

Specifications

SmartGuard 600 Controllers - 1752-L24BBB, 1752-L24BBBE

Attribute	1752-L24BBB	1752-L24BBBE
Dimensions (HxWxD), approx.	99.0 ⁽⁴⁾ x 99.4 x 131.4 mm ⁽⁵⁾ (3.90 ⁽⁴⁾ x 3.91 x 5.18 ⁽⁵⁾ in.)	99.0 ⁽⁴⁾ x 113.0 x 131.4 ⁽⁵⁾ mm (3.90 ⁽⁴⁾ x 4.48 x 5.18 ⁽⁵⁾ in.)
Weight, approx.	460 g (1.23 lb)	575 g (1.54 lb)
DeviceNet current load, max	15 mA @ 24V DC	
Supply voltage ⁽¹⁾	20.4...26.4V DC (24V DC, -15...10%)	
Inrush current - unit power supply	4.8 A peak for 600 μ s @ V0/G0	
Inrush current - safety input power supply	2.6 A peak for 3 ms @ V1/G1	
DeviceNet voltage range	11...25V DC	
Current consumption (V0 - internal logic circuit)	230 mA @ 24V DC	280 mA @ 24V DC
Overload protection	Shut down of the affected output with cyclic reconnecting	
Isolation voltage	50V, Functional insulation type Tested at 600V AC for 60 s, between all groups	
Wire type	Copper	
Wiring category ⁽²⁾	2 - on power, signal, and communication ports	2 - on power, 1 - on signal, 1 - communication ports
Wire size	For power supply and I/O, use 0.2...2.5 mm ² (12...24 AWG) solid wire, or 0.34...1.5 mm ² (16...22 AWG) standard flexible wire. Before connecting, prepare standard wires by attaching ferrules with plastic insulation collars (DIN 46228-4 standard compatible) For Ethernet connections: RJ45 connector according to IEC 60603-7, 2 or 4 pair Category 5e minimum cable according to TIA 569-B.1 or Category 5 cable according to ISO/IEC 24701	
I/O terminal screw torque	0.56...0.79 N•m (5...7 lb•in)	
North American temperature code	T4A	
Input type	Current sinking	
Voltage, on-state input, min	11V DC	
Voltage, off-state input, max	5V DC	
Current, off-state input, max	1 mA	
Input current	4.5 mA	
Input impedance	2.6 k Ω	

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Test output type	Current sourcing	
Pulse test output current ⁽³⁾	0.7 A	
Test output surge current	0.7 A	
Pulse test off-state voltage, max	1.2V	
Pulse test output leakage current, max	0.1 mA	
Muting lamp output current (T3) • More than 25 mA • Less than 5 mA	• Normal operation (to avoid fault when used as a muting lamp output) • Fault (a fault indication is generated when used as a muting lamp output)	
Output type	Current sourcing	
Output current	0.5 A	
Output surge current	0.5 A	
Voltage, off-state output max	1.2V	
Leakage current, off-state output, max	0.1 mA	
Heat dissipation	9.3 W under max load	
Ethernet Communication		
CIP connections	Not applicable	2
Auto negotiation	Not applicable	Supported
Data rate	Not applicable	10/100 Mbps
Duplex	Not applicable	Full/half
Allowable unit communication bandwidth	Not applicable	3000 pps ⁽⁶⁾
Explicit message communication	Not applicable	502 Bytes ⁽⁷⁾

(1) V0/G0 for internal logic circuit; V1/G1 for external input devices and test outputs; V2/G2 for external output devices.

(2) Use this Conductor Category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

(3) T0...T3 total current at the same time: 1.4 A.

(4) Height includes terminal connectors.

(5) Depth includes DeviceNet connector.

(6) PPS is packets per second. It indicates the number of send or receive packets that can be processed per second.

(7) The maximum message length for class 3 connection and UCMM connection.

Environmental Specifications

Attribute	1752-L24BBB	1752-L24BBBE
Temperature, storage	IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock): -40...70 °C (-40...158 °F)	
Temperature, operating	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): -10...55 °C (14...131 °F) (surrounding air temperature)	
Relative humidity	IEC 60068-2-30 (Test Db, Unpackaged Nonoperating Damp Heat): 10...95% noncondensing	
Vibration	IEC 60068-2-6 (Test Fc, Operating): 0.35 mm @ 10...57 Hz 5 g @ 57...150 Hz	IEC 60068-2-6 (Test Fc, Operating): 5 g @ 10...500 Hz
Shock, operating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 15 g	
Shock, nonoperating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30 g	
Enclosure type rating	Meets IP20	
Emissions	CISPR 11: Group 1, Class A	
ESD immunity	IEC 61000-4-2: • 4 kV contact discharges • 8 kV air discharges	IEC 61000-4-2: • 6 kV contact discharges • 8 kV air discharges
Radiated RF immunity	IEC 61000-4-3: • 10 V/m with 1 kHz sine-wave 80% AM from 80...1000 MHz • 10 V/m with 1 kHz sine-wave 80% AM from 1.4...2.0 GHz • 10 V/m with 200 Hz 50% Pulse 100% AM at 900 MHz • 10 V/m with 200 Hz 50% Pulse 100% AM at 1200 MHz • 3 V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz	IEC 61000-4-3: • 10 V/m with 1 kHz sine-wave 80% AM from 80...1000 MHz • 10 V/m with 1 kHz sine-wave 80% AM from 1.4...2.0 GHz • 20 V/m with 200 Hz 50% Pulse 100% AM at 800, 900, 1200 MHz • 3 V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz

Environmental Specifications

Attribute	1752-L24BBB	1752-L24BBBE
EFT/B immunity	IEC 61000-4-4: • ± 2 kV @ 5 kHz on power ports • ± 2 kV @ 5 kHz on signal ports • ± 2 kV @ 5 kHz on communication ports	IEC 61000-4-4: • ± 2 kV @ 5 kHz on power ports • ± 1 kV @ 5 kHz on signal ports • ± 1 kV @ 5 kHz on communication ports
Surge transient immunity	IEC 61000-4-5: • ± 1 kV line-line (DM) and ± 2 kV line-earth (CM) on power ports • ± 1 kV line-line (DM) and ± 2 kV line-earth (CM) on signal ports • ± 1 kV line-earth (CM) on communication ports	IEC 61000-4-5: • ± 500 V line-line (DM) and ± 1 kV line-earth (CM) on power ports • ± 1 kV line-earth (CM) on signal ports • ± 1 kV line-earth (CM) on communication ports
Conducted RF immunity	IEC 61000-4-6: • 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz	

Certifications

Certification ⁽¹⁾ (when product is marked)	Value
c-UL-us	UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for US and Canada. See UL File E194810.
CE	European Union 2004/108/EEC EMC Directive, compliant with: • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
TÜV	TÜV Certified for Functional Safety Functional Safety: SIL 1 to 3, according to IEC 61508; Performance Level PL(e) according to ISO 13849-1, Category 1 to 4, according to EN954-1; NFPA79; when used as described in the SmartGuard Controllers Safety Reference Manual, publication 1752-RM001 .
UL	UL Certified for Functional Safety. See UL File E256621.