

Allen-Bradley 1756 Series Service Manual

1756-HYD02

1. Description

Mfr. Part Number:

2. Specifications

Specification	Value
Manufacturer	Rockwell Automation
Module	Type Hydraulic Servo Module
Series	1756 ControlLogix
Part	Number/Catalog No. 1756-HYD02
Brand	Allen-Bradley
Servo	Loop Proportional, integral and differential (PID) with Feed- Forwards and Directional scaling
Gain	Resolution 32- bit floating point
Absolute	Position range 230,000 LDT counts
Rate	500Hz to 4kHz (Selectable)
LDT	Input PWM, Start/Stop rising or falling edge
Registration	input Optically isolated, current sinking input
Analog	output $\pm 10V$ dc
Analog	output resolution 16 bits
Discrete	outputs Solid-state isolated relay contacts
Discrete	output operating voltage 24VDC, Nominal.
Axes	per Module 2
Axes	per Controller 32
Backplane	Current (5Volts) 700 milliamps
Backplane	Current (24Volts) 2.5 milliamps
Power	Dissipation 5.5 Watts
Removeable	Terminal Blocks 1756-TBCH, 1756-TBS6H
Count	Range 0-16, 214, 777
Location	Chassis (Any Slot)
Slot	Width 1
UPC	10612598300515 Description
The	Allen-Bradley 1756-HYD02 is a module that connects to a 1756 Contr

3. Product Information

Mfr. Part Number:

1756-HYD02

Manufacturer: Allen-Bradley / Rockwell Automation

Description: Allen-Bradley 1756-HYD02 ControlLogix Hydraulic Servo Module, 2-Channel LDT

Full Description: Allen-Bradley 1756-HYD02 ControlLogix Hydraulic Servo Module, 2 Channel LDT (36 Pin) The Allen-Bradley 1756-HYD02 is a ControlLogix Hydraulic Servo Module.

This module has two (2) axes and supports Proportional, Integral and Differential (PID) with feed-forwards and directional scaling servo loop with gain resolution of 32-bit floating point. It has an absolute position range of 230,000 LDT counts with selectable rate of 500 Hertz to 4 kiloHertz. Technical specifications for 1756-HYD02

Manufacturer Rockwell Automation

Module Type Hydraulic Servo Module

Series 1756 ControlLogix

Part Number/Catalog No. 1756-HYD02

Brand Allen-Bradley

Servo Loop Proportional, integral and differential (PID) with Feed- Forwards and Directional scaling

Gain Resolution 32- bit floating point

Absolute Position range 230,000 LDT counts

Rate 500Hz to 4kHz (Selectable)

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Analog output $\pm 10V$ dc

Analog output resolution 16 bits

Discrete outputs Solid-state isolated relay contacts

Discrete output operating voltage 24VDC, Nominal.

Axes per Module 2

Axes per Controller 32

Backplane Current (5Volts) 700 milliamps

Backplane Current (24Volts) 2.5 milliamps

Power Dissipation 5.5 Watts

Removeable Terminal Blocks 1756-TBCH, 1756-TBS6H

Count Range 0-16, 214, 777

Location Chassis (Any Slot)

Slot Width 1

UPC 10612598300515 Description

The Allen-Bradley 1756-HYD02 is a module that connects to a 1756 ControlLogix controller and is normally used for the accurate control and positioning of a hydraulic cylinder. It can be wired to a linear displacement transducer, or LDT, for feedback and a proportional or servo valve for control of the hydraulic axis, with one module able to control up to two axes. The LDT will give an analog command reference for the valve. This is to make sure that the actuator or cylinder follows the profile. Once it receives feedback, the 1756-HYD02 module will then close the high-speed position loop with the help of a hydraulic system connected to it. It will then produce a $\pm 10V$ analog output velocity command. The servo loop type is proportional, integral, and differential (PID) with feed-forwards and directional scaling. The 1756-HYD02 has a gain resolution of 32-bit floating points and an absolute position range of 230,000 LDT counts. It also has a selectable rate of 500 hertz to 4 kilohertz. The current draw at 5.1 Volts DC is 700 milliamps and 2.5 milliamps for 24 Volts DC. Thermal dissipation is at 18.77 BTU/hour and isolation voltage is 30 Volts continuous, user-to-system. The 1756-HYD02 can be installed in any slot of the ControlLogix chassis. To install, you simply have to slide it into an available slot until it clicks into place. However, it is recommended to key the Removable Terminal Block, or RTB, to prevent accidentally connecting the wrong RTB to a module. Make sure to use a unique keying pattern for every slot. For this 1756-HYD02 module, you can either use a cage clamp or a spring clamp.

The 1756-HYD02 is a ControlLogix Hydraulic Servo module by Allen-Bradley and Rockwell Automation. This hardware it typically used for accurate positioning and control of a hydraulic cylinder. It can be wired to a linear displacement transducer (LDT) for feedback and a proportional or servo valve for control of a hydraulic axis and connects to a hydraulic system to close a high-speed position loop. Specifications for this hardware include 2 axes maximum for available number of axes, proportional, integral, and differential (PID) with feed-forwards and directional scaling for servo loop type, and 32-bit floating point for gain resolution. This hardware also has an absolute position range of 230,000 LDT counts and a servo loop rate of 500 Hertz to 4 kHz (selectable).

The module location for this 1756-HYD02 is the 1756 ControlLogix chassis, it uses electronic module keying, and has a power dissipation of 5.5 Watts maximum. Additional specifications for this hardware include a thermal dissipation of 18.77 British Thermal Units (BTU) per hour, a backplane current of 5.1 Volts DC at 700 milliamperes and 24 Volts DC at 2.5 milliamperes, as well as an isolation voltage of 30 Volts continuous. Environmental specifications include an operating temperature to be kept between 0 and 60 degrees Celsius (32 to 140 degrees Fahrenheit), a storage temperature between -40 and 85 degrees Celsius (-40 to 185 degrees Fahrenheit), and a relative humidity between 5 and 95% (non-condensing). Vibration is compliant with IEC 60068-2-6 and has a rating of 2g at 10-500 Hertz, shock is compliant with IEC 60068-2-27 and is 30g (operating) and 50g (non-operating), and emissions are compliant with CISPR 11: Group 1, Class A.

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