Life Is On | Schneider Electric

6601

Input / Output Expansion Module

For SCADAPack 470 | 474 | 530E | 535E | 570 | 575 Smart RTUs

Product at a glance

Designed to supplement the onboard I/O count of select SCADAPack™ Smart RTUs, the 6601 I/O Expansion Module provides a combination of I/O, including digital and analog inputs and outputs, and counter inputs.

The maximum number of external expansion modules is dependent on the SCADAPack Smart RTU type.

6601

Input / Output Expansion Module

Specifications

General	
Environment	• -40…70 °C (-40…158 °F) operating temperature when the unit is mounted horizontally on a vertical surface • -40…65 °C (-40…149 °F) operating temperature when the unit is mounted in any other position • -40…85 °C (-40…185 °F) storage temperature • 5...95% relative humidity, non-condensing • Pollution Degree 2, Installation Category I, Indoor use
Elevation	3,000 m (9,842 ft.)
Terminations	3.3...0.08 mm^2 (12...28 AWG), solid or stranded
Packaging	Corrosion-resistant and RoHS-compliant clear zinc-plated steel with black enamel paint
Dimensions	150.5 mm wide X 182.3 mm high X 44.7 mm deep (5.9 in. wide X 7.2 in. X 1.8 in. deep)
Mechanical Shock	• IEC 61131-2 • ½ sine, 15 ms, 15 g
Vibration	• IEC 61131-2 • 5...8.4 Hz: Amplitude controlled, 7.0 mm (0.28 in.) peak-to-peak • 8.4...150 Hz: Acceleration controlled, 1.0 g peak
I/O Expansion Limits	Typically 4. Refer to the appropriate SCADAPack Hardware Manual for further details.

Power Supply	
Power requirements at 30 Vdc (from SCADAPack RTU)	1.1 W

Certifications	
Industrial Standards	Requirements specific to the RTU functional characteristics, immunity, robustness, and safety: • IEC/EN 61131-2 • CSA 22.2 No. 61010-1-12 and CSA 22.2 No. 61010-2-201 • UL 61010-1 and UL 61010-2-201
CE Marking Compliance	• For the latest information regarding product compliance with European Directives for CE marking, refer to the EU Declaration of Conformity issued for your product at www.se.com • For the latest information regarding product compliance with RoHS, WEEE directives and REACH regulation, visit the Schneider Electric Check a Product portal at www.reach.schneider-electric.com
Installation in Classified Ex Area	• Hazardous locations Class I, Division 2, groups A, B, C, and D and Class I, Zone 2 according to CSA C22.2 No. 213, CSA C22.2 60079-0, CSA C22.2 60079-15, ANSI/ISA 60079-0, ANSI/ISA 60079-15, ANSI/ISA 12.12.01 • ATEX (European directive 2014/34/EU) in defined atmosphere Zone 2 according to EN 60079-0 and EN 60079-15 • IECEx in defined atmosphere Zone 2 according to IEC 60079-0 and IEC 60079-15
Specific Countries	• Australia and New Zealand: ACMA requirements for RCM marking • United States: FCC Part 15 Subpart B Class A

6601

Input / Output Expansion Module

Specifications – cont'd

Counter Inputs	
Quantity	8
Electrical Characteristics	Shared with digital input channels
Reporting	• 16-bit and 32-bit counters • Deviation • Timestamped events • Polled, unsolicited reporting
Frequency	Up to 8 channels: • DI 1 to 4: 0...1.5 kHz • DI 5 to 8: 0...150 Hz
Digital Inputs	
Quantity	16
Typical Operating Voltage	12...24 Vdc
Turn-on Voltage	Minimum: 9 Vdc
Turn-off Voltage	Maximum: 4 Vdc
Over-voltage Tolerance	36 Vdc sustained over-voltage without foreseeable damage
Input Current	• 0.9…1.2 mA at 12 Vdc • 2.1…2.4 mA at 24 Vdc
Timestamping	1 ms Sequence of Event (SOE)
Isolation	• Isolation is in 2 groups of 8 • Isolation from device logic and chassis • 1000 Vac or 1500 Vdc
Digital Outputs	
Quantity	8
Type	• 2 Form C single-pole double-throw (SPDT) relays available to the application • Separate Normally Open/Normally Closed/Common • 6 Form A relays available to the application • Normally Open, one Common
Isolation	500 Vac minimum to device logic
Maximum Switching Voltage	30 Vdc or 25 Vac
Maximum Switching Load	• 60 W or 50 VA per relay • 2 A per relay • 2 A per common on digital outputs 1-2 • 12 A per common on digital outputs 3-8
Status and reporting	Individual relay pole feedback to software Output state poll
Temperature de-rating	Mounted horizontally on a vertical surface: • 2 A maximum per relay at 60 °C (140 °F), de-rate by 0.1 A per 1 °C to 1 A maximum per relay at a maximum ambient temperature of 70 °C (158 °F) Mounted in any other position: • 2 A maximum per relay at 60 °C (140 °F), de-rate by 0.1 A per 1 °C to 1.5 A maximum per relay at a maximum ambient temperature of 65 °C (149 °F)
Controls	• Direct Operate • Select Before Operate • Trip/Close • Latch • Pulse

6601

Input / Output Expansion Module

Specifications – cont'd

Analog Inputs	
Quantity	6
Type	Uni-polar, differential, voltage or current
Resolution (filtered)	• 24-bit conversion yields an effective 19 bits of resolution during filtered conversions • 10 µV on the 5 Vdc range • 40 nA resolution on the 20 mA range
Resolution (fast)	• 24-bit conversion yields an effective 13 bits of resolution during unfiltered conversions. • 0.6 mV resolution on the 5 Vdc range • 2.4 µA resolution on the 20 mA range
Accuracy	• ±0.1% of full scale at 25 ºC (77 ºF) • ±0.2% over-temperature range
Isolation	250 Vac isolation between channels and from device logic and chassis
Input resistance	• 250 Ω in current configurations • 800 kΩ in voltage configurations
Ranges	• Input Type: 4...20 mA, 0...20 mA, 1...5 Vdc, or 0...5 Vdc • Under-range: 4...20 mA measures to 0 mA • Individual inputs can be configured for current or voltage operation using DIP switches. • Calibration in voltage mode 1...5 Vdc is available as an option.
Sampling Rate	• Filtered: 500 ms per 6 channels • Fast: 30 ms per 6 channels
Common Mode Rejection	80 dB
Normal Mode Rejection	• Filtered: 86 dB (50/60 Hz) • Fast: Not applicable
Reporting	• Deviation • 8 alert limits • Under- and over-range events • Quality flags • Integer/floating point • Timestamped events • Polled, unsolicited reporting on deviation and per alert limit
Timestamping	30 ms Sequence of Event (SOE)
I/O Cable Length	Maximum: 30 m (98.4 ft)

6601

Input / Output Expansion Module

Specifications – cont'd

Analog Outputs	
Quantity	2 with optional analog outputs
Type	Uni-polar
Resolution	12-bit over 0...20 mA range
Accuracy	• ±0.15% at 25 °C (77 °F) • ±0.35% of full scale over-temperature range
Response Time	Less than 10 µs for 10% to 90% signal change
Power Supply (External)	12…30 Vdc
Power Supply Cable Length	Maximum: 30 m (98.4 ft)
Power (Current) Requirements	10 mA plus up to 20 mA per output
Isolation	• Transformer • 500 Vdc maximum to device logic and chassis
Range	• 0...20 mA • 4…20 mA • Voltage output may be accomplished with external precision resistor
Status and Reporting	• Power missing • Open loop detected • Values out of range • ADC reference check
Controls	• Direct Operate • Select Before Operate
Load range	• 12 Vdc: 0…475 Ω • 24 Vdc: 0…1075 Ω • 30 Vdc: 250…1375 Ω

Model Code

6601 (For use with SCADAPack 470 | 474 | 530E | 535E | 570 | 575 Smart RTUs only)

Part No.	**Complete the desired part number with an S, X, or U suffix depending on certification required.**	
S	EMC and radio frequency	FCC 47 CFR Part 15, Subpart B ICES-003 CE and RCM markings General safety UL/CSA 61010-2-201
X	Adds: IECEx/ATEX: Ex nA nC IIC T4 Gc -40 °C ≤ Ta ≤ +70 °C II 3 G	
U	Adds: cCSAus Non-Incendive Electrical Equipment for use in Class I, Division 2, Groups A, B, C and D, T4, -40 °C ≤ Ta ≤ +70 °C , Class I Zone 2, T4	
TBUX297583	Model 6601-20mA, 16 D/I 12...24 Vdc, 8 Dry Contact Relay O/P, 6 config. A/I (0/4…20 mA)	
TBUX297584	Model 6601-5V, 16 D/I 12...24 Vdc, 8 Dry Contact Relay O/P, 6 config. A/I (0/1…5 Vdc)	
TBUX297585	Model 6601-20mA, 16 D/I 12...24 Vdc, 8 Dry Contact Relay O/P, 6 config. A/I (0/4…20 mA), 2 A/O (external DC supply)	
TBUX297586	Model 6601-5V, 16 D/I 12...24 Vdc, 8 Dry Contact Relay O/P, 6 config. A/I (0/1…5 Vdc), 2 A/O (external DC supply)	

6601

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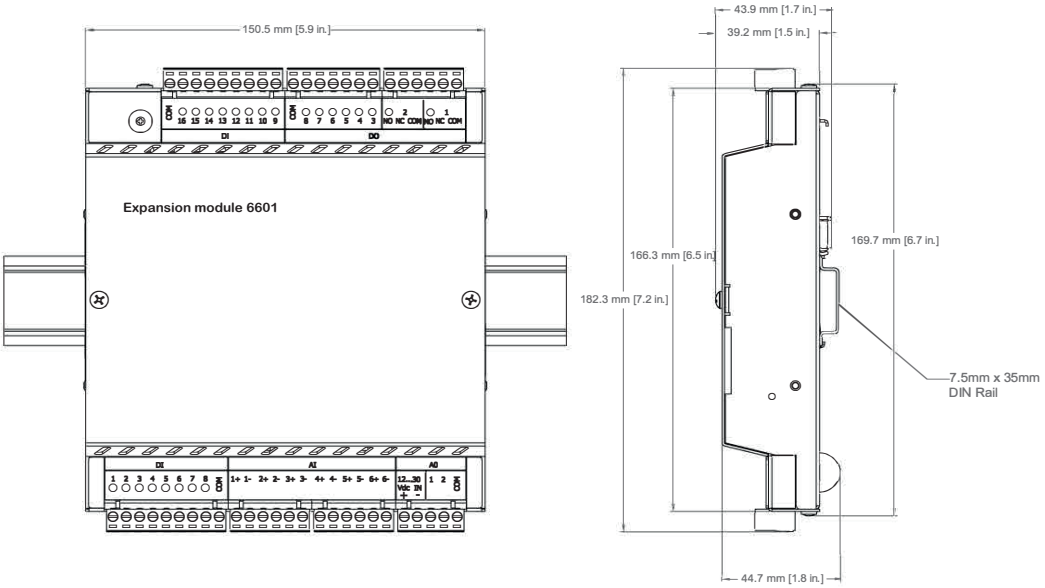
Dimensions



This product is RoHS-compliant.

Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.se.com.

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