

HydroLynx Systems, Inc.

**Model 1522RMY
Barometric Pressure Sensor**

Instruction Manual



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Receiving and Unpacking

Carefully unpack all components and compare to the packing list. Notify HydroLynx Systems immediately concerning any discrepancy. Inspect equipment to detect any damage that may have occurred during shipment. In the event of damage, any claim for loss must be filed immediately with the carrier by the consignee. If the equipment was shipped via Parcel Post or UPS, contact HydroLynx Systems for instructions.

Returns

If equipment is to be returned to the factory for any reason, call HydroLynx between 8:00 a.m. and 4:00 p.m. Pacific Time to request a Return Authorization Number (RA#). Include with the returned equipment a description of the problem and the name, address, and daytime phone number of the sender. Carefully pack the equipment to prevent damage during the return shipment. Call HydroLynx for packing instructions in the case of delicate or sensitive items. If packing facilities are not available, take the equipment to the nearest Post Office, UPS, or other freight service and obtain assistance with packaging. Please write the RA# on the outside of the box.

Warranty

HydroLynx Systems warrants that its products are free from defects in material and workmanship under normal use and service for a period of one year from the date of shipment from the factory. HydroLynx Systems' obligations under this warranty are limited to, at HydroLynx's option: (i) replacing; or (ii) repairing; any product determined to be defective. In no case shall HydroLynx Systems' liability exceed product's original purchase price. This warranty does not apply to any equipment that has been repaired or altered, except by HydroLynx Systems, or that has been subjected to misuse, negligence, or accident. It is expressly agreed that this warranty will be in lieu of all warranties of fitness and in lieu of the warranty of merchantability.

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3.0 INSTALLATION

The 61202V may be mounted to a mast or panel. Always mount the barometer so the cable exit faces down. For mast mount, use the V-block and U-bolts. For panel mount, remove the V-block and U-bolts to expose holes in the mounting plate.

To access electrical connections, remove the front cover. Loosen the nut on the cable strain relief on the bottom of the case. Run cables through the nut and strain relief opening. Connect wires to the labeled terminals on the circuit board as shown in attached WIRING DIAGRAM. Place jumpers at J1 to select RS-232, RS-485, or voltage output. Finger-tighten the strain relief nut and replace the cover.

When installed outdoors, we recommend using the barometer with a Young Model 61002 Pressure Port to minimize pressure errors caused by wind flow over the barometer inlet.

1.0 SPECIFICATIONS

Pressure	600 to 1100 hPa standard range
Operating Temperature	-50 to +60 °C
Accuracy	±0.3 hPa at 20 °C ±0.5 hPa at -50 to +60 °C
Output Rate	Once per second (1 Hz)
Serial Output	Full duplex RS-232 Half duplex RS-485 9600 baud Polled or continuous ASCII text output
Analog Outputs	0 to 5000 mV Standard range 600 to 1100 hPa Other ranges user settable
Resolution	Depends on Range
Analog	0.1 hPa
Digital	0.01 hPa
Power	7 to 30 VDC at 10mA
Case Weight	Fiber-reinforced Thermoplastic Net 1 lb 5 oz, Shipping 4 lb

2.0 INTRODUCTION

MODEL 61202V Barometric Pressure Sensor is a versatile electronic barometer featuring high accuracy, low power, wide operating temperature range, and calibrated outputs in several formats.

Low power consumption and wide temperature range make the 61202V ideal for remote applications using battery or solar power. Accuracy better than ±0.5 hPa is maintained over the entire pressure and temperature ranges.

All models include voltage output, full duplex RS-232, and half duplex RS-485 serial connections.

The standard pressure scale for analog outputs spans 600 to 1100 hPa. A narrower range may be selected via software commands. Serial outputs run in continuous or polled modes. In polled mode, a network of up to 32 sensors may be individually addressed.

3.1 JUMPER SETTINGS

Jumper J1 selects the data output format (Voltage, RS232 or RS485). Jumper J2 selects other parameters such as (B) POLLED/CONTINUOUS, (C) 50/60 Hz noise reduction. Refer to wiring diagram for specific jumper settings.

4.0 OPERATION

Operation begins 3 seconds after power is applied. Outputs are updated once per second.

4.1 ANALOG OUTPUT

Be sure jumper J1 is in the VOUT (factory default) position.

Standard voltage output range is 0 to 5000 mV full scale for 600 to 1100 hPa (multiplier 0.1 hPa per 1 mV).

Other pressure ranges within the 600 to 1100 hPa span may be selected via software commands but the full scale output signal range will always be the same, 0-5000mV. See section 4.3 SOFTWARE COMMANDS for details.

4.2 SERIAL OUTPUT

The baud rate is 9600. Serial output may be set to CONTINUOUS or POLLED mode using jumper J2. All serial output is numeric ASCII text representing pressure in hPa. Each string is terminated with a CR (ASCII 13). Example:

```
0983.09
0983.09
0983.09
0983.09
```

In CONTINUOUS mode, serial data is automatically sent once per second.

In POLLED mode, the unit sends data only after receiving a poll command. The poll command is Ma! where 'a' is the address value. The default address is '0' (ASCII 48). See section 4.3 SOFTWARE COMANDS for details on changing the poll address.

Upon receiving a properly addressed poll command, the unit immediately sends data.

4.3 SOFTWARE COMMANDS

All commands sent to the 61202V must use a minimum delay between characters of 20 milliseconds. Characters arriving faster than this may be missed. When using RS-485 half-duplex communication, only one device at a time may transmit on the shared bus.

Activate command mode by sending three ESC (ASCII 27) characters.

COMMAND mode is indicated by a ">" prompt. All commands must be terminated with a CR (ASCII 13). Use "??" to list available commands and current setup parameters as shown below.

```
>??
YOUNG 61200 SERIES BAROMETER V3.0.00
-----
Rn SET REFERENCE TO SEA LEVEL
On SET SERIAL OUTPUT FORMAT
Dn SET DECIMAL
Kn SET CALIB OFFSET
Sn SET CALIB SLOPE
Ln ANALOG OUT LO RANGE
Hn ANALOG OUT HI RANGE
Fn FILTER NUMBER
T1 TRANSFER EEPROM OUT
An SET POLL ADDRESS
Ma! POLL ADDR a (DURING OPERATE)
XX EXIT TO OPERATE

O:1 D:2 K:0 S:10000 R:0 L:9750 H:10250 F:4 A:0
PS:2086 PO:13374 TS:18145 TO:9688 DCBA:0110 WD:Y
>
```

Rn sets sea level reference where n is the offset value in hPa x 100. This value is added to the measured pressure to give the equivalent pressure at sea level.

On sets serial output format where n is the format type.
n = 1 Normal setting (pressure only)
n = 2 Diagnostic output for factory only

Dn sets decimal resolution in the serial output string.
n = 1 0.1 hPa
n = 2 0.01 hPa

Kn sets an offset where n is hPa x 100. For example, to add an offset of -0.21 hPa, enter K-21. The Kn offset is applied after the Sn multiplier is applied.

Sn sets a multiplier where n is the multiplier x 10000. For example, to multiply by 1.0123, enter S10123. The Sn multiplier is applied before the Kn offset is applied.

Ln sets the LOW end of the analog output range where n is hPa x 10. Use with the Hn command to set the analog output span. The standard value is 6000 for 600.0 hPa. Ln entries are limited to values between 6000 and 10000. For example, to set the LOW end of the range to 800 hPa, enter L8000.

Hn sets the HIGH end of the analog output range where n is hPa x 10. Use with the Ln command to set the analog output span. The standard value is 11000 for 1100.0 hPa. Hn entries are limited to values between 7000 and 11000. As an example, to set the HIGH end of the range to 1050 hPa, enter H10500.

Fn sets the filter number for an averaging function. The default value is 4. Use n=0 for no filtering, max=20. Larger values cause longer settling times for new results.

$$\text{output}_{\text{new}} = [(n-1) \cdot \text{output}_{\text{last}} + \text{sample}_{\text{new}}] / n$$

T1 dumps the internal EEPROM contents. This is for factory use only.

An sets the address for POLLED mode. The address may be any ASCII character in the range '0-9', 'A-Z', or 'a-z'.

Ma! is the POLL command where 'a' is the address. When set for polled mode (see wiring diagram), output sent only after receiving a properly addressed POLL command. This command functions only while the 61202V is in OPERATE mode. It listed in the HELP screen only as a convenience.

XX returns barometer to operate mode.

Values shown at the end of the list are calibration parameters for factory use only. All settings are retained when power is removed.

5.0 MAINTENANCE


The Model 61202 barometer requires no regular maintenance. Periodic calibration certification, if required, is available from the factory.

6.0 WARRANTY

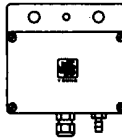
This product is warranted to be free of defects in materials and construction for a period of 12 months from date of initial purchase. Liability is limited to repair or replacement of defective item. A copy of the warranty policy may be obtained from R. M. Young Company.

7.0 CE COMPLIANCE

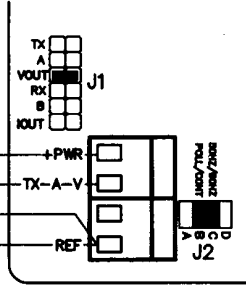
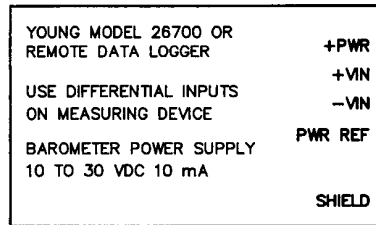
This product complies with European CE requirements for the EMC Directive. Please note that shielded cable must be used.

Declaration of Conformity	
Application of Council Directives:	89/336/EEC
Standards to which Conformity is Declared:	EN 50081-1 EN (CISPR 22 CLASS A) EN 50082-1(IEC 801-2,3,4)
Manufacturer's Name and Address:	R. M. Young Company Traverse City, MI, 49686, USA
Importer's Name and Address:	See Shipper or Invoice
Type of Equipment:	Meteorological Instruments
Model Number / Year of Manufacture:	61202V / 2004
I, the undersigned, hereby declare that the equipment specified conforms to the above Directives and Standards.	
Place / Date:	Traverse City, Michigan, USA / February 12, 2004
	
David Poinsett R & D Manager, R. M. Young Company	

MODEL 61202V WIRING DIAGRAMS

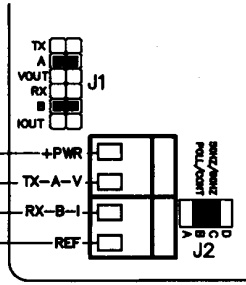
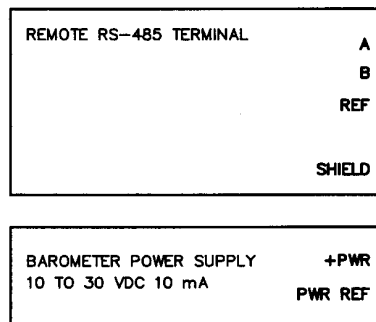


VOLTAGE OUTPUT



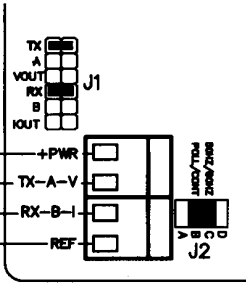
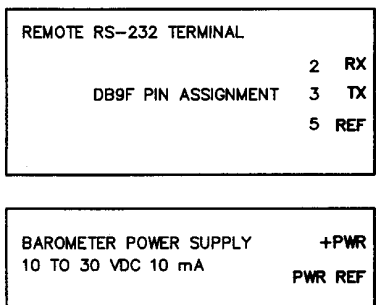
NOTE THAT DIFFERENTIAL NEGATIVE VIN IS CONNECTED TO REF AT BAROMETER. CONNECTING NEG VIN TO REF AT DATA LOGGER DEFEATS THE DIFFERENTIAL MEASUREMENT.

RS-485



(OPTIONAL)
TO OTHER
RS485 DEVICES

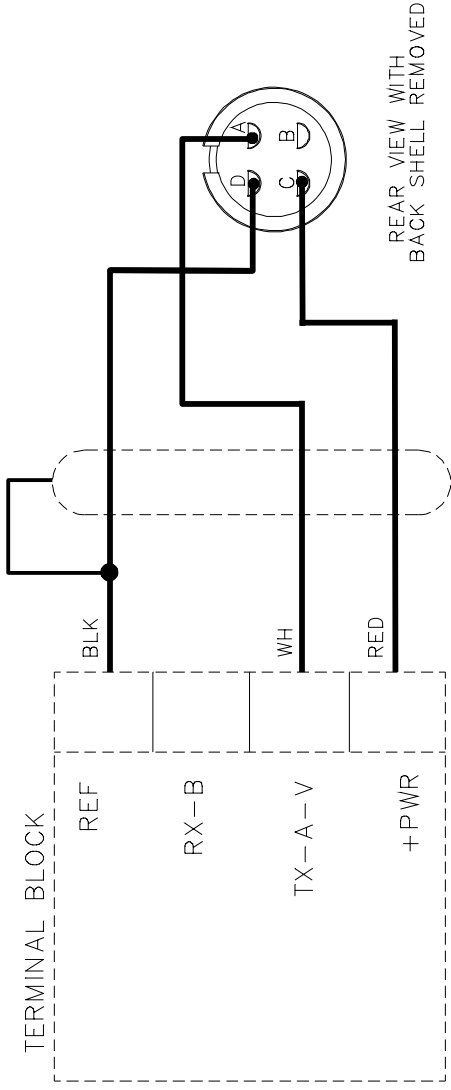
RS-232



TYPICAL ASCII SERIAL OUTPUT STRING: 0989.45
9600 BAUD, 8 DATA, 1 STOP, NO PARITY, NO FLOW CONTROL
EACH OUTPUT STRING ENDS WITH ASCII 13 <CR>
SEE MANUAL FOR ADDITIONAL DETAILS.

J2 JUMPER SUMMARY

FEATURE	JUMPER J2
CONTINUOUS OUTPUT	JUMP B (DEFAULT)
POLLED OUTPUT	NONE
60 Hz NOISE FILTER	JUMP C (DEFAULT)
50 Hz NOISE FILTER	NONE



4-PIN CONNECTOR
MS3106A-14S-2S

*	RM YOUNG PCB 61221	4-8-06
ECN#	DESCRIPTION	DATE
MODEL USAGE		
MODEL NO. 1522RMY		
TITLE CHASSIS		
DRAWN BY Z. BROWN	DATE 8-06	DWG TYPE WIRING DIAGRAM
CHECKED BY	DATE	SIZE A
	DWG NO. AC108429	REV B

HydroLynx