΩ
● Type K	Yes
— Input resistance (Type K)	10 MΩ
● Type L	Yes
— Input resistance (Type L)	10 MΩ
● Type N	Yes
— Input resistance (Type N)	10 MΩ
● Type R	No
● Type S	No
● Type T	No
● Type U	No
● Type TXK/TXK(L) to GOST	No
Input ranges (rated values), resistance thermometer	
● Cu 10	No
● Ni 100	Yes; Standard
— Input resistance (Ni 100)	10 MΩ
● Ni 1000	No
● LG-Ni 1000	No
● Ni 120	No
● Ni 200	No
● Ni 500	No
● Pt 100	Yes; Standard
— Input resistance (Pt 100)	10 MΩ
● Pt 1000	No
● Pt 200	No
● Pt 500	No
Input ranges (rated values), resistors	
● 0 to 150 ohms	Yes
— Input resistance (0 to 150 ohms)	10 MΩ
● 0 to 300 ohms	Yes
— Input resistance (0 to 300 ohms)	10 MΩ
● 0 to 600 ohms	Yes
— Input resistance (0 to 600 ohms)	10 MΩ
● 0 to 6000 ohms	No
Thermocouple (TC)	
Temperature compensation	
— parameterizable	Yes
— internal temperature compensation	Yes

© Copyright Siemens

— external temperature compensation with compensations socket	Yes
— for definable comparison point temperature	Yes
Characteristic linearization	
● parameterizable	Yes
— for thermocouples	Type E, J, K, L, N
— for resistance thermometer	Pt100 (standard, climatic range), Ni100 (standard, climatic range)
Cable length	
● shielded, max.	200 m; 50 m at 80 mV and thermocouples
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
● Resolution with overrange (bit including sign), max.	15 bit; Unipolar: 9/12/12/14 bit; bipolar: 9 bit + sign/12 bit + sign/12 bit + sign/14 bit + sign
● Integration time, parameterizable	Yes; 2,5 / 16,67 / 20 / 100 ms
● Basic conversion time (ms)	3 / 17 / 22 / 102 ms
● Interference voltage suppression for interference frequency f1 in Hz	400 / 60 / 50 / 10 Hz
Encoder	
Connection of signal encoders	
● for voltage measurement	Yes
● for current measurement as 2-wire transducer	Yes
● for current measurement as 4-wire transducer	Yes
● for resistance measurement with two-wire connection	Yes
● for resistance measurement with three-wire connection	Yes
● for resistance measurement with four-wire connection	Yes
Errors/accuracies	
Operational error limit in overall temperature range	
● Voltage, relative to input range, (+/-)	1 %; ±1% (80 mV); ±0.6% (250 mV to 1 000 mV); ±0.8% (2.5 V to 10 V)
● Current, relative to input range, (+/-)	0.7 %; From 3.2 to 20 mA
● Resistance, relative to input range, (+/-)	0.7 %; 150, 300, 600 Ohm
● Resistance thermometer, relative to input range, (+/-)	0.7 %; ±0.7 % (Pt100/ Ni100); ±0.8 % (Pt100 climate)
● Thermocouple, relative to input range, (+/-)	1.1 %; Type E, J, K, L, N
Basic error limit (operational limit at 25 °C)	
● Voltage, relative to input range, (+/-)	0.6 %; ±0.4 % (250 mV to 1 000 mV); ±0.6 % (2.5 mV to 10 mV); ±0.7 % (80 mV)
● Current, relative to input range, (+/-)	0.5 %; 3.2 to 20 mA
● Resistance, relative to input range, (+/-)	0.5 %; 150, 300, 600 Ohm
● Resistance thermometer, relative to input range, (+/-)	0.6 %; ±0.5% (Pt100/ Ni100), ±0.6% (Pt100 climate)
● Thermocouple, relative to input range, (+/-)	0.7 %; Type E, N, J, K, L
Interrupts/diagnostics/status information	
Diagnostics function	Yes; Parameterizable
Alarms	
● Diagnostic alarm	Yes; Parameterizable, channels 0 and 2
● Limit value alarm	Yes; Parameterizable
Diagnoses	
● Diagnostic information readable	Yes
Diagnostics indication LED	
● Group error SF (red)	Yes
Potential separation	
Potential separation analog inputs	
● between the channels	No
● between the channels and backplane bus	Yes
● between the channels and the power supply of the electronics	Yes
Isolation	
Isolation tested with	500 V DC

Subject to change without notice
© Copyright Siemens

Dimensions	
Width	40 mm
Height	125 mm
Depth	117 mm
Weights	
Weight, approx.	250 g

last modified: 3/2/2021

Subject to change without notice
© Copyright Siemens

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP