



---

INDUSTRIAL CONTROL COMMUNICATIONS, INC.

---

# A.O. Smith PDNP Master Driver Manual

---



## TABLE OF CONTENTS

<b>1</b>	<b>A.O. Smith PDNP Master</b> .....	<b>2</b>
	1.1 Overview .....	2
	1.2 Master Settings .....	2
	1.3 Service Object Settings .....	2
	1.4 Diagnostics Object.....	3



# 1 A.O. Smith PDNP Master

## 1.1 Overview

This driver supports the A.O. Smith Proprietary Device Network (PDN) master protocol, which is primarily used in A.O. Smith Boiler products.

## 1.2 Master Settings

### Baud Rate

Fixed at 19.2kbaud.

### Parity

Fixed at No Parity (1 Stop Bit).

### Timeout

Sets the time in milliseconds that the driver will wait for a response from a device after sending a request.

### Scan Rate

This is the time in milliseconds the driver will wait between sending requests. This is a useful feature for certain devices or infrastructure components (such as radio modems) that may not be capable of sustaining the maximum packet rates that the driver is capable of producing. The start time for this delay is taken with respect to the moment at which the driver is capable of sending the next packet (due to either reception or timeout of the previous request). If no additional time is required, setting this field to 0 instructs the driver to send its next request packet as soon as possible.

## 1.3 Service Object Settings

The PDNP master driver uses service objects to define the parameter values to read from or write to the slaves. Each parameter in a service object is mapped to 2 bytes in the internal database (the data size is fixed at 16-bit, as this is the native data size of PDNP parameters).

### Description

This 32-character (max) field is strictly for user reference: it is not used at any time by the driver.

### Destination Address

Indicates the destination address of the device on the network that will be accessed by this service object. Enter a value between 0 and 31 to target a specific device.

### Start Parameter

Defines the starting parameter number (0...126) for a range of parameters associated with this service object.



### **Number of Parameters**

Defines the number of parameters (1...127) associated with this service object.

### **Database Address**

Defines the database address where the first parameter of this service object will be mapped. The configuration studio will not allow entry of a starting database address that will cause the service object to run past the end of the database. The highest valid database address, therefore, depends on the number of parameters to be accessed.

### **Data Type**

Fixed at 16-Bit Unsigned.

### **Multiplier**

The amount that associated network values are scaled by prior to being stored into the database or after being retrieved from the database. Upon retrieval from the database, raw data is multiplied by the multiplier to produce a network value (to be sent to the device). Similarly, network values (read from the device) are divided by the multiplier before being stored into the database.

### **Read Parameter**

Check to enable reading: the service object will continuously read from the device unless a pending write exists.

### **Write Parameter**

Check to enable writing: when values encompassed by this service object change in the internal database, these changes will be written down to the targeted device.

## **1.4 Diagnostics Object**

Each service object can optionally include a diagnostics object for debugging and diagnostics.

### **Diagnostics Database Address**

Enter the database address at which to store the diagnostics information.



---

**INDUSTRIAL CONTROL COMMUNICATIONS, INC.**

1600 Aspen Commons, Suite 210  
Middleton, WI USA 53562-4720  
Tel: [608] 831-1255 Fax: [608] 831-2045

<http://www.iccdesigns.com>

Printed in U.S.A