

P15

Light Weight Pan & Tilt Positioner – Half Duplex

OPERATION AND MAINTENANCE MANUAL



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WARRANTY

ROS, Inc. (hereinafter called "**ROS**") warrants its products as stated below subject to the conditions specified.

ROS warrants its products, when operated under normal conditions, to be free from defects in material or workmanship for a period of two years from the date of purchase provided that inspection by **ROS** discloses that such defects developed under normal and proper use. **ROS** products repaired or replaced pursuant to this warranty shall be warranted for the unexpired portion of the warranty applying to the original product. The liability of **ROS** under this warranty shall exist subject to the following conditions:

- (a) Purchaser properly notifies ROS of such defects and the defective product is returned to ROS, transportation charges paid by Purchaser.
- (b) ROS shall be released from all obligations under its warranty in the event repairs or modifications are made by persons not authorized by ROS.
- (c) Representations and warranties made by any person, including distributors and representatives of ROS, which are inconsistent or conflict with the terms of this warranty, shall not be binding upon ROS unless reduced to writing and approved by an officer of ROS. ROS shall in no event be liable for other direct, special, incidental, consequential, indirect or penal damages.
- (d) The laws of the State of California shall govern this warranty.

In the event the defect is determined to be within the terms of this warranty then **ROS** agrees to repair and/or replace (at **ROS**' discretion) the product or defective portion at no charge to the Purchaser. This warranty does not apply to expendable items or to normal wear-and-tear, and is conditional upon performance of normal preventative maintenance procedures.

Our commitment to quality and customer service directs us to constantly strive to improve our products. The materials and specifications presented in our manuals and data sheets are correct and accurate to the best of our knowledge, and are presented in good faith. However, the information is not guaranteed and is subject to change without notice.

LIMITATIONS OF REMEDIES

Purchaser assumes all risk and liability for results obtained in any installation, operation, or use of the product. Purchaser's sole remedy for any breach of warranty by vendor shall be limited to the "express remedies" set forth above. Otherwise, in no event shall vendor, its agents, or employees be liable to the original purchaser or any third party for any consequential or incidental damages or expenses of any nature arising directly out of or in connection with the use of vendor projects, even if vendor has been advised of the possibility of such damages or expenses. In any event, unless otherwise contrary to state law, vendor liability under this limited warranty shall not exceed the purchase price of the product.

CUSTOMER ASSISTANCE

If you have any questions or problems that are not covered by this, please contact our representative in your area. You may also contact us directly by phone, FAX or e-mail.

TEL: (001) 858-565-8500

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Sales: sales@rosys.com

Web Site: www.rosys.com

Technical Support: support@rosys.com

CHANGE RECORD

<u>REV</u>	<u>DESCRIPTION</u>	<u>DATE</u>
A	PRODUCTION RELEASE (EC-02652)	29SEP16
B	SEE EC-02667	19OCT16
C	SEE EC-03012	20MAR19

1 WARNINGS



WARNING: Disconnect the P15 from power source prior to servicing. Failure to do so may cause property damage, personal injury and/or death.



WARNING: Disconnect cables from power source prior to connecting to the P15. Failure to do so may result in damage to the unit.



WARNING: Dropping the P15 could result in personal injury and/or damage to the unit.



WARNING: Proper care and handling of the P15 and associated cables must be observed. Failure to do so may result in connector damage and/or water infiltration.

2 PRODUCT SPECIFICATIONS

Table 1. P15 Product Specifications

Mechanical	
Housing Material	Hard Anodized Aluminum
Mounting	4X (Pan) & 2X (Tilt) .266in Dia. Holes
Weight in Air	6.6 lb (3.0 kg) 7.7 lb (3.5 Kg) PBOF*
Weight in Water	3.1 lb (1.4 kg) 4.2 lb (1.9 Kg) PBOF
Size	8.2in x 7.1in x 3.8in
Electrical	
Voltage	20-28 VDC
Current	2A max
Communication	RS-485 (half duplex)
Environmental	
Depth Rating	70 MSW (230 ft) 6000 MSW (20,000 ft) PBOF
Min/Max Operating Temperature (in water)	-10°C to 50°C
Storage Temperature (in air)	-20°C to 60°C
Performance	
Payload	15 lb (6.8 kg)
Torque	10 ft-lb (13.5 N-m)
Accuracy	±0.3°
Resolution	0.01°
Scan Range	0 - 360° (both axes)
Rotation Speed	20°/s (both axes)

*PBOF = Pressure Balanced Oil Filled

3 INSTALLATION

Figures 1 and 2 provide overall dimensions and mounting features for the P15 (all dimensions are in inches).

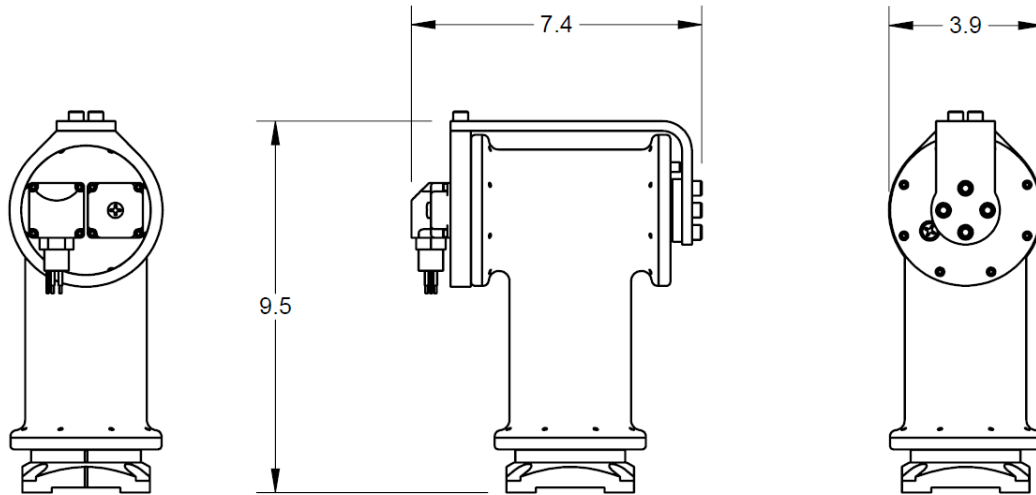


Figure 1. P15 Overall Dimensions

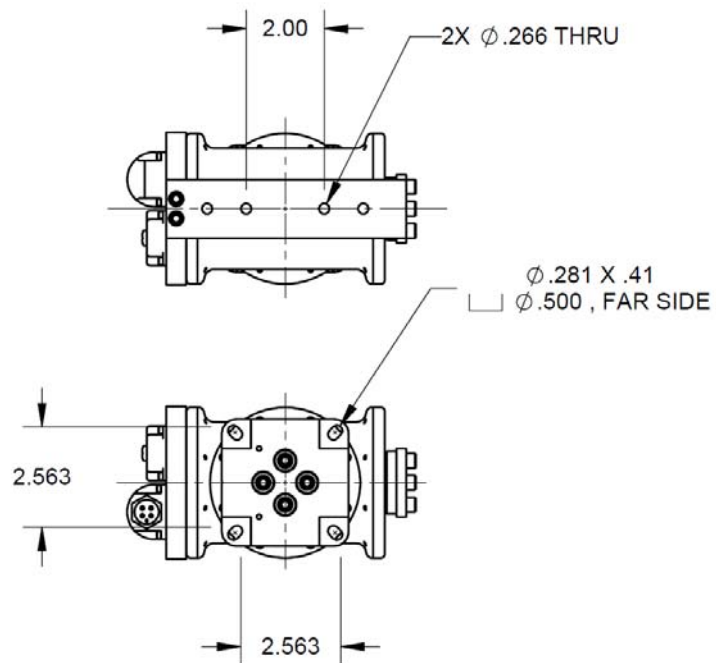
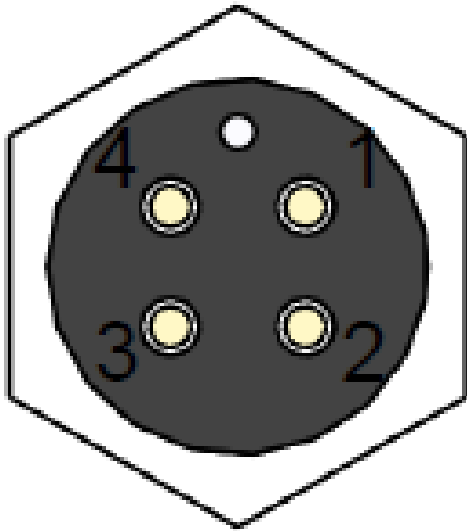


Figure 2. P15 Mounting Points

Figure 3 provides the pin-out. Note: that Figure 3 shows the standard pin-out for the P15. Customer specified pin-outs may differ.



PIN 1: +24VDC RETURN

PIN 2: +24VDC

PIN 3: RS-485 Tx/Rx+

PIN 4: RS-485 Tx/Rx-

PIN 5: COMMUNICATIONS RETURN (OPTIONAL)

Figure 3. P15 Standard Pinouts

4 OPERATION

The P15 is operated by issuing sequential commands through a serial interface.

See Refs. 3 for command sets and operating examples.

5 MAINTENANCE

The P15 is intended to be maintenance free. Seals do not require periodic replacement. Lubricant is applied on the external connectors and o-rings at the factory.

Although the P15 is constructed of corrosion resistant materials, we recommend careful handling procedures be used to prevent deep scratches or dents. Improper handling can damage the anodize coating and create localized corrosion.

In the event the P15 stops working, please contact ROS customer service. For troubleshooting guidelines see section 6.

6 TROUBLESHOOTING

This section provides information on trouble shooting the P15.

Note: ROS does not recommend servicing the P15 in the field, doing so may void warranty. If you experience a failure or undesirable condition, please contact ROS for return authorization.

The information presented in this section is designed to provide a guide for isolating the source of any problems that may be observed during operation.

Failure modes, causes, and corrective action are listed in Table 2. Trouble Shooting.

Prior to performing any fault isolation procedure, the system should be inspected for signs of visible damage. All connectors should be inspected to assure that pins are in good condition. Damage may result in faulty connection and/or liquid infiltration.

Table 2. Trouble Shooting

Problem	Typical Cause	Corrective Action
Unit does not respond to commands	Power not supplied	Disconnect the P15 system from the mains. Test mains power. Reconnect the P15 as appropriate.
	Cable malfunction	Check or replace cables
	Seal failure	Return to ROS for repair
	Connector failure	Return to ROS for repair
	Driver board failure	Return to ROS for repair

7 REFERENCE DOCUMENTS

	Document No.	Description
1.	10-00234	APPLICATION NOTE, INTERCONNECTING RS-485 COMPONENTS
2.	21-30022	RS-485 COMMUNICATION PROTOCOL
3.	21-30428	FIRMWARE COMMAND SET - P15 HDX RS485 POSITIONER