1 DESCRIPTION

The AO Smith AINP (Advanced Internal Network Proprietary Communication Protocol) driver allows the transfer of data to and from devices over RS-485. The *Advanced Internal Network Proprietary Communications Protocol.doc* document forms the basis of the AINP driver.

The FieldServer can be configured as a Server. The Client side has been implemented only for FieldServer's quality assurance requirements.

This driver can be used to transfer parameters and commands to/from AO Smith Master Controllers. Each remote device (e.g. AO Smith Master Controller) can have 30 parameter blocks; each with 255 (16bit integer) parameters which can be stored and updated by the Driver. Each Master device can have a command block of up to 255 commands. The Driver can be configured to execute any of these commands at the Server. The Server can be configured with a combined total of 255 of its own parameters and commands which can be read/written or executed by the Master Device.

1.1 Connection Facts

FieldServer Mode	Nodes	Comments
Client	N/A	The Client side has been implemented only for FieldServer's quality assurance requirements
Server	1	Each FieldServer can act as single AINP Server and can be configured as any (1-31) AINP type.

2 FORMAL DRIVER TYPE

Serial

Server Only

3 COMPATIBILITY MATRIX

FieldServer Model	Compatible with this driver
FS-x30	No
SlotServer	No
ProtoNode	No
ProtoCessor FPC-ED2	No
ProtoCessor FPC-ED4	No
QuickServer FS-QS-12xx	Yes
QuickServer FS-QS-10xx	No

4 CONNECTION INFORMATION

Connection type: RS-485 (Two wire, Half-Duplex)
Baud Rates: 19200, 38400
Data Bits: 9
Stop Bits: 1 (Protocol limitation)
Parity: None (Protocol limitation)
Multidrop Capability: Yes

5 DEVICES TESTED

Device	Tested (FACTORY, SITE)
BTH-120 197514-092	FACTORY

6 COMMUNICATIONS FUNCTIONS - SUPPORTED FUNCTIONS AT A GLANCE:

6.1 Data Types Supported

FieldServer Data Type	Description (or Device Data Type)
Master_Param	Master Parameters
Master_Cmd	Master Commands
Slave_Param	Slave Parameters
Slave_Cmd	Slave Commands

6.2   Read Operations supported

FieldServer as a Client	FieldServer as a Server
N/A	Provide Slave Parameters
N/A	Provide Slave Commands

6.3   Write (Control) Operations supported

FieldServer as a Client	FieldServer as a Server
N/A	Accept Master Parameters update
N/A	Accept Slave Parameter update
N/A	Accept Slave Command update
N/A	Update Master Parameter
N/A	Update Master Commands

6.4   Unsupported Functions and Data Types

Function	Reason
Execute commands on other Slaves	FieldServer is a data transfer device - communication with other slaves is not required.

6.5   Functions Described

Function	Description
Master_Param	Each Remote Master device can have 30 parameter blocks. Each block can have 255 (16bit integer) parameters. The Master device broadcasts all of its parameters periodically. This Driver can be configured as a Server to accept/update Master parameters.
Master_Cmd	The Remote Master device can have 1 command block of 255 (16bit integer) This Driver can be configured as a Server to execute any command at the Master.
Slave_Param/Slave_Cmd	Server devices can have a total of 255 (16bit integer) parameters and commands. Server Parameters can be read and commands executed at the Server by the Master.