



# MODBUS Submersible Level Transmitter

---

## Communication Protocol



[www.tek-trol.com](http://www.tek-trol.com)

---

**NOTICE**

Read this manual before working with the product. For personal and system safety, and for optimum product performance, make sure you thoroughly understand the contents before installing, using, or maintaining this product.

For technical assistance, contact

Customer Support

796 Tek-Drive

Crystal Lake, IL 60014

USA

Tel: +1 847 857 6076, +1 847 655 7428

© **COPYRIGHT Tek-Trol LLC 2016**

No part of this publication may be copied or distributed, transmitted, transcribed, stored in a retrieval system, or translated into any human or computer language, in any form or by any means, electronic, mechanical, manual, or otherwise, or disclosed to third parties without the express written permission. The information contained in this manual is subject to change without notice.

**Table of Contents**

**Pressure Transmitter Communication Protocol ..... 2**  
    **Communication format: ..... 2**  
**Supported command, meaning of command and data ..... 3**

## Pressure Transmitter Communication Protocol

Communication format:

### I. Read command format (03 function code) example:

A. Send Read command format

Register Address	function code	Register High Address (H)	Register High Address (L)	Register Quantity High Byte (H)	Register Quantity Low Byte (L)	CRC16 (L)	CRC16 (H)
0 X 01	0 X 03	0 x 00	0 x 00	0 x 00	0 X 01	0 X 84	0 X 0A

B. Return Read data format:

Register Address	function code	Data Bytes	data (H)	data (L)	CRC16 (L)	CRC16 (H)
0 X 01	0 X 03	0 X 02	0 X 00	0 X 01	0 X 79	0 X 84

### II. Write comm and format (06 function code) example

A. Send write command format

Register Address	function code	Register High Address (H)	Register High Address (L)	Register Quantity High Byte (H)	Register Quantity High Byte (L)	CRC16 (L)	CRC16 (H)
0 X 01	0 X 06	0 X 00	0 X 00	0 X 00	0 X 02	0 X 08	0 X 0B

B. Return write data format example:

Register Address	function code	Register High Address (H)	Register High Address (L)	Register Quantity High Byte (H)	Register Quantity High Byte (L)	CRC16 (L)	CRC16 (H)
0 X 01	0 X 06	0 X 00	0 X 00	0 X 00	0 X 02	0 X 08	0 X 0B

### III. Abnormal response return

Register Address	function code	Abnormal code	CRC16 (L)	CRC16 (H)
0 X 01	0 X 80 + function code	0 X 01 (illegal function) 0 X 02 (illegal data address) 0 X 03 (illegal data)		

**Supported command, meaning of command and data**

**MODBUS-RTU protocol command list is as follows:**

Function code	Register High Address	Register Quantity High Byte	Data byte	Data scope	Command meaning
<b>0 X 03 function code read data</b>					
0 X 03	0 X 0000	1	2	1-255	Read slave address
0 X 03	0 X 0001	1	2	0-1200 1-2400 2-4800 3-9600 4-19200 5-38400 6-57600 7-115200	Read Baud rate
0 X 03	0 X 0003	1	2	0-#### 1-###.# 2-##.## 3-#.###	Decimal point stands for 0-3 digits decimal points
0 X 03	0 X 0002	1	2	0- Mpa/°C I 1- Kpa 2- Pa 3- Bar 4- Mbar 5- kg/cm <sup>2</sup> 6- psi 7- mh <sup>2</sup> o 8- mmh <sup>2</sup> o	Pressure unit
0 X 03	0 X 0004	1	2	-32768 -32767	Measurement output value
0 X 03	0 X 0005	1	2	-32768-32767	Zero point of transmitter range
0 X 03	0 X 0006	1	2	-32768 -32767	Full point of transmitter range
0 X 03	0 X 000c	1	2	-32768 -32767	Zero point offset value, generally factory sets as 0.
<b>0 X 06 function codes write data</b>					
0 X 06	0 X 0000		2	1-255	Write slave address
0 X 06	0 X 0001		2	0-1200 1-2400 2-4800 3-9600 4-19200 5-38400 6-57600 7-115200	Write Baud rate
0 X 06	0 x 000c		2	-32768 -32767	Zero point offset value* pressure output value= calibration measurement value + Zero point offset value

Save and factory reset					
0 X 06	0 X 000F		2	0- save t o user area	
0 X 06	0 X 0010		2	1- factory reset	



TEKMATION LLC reserves the right to change the designs and/or materials of its products without notice. The contents of this publication are the property of TEKMATON and cannot be reproduced by any other party without written permission. All rights reserved. Copyright © 2016 TEKMATON LLC  
DOC/TEK/MR/ML/JIM-COMMUNICATION PROTOCOL0219/A  
TEKMATION LLC



[www.tek-trol.com](http://www.tek-trol.com)

Tek-Trol is a fully owned subsidiary of TEKMATON LLC. We offer our customers a comprehensive range of products and solutions for process, power and oil & gas industries. Tek-Trol provides process measurement and control products for Flow, Level, Temperature & Pressure Measurement, Control Valves & Analyzer systems. We are present in 15 locations globally and are known for our knowledge, innovative solutions, reliable products and global presence.

## **Tek-Trol LLC**

796 Tek Drive Crystal Lake, IL 60014 USA

Tel.: +1 847 857 6076 , +1 847 655 7428 Fax: +1 847 655 6147

Email: [tektrol@tek-trol.com](mailto:tektrol@tek-trol.com)

[www.tek-trol.com](http://www.tek-trol.com)