MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

ALLEN-BRADLEY

1756-PA75

CONTROLLOGIX AC POWER SUPPLY

Used with the applicable Allen-Bradley ControlLogix configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Rockwell Automation manufacturer documentation

ControlLogix 5580 Standard and Conformal Coated Controllers

Features - ControlLogix 5580 Standard and Conformal Coated Controllers

Feature	1756-L81E, 1756-L81EK	1756-L82E, 1756-L82EK	1756-L83E, 1756-L83EK	1756-L84E, 1756-L84EK	1756-L85E, 1756-L85EK
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks 1000 programs/task				
Built-in communication ports(10)	1-port USB(1) Embedded Ethernet port				
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only				
Ethernet performance	10/100/1000 Mbps				
I/O Capacity (Class 0/1) - packets/second(2)(3)	• 128,000 without CIP Security™ • 40,000 with integrity • 20,000 with integrity and confidentiality				
Message Rate Capacity HMI/MSG (Class 3) - messages/second(2)(3)(4)					
front port	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality				
backplane(5)	• 4000 with multiple 1756-EN4TR modules				
backplane in Logix redundancy(5)	• 2000				
Communication options	• EtherNet/IP™ • ControlNet® • DeviceNet® • Data Highway Plus™ • Remote I/O • SERCOS(6) • Third-party process and device networks				
EtherNet/IP nodes supported max(7)	60 nodes(9) 100 nodes(10)	80 nodes(9) 175 nodes(10)	100 nodes(8) 250 nodes(10)	150 nodes(9) 250 nodes(10)	300 nodes(11)
OPC UA nodes supported max(12)(13)	–	600 nodes	1200 nodes	10,000 nodes	15,000 nodes
Network connections per network module located in the local chassis	• ControlLogix 5580 Controllers front EtherNet/IP port. See 'EtherNet/IP nodes supported, max' in this table. • 1000 I/O; 528 EtherNet/IP; 512 TCP (1756-EN4TR or variant rated for harsh environments) • 256 EtherNet/IP; 128 TCP (1756-EN2x or variant rated for harsh environments) • 128 EtherNet/IP; 64 TCP (1756-ENBT or variant rated for harsh environments) • 100 ControlNet (1756-CN2/A or variant rated for harsh environments) • 40 ControlNet (1756-CNB/D, 1756-CNB/E or variant rated for harsh environments) • 128 ControlNet (1756-CN2/B or variant rated for harsh environments)				
Integrated motion	• SERCOS interface beginning with Studio 5000 Logix Designer® application version 31.00.01 or later • Analog options (encoder input, LDT input, SSI input) beginning with Studio 5000 Logix Designer application version 31.00.01 or later • Integrated Motion on the EtherNet/IP network				
Controller redundancy	Full support with Studio 5000 Logix Designer application version 33.00.02 or later(14)				
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)				

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number.
(3) For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.
(4) Maximums assume that the processor is the target, not the originator.
(5) Controller performance not impacted by CIP Security.
(6) With Studio 5000 Logix Designer® application version 31.00.01 or later.
(7) An EtherNet/IP node is a device that you add directly to the I/O configuration, and counts toward the node limits of the controller. For more information on EtherNet/IP nodes, see the ControlLogix 5580 Controllers User Manual, publication 1756-UM543.
(8) With Studio 5000 Logix Designer application versions 28.00.01 and 29.00.02.
(9) With Studio 5000 Logix Designer application version 29.00.02.
(10) With Studio 5000 Logix Designer application version 30.00.00 or later.
(11) Additional EtherNet/IP nodes may be possible depending on remaining controller resources.
(12) An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications. For more information on OPC UA nodes, see the OPC UA in 5580 and 5380 Controllers User Manual, publication 1756-UM023.
(13) With Studio 5000 Logix Designer application version 36.00.00 or later.
(14) When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet, ControlNet, RIO, DH+™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.

ControlLogix 5580 NSE Controllers

Features - ControlLogix 5580 NSE Controllers

Feature	1756-L81E-NSE	1756-L82E-NSE	1756-L83E-NSE	1756-L84E-NSE	1756-L85E-NSE
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks 1000 programs/task				
Built-in communication ports[1]	1-port USB[2] Embedded Ethernet port				
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only				
Ethernet performance	10/100/1000 Mbps				
I/O Capacity (Class 0/1) - packets/second [3][4]	• 128,000 without CIP Security • 40,000 with integrity • 20,000 with integrity and confidentiality				
Message Rate Capacity HMI/MSG (Class 3) - messages/second [3][4][5]					
front port	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality				
backplane[6]	• 4000 with multiple 1756-EN4TR modules				
backplane in Logix redundancy[6]	• 2000				
Communication options	• EtherNet/IP • ControlNet • DeviceNet • Data Highway Plus • Remote I/O • SERCOS[7] • Third-party process and device networks				
EtherNet/IP nodes supported max[8]	100 nodes	175 nodes	250 nodes	250 nodes	300 nodes[9]
OPC UA nodes supported max[10][11]	–	600 nodes	1200 nodes	10,000 nodes	15,000 nodes
Network connections per network module located in the local chassis	• ControlLogix 5580 Controllers front EtherNet/IP port. See 'EtherNet/IP nodes supported, max' in this table. • 1000 I/O; 528 EtherNet/IP; 512 TCP (1756-EN4TR or variant rated for harsh environments) • 256 EtherNet/IP; 128 TCP (1756-EN2*x* or variant rated for harsh environments) • 128 EtherNet/IP; 64 TCP (1756-ENBT or variant rated for harsh environments) • 100 ControlNet (1756-CN2/A or variant rated for harsh environments) • 40 ControlNet (1756-CNB/D, 1756-CNB/E or variant rated for harsh environments) • 128 ControlNet (1756-CN2/B or variant rated for harsh environments)				
Integrated motion	• SERCOS interface beginning with Studio 5000 Logix Designer application version 31.00.01 or later • Analog options (encoder input, LDT input, SSI input) beginning with Studio 5000 Logix Designer application version 31.00.01 or later • Integrated Motion on the EtherNet/IP network				
Controller redundancy	Full support with Studio 5000 Logix Designer application version 33.00.02 or later[1]				
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)				

(1) When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet, ControlNet, RIO, DH+™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.
(2) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(3) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number.
(4) For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.
(5) Maximums assume that the processor is the target, not the originator.
(6) Controller performance not impacted by CIP Security.
(7) With Studio 5000 Logix Designer® application version 31.00.01 or later.
(8) A node is an EtherNet/IP device that you add directly to the I/O configuration, and counts toward the node limits of the controller. For more information on EtherNet/IP nodes, see the ControlLogix 5580 Controllers User Manual, publication 1756-UM543.
(9) Additional EtherNet/IP nodes may be possible depending on remaining controller resources.
(10) An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications. For more information on OPC UA nodes, see the OPC UA in 5580 and 5380 Controllers User Manual, publication 1756-UM023.
(11) With Studio 5000 Logix Designer application version 36.00.00 or later.

ControlLogix 5580 Process Controllers

The ControlLogix 5580 process controllers are an extension of the Logix 5000 controller family that focuses on plant-wide process control. These process controllers come configured with a default process tasking model and dedicated PlantPAx® process instructions optimized for process applications and that improve design and deployment efforts.

The ControlLogix 5580 process controllers provide extended protection in corrosive gas environments and can be used in temperature extremes from -25...+70 °C (-13...+158 °F) when deployed as part of a Logix-XT system.

Features - ControlLogix 5580 Process Controllers

Feature	1756-L81EP	1756-L83EP	1756-L85EP
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks, 1000 programs/task		
Built-in communication ports(1)	1 port USB(2) Embedded Ethernet port		
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only		
Ethernet performance	10/100/1000 Mbps		
I/O Capacity (Class 0/1) - packets/second(3)(4)	• 128,000 without CIP Security • 40,000 with integrity • 20,000 with integrity and confidentiality		
Message Rate Capacity HMI/MSG (Class 3) - messages/second(3)(4)(5)			
front port	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality		
backplane(6)	• 4000 with multiple 1756-EN4TR modules		
backplane in Logix redundancy(6)	• 2000		
Communication options	• EtherNet/IP • ControlNet • DeviceNet • Data Highway Plus • Remote I/O • SERCOS • Third-party process and device networks		
EtherNet/IP nodes supported, max(7)	100 nodes	250 nodes	300 nodes(8)
OPC UA nodes supported max(9)(10)	–	1200 nodes	15,000 nodes
Network connections per network module located in the local chassis	• ControlLogix 5580 Controllers front EtherNet/IP port. See 'EtherNet/IP nodes supported, max' in this table. • 1000 I/O; 528 EtherNet/IP; 512 TCP (1756-EN4TR or variant rated for harsh environments) • 256 EtherNet/IP; 128 TCP (1756-EN2*x* or variant rated for harsh environments) • 128 EtherNet/IP; 64 TCP (1756-ENBT or variant rated for harsh environments) • 100 ControlNet (1756-CN2/A or variant rated for harsh environments) • 40 ControlNet (1756-CNB/D, 1756-CNB/E or variant rated for harsh environments) • 128 ControlNet (1756-CN2/B or variant rated for harsh environments)		
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP network		
Controller redundancy	Full support with Studio 5000 Logix Designer application version 33.00.00 or later.(1)		
Programming languages	• Relay Ladder Logic (RLL) • Structured Text • Function Block Diagram • Sequential Function Chart (SFC)		

(1) When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet, ControlNet, RIO, DH+ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.
(2) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(3) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number.
(4) For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.
(5) Maximums assume that the processor is the target, not the originator.
(6) Controller performance not impacted by CIP Security.
(7) A node is an EtherNet/IP device that you add directly to the I/O configuration, and counts toward the node limits of the controller. For more information on EtherNet/IP nodes, see the ControlLogix 5580 Controllers User Manual, publication 1756-UM543.
(8) Additional EtherNet/IP nodes may be possible depending on remaining controller resources.
(9) An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications. For more information on OPC UA nodes, see the OPC UA in 5580 and 5380 Controllers User Manual, publication 1756-UM023.
(10) With Studio 5000 Logix Designer application version 36.00.00 or later.