

USER MANUAL

Modbus

IDP24-A
IDP24-AF



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1 General

This manual covers software version:

Software ID (Modbus): DDP-SW-002
Software Version: 2.02

1.1 Safety instructions

For a safe installation of a positioner, the following must be observed. The module must only be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this product as well as all instructions in this manual.

The information in this user manual is subject to changes without notice.

2 Purpose

It is the purpose of this document, to list specifications, protocol commands and functions, the MODBUS communication protocol in Val Control products.

3 Specifications

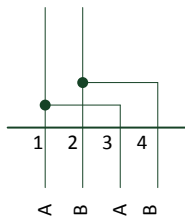
MODBUS specification version V1.1b 2006

3.1 Electrical specifications for standard configuration

MODBUS

Interface	RS485
Communication Settings	Default: 57600 Stop bit:1 Data size: 8 bit Parity: Even
	Others: 57600 Stop bit:2 Data size: 8 bit Parity: None 9600 Stop bit:2 Data size: 8 bit Parity: None 9600 Stop bit:1 Data size: 8 bit Parity: Even
Node ID	Bit Length is 10 bits for each data block. 1-247 (Software selectable)
Response time	Max. 2 sec from slave
MODBUS mode	RTU with CRC16
Galvanic isolated	

3.2 Terminals



The IHP24 does not contain any internal termination resistors on the RS485 bus.

Termination resistors should have the value of 120 ohm. The termination resistors could be applied across terminal 3 and 4, since Term 1 is internally connected to Term 3 and Term 2 is internally connected to Term 4.

A maximum of 247 nodes can be connected on the same daisy chain bus.

3.3 Shielding

Typical shielding of the RS485 bus cable is done on the master side of the cable. Note the RS485 circuit is galvanic isolated in the slave.

4 Menu

The communication settings can be changed in the Menu at the following location.

Advanced menu	Default	Value	Reset	Description
6 Modbus				Modbus configuration
1 ID	1	1-247		Change the Modbus ID
2 Baudrate	57600			Change the baudrate
3 Parity	Even	None/Even/Odd		Change the parity
4 Stopbits	1	1-2		Change the number of stopbits

Available baud rates:

- 9600 baud
- 19200 baud
- 38400 baud
- 57600 baud
- 115200 baud

5 MODBUS function codes

This section contains the supported MODBUS commands.

5.1 03 (0x03) Read holding registers

Reads Register 40001 - 49999

Request

	Length	Value
Function code	1 Byte	0x03
Starting address	2 Bytes	0x0000 to 0xFFFF
Quantity of registers	2 Bytes	1 to 125 (0xD7)

Response

	Length	Value
Function code	1 Byte	0x03
Byte count	1 Byte	2 x N*
Register value	N* x 2 Bytes	

Error

	Length	Value
Error code	1 Byte	0x83
Exception code	1 Byte	01 to 08

5.2 16 (0x10) Write multiple registers

Writes to Register 40001 - 49999

Request

	Length	Value
Function code	1 Byte	0x10
Starting address	2 Bytes	0x0000 to 0xFFFF
Quantity of registers	2 Bytes	0x0001 to 0x007B
Byte count	1 Byte	2 x N*
Registers value	N* x 2 Bytes	value

Response

	Length	Value
Function code	1 Byte	0x10
Byte count	1 Byte	0x0000 to 0xFFFF
Register value	N* x 2 Bytes	1 to 123 (0x7B)

Error

	Length	Value
Error code	1 Byte	0x90
Exception code	1 Byte	01 to 08

6 Live Status – Identification

6.1 Read (40001) Software Version

Address	Len	Parameter	Default / Values / Range / Units
40001	4	Software version	Example: 10203 decimal = 1.02.03

6.2 Read (40003) Software Id

Address	Len	Parameter	Default / Values / Range / Units
40003	14	Software Id	Value Ascii14

6.3 Read (40013) Manufacturer Name

Address	Len	Parameter	Default / Values / Range / Units
40013	14	Manufacturer Name	Value Ascii14

6.4 Read (40023) Type Name

Address	Len	Parameter	Default / Values / Range / Units
40023	14	Type Name	Value Ascii14

6.5 Read (40033) PCB Number

Address	Len	Parameter	Default / Values / Range / Units
40033	4	PCB Number	Value: 0 – 4294967295 Format: U32 MSB First

6.6 Read/Write (40035) Tag no

Address	Len	Parameter	Default / Values / Range / Units
40035	32	Tag no	Read/Write Value Ascii32

7 Clock Functions

7.1 Read/Write (40901 - 40907) Clock

Date is set to the clock when year is set.

Address	Len	Parameter	Default / Values / Range / Units
40901	1	Seconds	Values: 0 – 59
40902	1	Minutes	Values: 0 – 59
40903	1	Hour	Values 0 – 23
40904	1	Weekday	Values: 0 or 1..7
40905	1	Day	Values: 1 - 31
40906	1	Month	Values: 1 – 12
40907	1	Year	Values: 0 -2200

8 Live Status - Error Log Functions

8.1 Read (40101-40111) Error Log

Address	Len	Parameter	Default / Values / Range / Units
40101	2	Number of errors in the error log	Default: 0 Values: 0 - 10
40102	2	Error 1	Default: 0 Values: 0 – 9999
40103	2	Error 2	Default: 0 Values: 0 – 9999
40104	2	Error 3	Default: 0 Values: 0 – 9999
40105	2	Error 4	Default: 0 Values: 0 – 9999
40106	2	Error 5	Default: 0 Values: 0 - 9999
40107	2	Error 6	Default: 0 Values: 0 – 9999
40108	2	Error 7	Default: 0 Values: 0 – 9999
40109	2	Error 8	Default: 0 Values: 0 – 9999
40110	2	Error 9	Default: 0 Values: 0 – 9999
40111	2	Error 10	Default: 0 Values: 0 – 9999

9 Live Status - Event Log Functions

9.1 Read (40301-40350) Event Log

Address	Len	Parameter	Default / Values / Range / Units
40301	2	Number of events in the event log	Default: 0 Values: 0 - 10
40302	2	Event type – for Event number 1	Values: See manual for values
40303	4	Event Date – for Event number 1	Values: Bit 0 – 7 = Day (1 .. 31) Bit 8 – 15 = Month (1 .. 12) Bit 16-31 = Year (2010 .. 2100)
40305	4	Event Time – for Event number 1	Values: Bit 0 – 7 = Seconds (0 .. 59) Bit 8 – 15 = Minutes (0 - 59) Bit 16-31 = Hour (0 - 23)
40307	2	Event error – For Event number 1	Values: Error codes (000 - 999)
40308	2	Event type – for Event number 2	See 40302
40309	4	Event Date – for Event number 2	See 40303
40311	4	Event Time – for Event number 2	See 40305
40313	2	Event error – For Event number 2	See 40307
40314	2	Event type – for Event number 3	See 40302
40315	4	Event Date – for Event number 3	See 40303
40317	4	Event Time – for Event number 3	See 40305
40319	2	Event error – For Event number 3	See 40307
40320	2	Event type – for Event number 4	See 40302
40321	4	Event Date – for Event number 4	See 40303
40323	4	Event Time – for Event number 4	See 40305
40325	2	Event error – For Event number 4	See 40307
40326	2	Event type – for Event number 5	See 40302
40327	4	Event Date – for Event number 5	See 40303
40329	4	Event Time – for Event	See 40305

		number 5	
40331	2	Event error – For Event number 5	See 40307
40332	2	Event type – for Event number 6	See 40302
40333	4	Event Date – for Event number 6	See 40303
40335	4	Event Time – for Event number 6	See 40305
40337	2	Event error – For Event number 6	See 40307
40338	2	Event type – for Event number 7	See 40302
40339	4	Event Date – for Event number 7	See 40303
40341	4	Event Time – for Event number 7	See 40305
40343	2	Event error – For Event number 7	See 40307
40344	2	Event type – for Event number 8	See 40302
40345	4	Event Date – for Event number 8	See 40303
40347	4	Event Time – for Event number 8	See 40305
40349	2	Event error – For Event number 8	See 40307
40350	2	Event type – for Event number 9	See 40302
40351	4	Event Date – for Event number 9	See 40303
40353	4	Event Time – for Event number 9	See 40305
40355	2	Event error – For Event number 9	See 40307
40356	2	Event type – for Event number 10	See 40302
40357	4	Event Date – for Event number 10	See 40303
40359	4	Event Time – for Event number 10	See 40305
40361	2	Event error – For Event number 10	See 40307

10 Live Status - Diagnostic Log Functions

10.1 Read (40401-40411) Diagnostic Log

Address	Len	Parameter	Default / Values / Range / Units
40401	2	Number of events in the event log	Default: 0 Values: 0 - 10
40402	2	Error 1	Default: 0 Values: 0 – 9999
40403	2	Error 2	Default: 0 Values: 0 – 9999
40404	2	Error 3	Default: 0 Values: 0 – 9999
40405	2	Error 4	Default: 0 Values: 0 – 9999
40406	2	Error 5	Default: 0 Values: 0 - 9999
40407	2	Error 6	Default: 0 Values: 0 – 9999
40408	2	Error 7	Default: 0 Values: 0 – 9999
40409	2	Error 8	Default: 0 Values: 0 – 9999
40410	2	Error 9	Default: 0 Values: 0 – 9999
40411	2	Error 10	Default: 0 Values: 0 – 9999

11 Live Status

11.1 Read (40202) PV – Flow %

Address	Len	Parameter	Default / Values / Range / Units
40202	2	PV – Process Value	Value: 0 – 10000 Unit: 0.00 % – 100.00% Format: MSB First

11.2 Read (40203) TM – Flow %

Address	Len	Parameter	Default / Values / Range / Units
40203	2	TM – Process Value	Value: 0 – 10000 Unit: 0.00 % – 100.00% Format: MSB First

11.3 Read (40207) PV – Travel %

Address	Len	Parameter	Default / Values / Range / Units
40207	2	PV – Value	Value: 0 – 10000 Unit: 0.00 % – 100.00% Format: MSB First

11.4 Read (40212) PV - Flow mA

Address	Len	Parameter	Default / Values / Range / Units
40212	2	PV – Process Value	Value: 0 – 2150 Unit: 0.00 mA – 21.50mA Format: MSB First

11.5 Read (40213) TM – Flow mA

Address	Len	Parameter	Default / Values / Range / Units
40213	2	TM – Process Value	Value: 0 – 2150 Unit: 0.00 mA – 21.50mA Format: MSB First

11.6 Read (40214) Pressure

Address	Len	Parameter	Default / Values / Range / Units
40214	2	Pressure	Value: 0 – 50000 Unit: 0 – 500 bar Format: MSB First

11.7 Read (40221 - 40228) Pulse Counter on DO1 – D04

Address	Len	Parameter	Default / Values / Range / Units
40221	4	Counter DO1	Value: 0 – 4294967295
40223	4	Counter DO2	Value: 0 – 4294967295
40225	4	Counter DO3	Value: 0 – 4294967295
40227	4	Counter DO4	Value: 0 – 4294967295

11.8 Read/Write (40241) DO1-DO6 Status

Address	Len	Parameter	Default / Values / Range / Units
40241	2	DO1 Status	Default: 2 = Off Values: 1 = On 2 = Off
40242	2	DO2 Status	Default: 2 = Off Values: 1 = On 2 = Off
40243	2	DO3 Status	Default: 2 = Off Values: 1 = On 2 = Off
40244	2	DO4 Status	Default: 2 = Off Values: 1 = On 2 = Off
40245	2	DO5 Status	Default: 2 = Off Values: 1 = On 2 = Off
40246	2	DO6 Status	Default: 2 = Off Values: 1 = On 2 = Off

11.9 Read (40251-40254) AI1

Address	Len	Parameter	Default / Values / Range / Units
40251	2	AI1 – Analogue Input	Values: Value: 0 – 2150 Unit: 0.00 mA – 21.50mA

11.10 Read (40271-40278) DI1-D4 Status

Address	Len	Parameter	Default / Values / Range / Units
40271	2	DI1 Status	Default: 2 = Off Values: 1 = On 2 = Off
40272	2	DI2 Status	Default: 2 = Off Values: 1 = On 2 = Off
40273	2	DI3 Status	Default: 2 = Off Values: 1 = On 2 = Off
40274	2	DI4 Status	Default: 2 = Off Values: 1 = On 2 = Off

12 File system Commands

The file system commands follow a special protocol designed by val controls.

12.1 Write (46001-46016) SD-Card file system command line

Address	Len	Parameter	Default / Values / Range / Units
46001	32	Command Line	CD\ - Result in DIR PART CD DIR - Result in DIR PART READ FILENAME.EXT - Result in FILE Part DEL FILENAME.EXT DEL *.*

12.2 Write (46101) SD-Card file read DIR part number

Address	Len	Parameter	Default / Values / Range / Units
46101	4	Directory Part	1 .. 4294967295

12.3 Write (46103) SD-Card file read FILE part number

Address	Len	Parameter	Default / Values / Range / Units
46103	4	File Part	1 .. 4294967295

12.4 Read (46201-46264) SD-Card file read DIR part

Address	Len	Parameter	Default / Values / Range / Units
46201	128	Directory Data	Returns the dir part of 32 bytes length

12.5 Read (46301-46364) SD-Card file read FILE part

Address	Len	Parameter	Default / Values / Range / Units
46301	128	File Data	Returns the file part of 32 bytes length

13 Live Status - Commands

13.1.1 Read (45001-45015) last stroke test information

This command reads the values recorded during the last partial stroke test

Address	Len	Parameter	Default / Values / Range / Units
45001	2	Last PST Status	Values: 0 = Never Run 1 = Ok 2 = Warning 3 = Error
45002	6	Reserved	
45005	2	Last FST Status	Values: 0 = Never Run 1 = Ok 2 = Warning 3 = Error
45006	6	Reserved	
45010	2	Last SOT Status	Values: 0 = Never Run 1 = Ok 2 = Warning 3 = Error
45011	6	Reserved	

13.1.2 Read (45021) Live test information

This command reads the values recorded during the last partial stroke test

Address	Len	Parameter	Default / Values / Range / Units
45021	2	ESD Line Power Status	0 = Not used 1 = Power on ESD Line (On) 2 = No Power on ESD Line (Off)
45022	2	PST in Progress	Values: 0 = Not used 1 = Yes 2 = No
45023	2	FST in Progress	Values: 0 = Not used 1 = No 2 = Yes
45024	2	SOT in Progress	Values: 0 = Not used 1 = No 2 = Yes
45025	2	Test Lamps Status	Values: 0 = Undefined 1 = All Lamps Off 2 = Lamp Ok On 3 = Lamp Error On 4 = Lamp Test On
45026	2	Test Lamp Ready to Reset	Values: 0 = Not used 1 = On 2 = Off
45027	2	ESD state	Values: 0 = Undefined 1 = Operational 2 = Fail position

13.1.3 Read (45041) last PST test data

This command reads the values recorded during the last full stroke

Address	Len	Parameter	Default / Values / Range / Units
45041	2	Start pressure	Range: 0 – 50000 Units: 0.00 – 500.00 bar
45042	2	Breakaway pressure	Range: 0 – 50000 Units: 0.00 – 500.00 bar
45043	4	Breakaway time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45045	4	Closing time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45047	4	Opening time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45049	2	Pressure at SP	Range: 0 – 50000 Units: 0.00 – 500.00 bar
45050	2	Minimum Pressure	Range: 0 – 50000 Units: 0.00 – 500.00 bar
45051	2	Maximum Travel	Range: 0 – 10000 Units: 0.00 – 100.00 %
45052	4	SOV reaction time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45054	4	Pressure rising time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45056	4	Actuator fill time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms

13.1.4 Read (45061) last FST test data

This command reads the values recorded during the last full stroke

Address	Len	Parameter	Default / Values / Range / Units
45061	2	Start pressure	Range: 0 – 50000 Units: 0.00 – 500.00 bar
45062	2	Breakaway pressure	Range: 0 – 50000 Units: 0.00 – 500.00 bar
45063	4	Breakaway time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45065	4	Closing time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45067	4	Opening time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45069	4	De-pressuring timeout	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45071	4	SOV reaction time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45073	4	Pressure rising time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms
45075	4	Actuator fill time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms

13.1.5 Read (45081) last SOT test data

This command reads the values recorded during the last full stroke

Address	Len	Parameter	Default / Values / Range / Units
45081	2	Solenoid Start pressure	Range: 0 – 50000 Units: 0.00 – 500.00 bar
45082	2	Solenoid Pressure Drop	Range: 0 – 50000 Units: 0.00 – 500.00 bar
45083	4	Solenoid Reaction Time	Range 0 - 4294967295 ms Units: 0 – 4294967295 ms

13.2 Partial stroke configuration

13.2.1 Read (45101) Partial stroke “Test settings: Pressure dead band in Bar”

This command writes the partial stroke “Test settings”

Address	Len	Parameter	Default / Values / Range / Units
45101	2	Test setting: Pressure dead band in Bar	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.2.2 Read/Write (45102) Partial stroke “Test settings: Pressure Dead band in Pct.”

This command writes the partial stroke “Test settings”

Address	Len	Parameter	Default / Values / Range / Units
45102	2	Test setting: Pressure dead band in Pct.	Range: 0 – 1000 MSB First Units: 0.00 – 10.00 %

13.2.3 Read/Write (45103) Partial stroke “Test settings: Position dead band”

This command writes the partial stroke “Test settings”

Address	Len	Parameter	Default / Values / Range / Units
45103	2	Test setting: Position dead band	Range: 0 – 1000 Units: 0.00 – 100.00 %

13.2.4 Read/Write (45104) Partial stroke “Test settings: PST travel”

Address	Len	Parameter	Default / Values / Range / Units
45104	2	Test setting: PST travel	Range: 0 – 10000 Units: 0.00 – 100.00 %

13.2.5 Read/Write (45105) Partial stroke “Error parameter Start pressure low”

Address	Len	Parameter	Default / Values / Range / Units
45105	2	Error Parameters – Start Pressure Low	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.2.6 Read/Write (45106) Partial stroke “Error parameter Start pressure high”

Address	Len	Parameter	Default / Values / Range / Units
45106	2	Error Parameters – Start Pressure High	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.2.7 Read/Write (45107) Partial stroke “Error parameter: Min. breakaway pressure”

Address	Len	Parameter	Default / Values / Range / Units
45107	2	Error Parameters –Min Breakaway pressure	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.2.8 Read/Write (45108) Partial stroke “Error parameter: Breakaway timeout”

Address	Len	Parameter	Default / Values / Range / Units
45108	4	Error Parameters – Breakaway timeout	Units: milliseconds Range: 0 – 65535 Units: 0 ms – 65535 ms

13.2.9 Read/Write (45110) Partial stroke “Error parameter: Closing timeout”

Address	Len	Parameter	Default / Values / Range / Units
45110	4	Error Parameters – Closing timeout	Units: milliseconds Range: 0 – 65535 Units: 0 ms – 65535 ms

13.2.10 Read/Write (45112) Partial stroke “Error parameter: Total timeout”

Address	Len	Parameter	Default / Values / Range / Units
45112	4	Error Parameters – Total Timeout	Units: milliseconds

13.2.11 Read/Write (45114) Partial stroke “Error parameter: Min. allowed pressure”

Address	Len	Parameter	Default / Values / Range / Units
45114	2	Minimum allowed pressure	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.2.12 Read/Write (45120) Partial stroke “Warning parameter: Hide Warnings ”

Address	Len	Parameter	Default / Values / Range / Units
45120	2	Warning parameter: Hide warnings	Values: 0 = Not used 1 = Yes 2 = No

13.2.13 Read/Write (45121) Partial stroke “Warning parameter: Breakaway pressure low”

Address	Len	Parameter	Default / Values / Range / Units
45121	2	Warning parameter: Breakaway pressure low	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.2.14 Read/Write (45122) Partial stroke “Warning parameter: Breakaway pressure high”

Address	Len	Parameter	Default / Values / Range / Units
45122	2	Warning parameter: Breakaway pressure high	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.2.15 Read/Write (45123) Partial stroke “Warning parameter: Breakaway time low”

Address	Len	Parameter	Default / Values / Range / Units
45123	4	Warning parameter: Breakaway time low	Range: 0 – 65535 Units: 0 ms – 65535 ms

13.2.16 Read/Write (45125) Partial stroke “Warning parameter: Breakaway time high”

Address	Len	Parameter	Default / Values / Range / Units
45125	4	Warning parameter: Breakaway time high	Range: 0 – 65535 Units: 0 ms – 65535 ms

13.2.17 Read/Write (45127) Partial stroke “Warning parameter: Closing time low”

Address	Len	Parameter	Default / Values / Range / Units
45127	4	Warning parameter: Closing time low	Range: 0 – 65535 Units: 0 ms – 65535 ms

13.2.18 Read/Write (45129) Partial stroke “Warning parameter: Closing time high”

Address	Len	Parameter	Default / Values / Range / Units
45129	4	Warning parameter: Closing time high	Range: 0 – 65535 Units: 0 ms – 65535 ms

13.2.19 Read/Write (45131) Partial stroke “Warning parameter: Maximum travel”

Address	Len	Parameter	Default / Values / Range / Units
45131	2	Warning parameter: Maximum travel	Range: 0 – 1000 Units: 0.00 – 100.00 %

13.3 Full stroke configuration

13.3.1 Read (45201) Full stroke Test setting: FST Pressure Dead band Bar

Address	Len	Parameter	Default / Values / Range / Units
45201	2	Test setting: FST Pressure Dead band Bar	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.3.2 Read/Write (45202) Full stroke Test setting: FST Pressure Dead band Pct.

Address	Len	Parameter	Default / Values / Range / Units
45202	2	Test setting: FST Pressure Dead band Pct.	Range: 0 – 1000 MSB First Units: 0.00 – 10.00 %

13.3.3 Read/Write (45203) Full stroke “Test Setting: Position Dead band Pct.”

Address	Len	Parameter	Default / Values / Range / Units
45203	2	Test setting: FST Position Dead band	Range: 0 – 1000 MSB First Units: 0.00 – 10.00 %

13.3.4 Read/Write (45204) Full stroke “Test Setting: Wait at fail position”

Address	Len	Parameter	Default / Values / Range / Units
45204	2	Test setting: FST Wait at fail position	Units: Seconds

13.3.5 Read/Write (45205) Full stroke “Error Parameters: Start Pressure Low”

Address	Len	Parameter	Default / Values / Range / Units
45205	2	FST Start Pressure Low	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.3.6 Read/Write (45206) Full stroke “Error Parameters: Start Pressure High”

Address	Len	Parameter	Default / Values / Range / Units
45206	2	FST Start Pressure High	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.3.7 Read/Write (45207) Full stroke “Error Parameters: Min breakaway pressure”

Address	Len	Parameter	Default / Values / Range / Units
45207	2	FST Min breakaway pressure	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.3.8 Read/Write (45208) Full stroke “Error Parameters: Breakaway timeout”

Address	Len	Parameter	Default / Values / Range / Units
45208	4	FST Breakaway timeout	Units: milliseconds

13.3.9 Read/Write (45210) Full stroke “Error Parameters: Closing timeout”

Address	Len	Parameter	Default / Values / Range / Units
45210	4	FST Closing timeout	Units: milliseconds

13.3.10 Read/Write (45212) Full stroke “Error Parameters: De-pressuring timeout”

Address	Len	Parameter	Default / Values / Range / Units
45212	4	FST De-pressuring timeout	Units: milliseconds

13.3.11 Read/Write (45214) Full stroke “Error Parameters: Total opening timeout”

Address	Len	Parameter	Default / Values / Range / Units
45214	4	FST Total opening timeout	Units: milliseconds

13.3.12 Read/Write (45220) Full stroke “Warning parameter: Hide Warnings”

Address	Len	Parameter	Default / Values / Range / Units
45220	2	Warning parameter: Hide warnings	Values: 0 = Not used 1 = Yes 2 = No

13.3.13 Read/Write (45221) Full stroke “Warning parameter: Breakaway pressure low”

Address	Len	Parameter	Default / Values / Range / Units
45221	2	Warning parameter: Breakaway pressure low	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.3.14 Read/Write (45222) Full stroke “Warning parameter: Breakaway pressure high”

Address	Len	Parameter	Default / Values / Range / Units
45222	2	Warning parameter: Breakaway pressure high	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.3.15 Read/Write (45223) Full stroke “Warning parameter: Breakaway time low”

Address	Len	Parameter	Default / Values / Range / Units
45223	4	Warning parameter: Breakaway time low	Range: 0 – 65535 Units: 0 ms – 65535 ms

13.3.16 Read/Write (45225) Full stroke “Warning parameter: Breakaway time high”

Address	Len	Parameter	Default / Values / Range / Units
45225	4	Warning parameter: Breakaway time high	Range: 0 – 65535 Units: 0 ms – 65535 ms

13.3.17 Read/Write (45227) Full stroke “Warning parameter: Closing time low”

Address	Len	Parameter	Default / Values / Range / Units
45227	4	Warning parameter: Closing time low	Range: 0 – 65535 Units: 0 ms – 65535 ms

13.3.18 Read/Write (45229) Full stroke “Warning parameter: Closing time high”

Address	Len	Parameter	Default / Values / Range / Units
45229	4	Warning parameter: Closing time high	Range: 0 – 65535 Units: 0 ms – 65535 ms

13.4 Solenoid test configuration

13.4.1 Read (45301) Solenoid “Test settings: Pressure Dead band in Bar”

Address	Len	Parameter	Default / Values / Range / Units
45301	2	Test settings: Pressure Dead band	Range: 0 - 10000 Units: 0.00 % - 100.00%

13.4.2 Read/Write (45302) Solenoid “Test settings: Pressure Dead band in Pct”

Address	Len	Parameter	Default / Values / Range / Units
45302	2	Test setting: FST Pressure Dead band Pct.	Range: 0 – 1000 MSB First Units: 0.00 – 10.00 %

13.4.3 Read/Write (45303) Solenoid “Test settings: Position Dead band”

Address	Len	Parameter	Default / Values / Range / Units
45303	2	Test settings: Position Dead band	Range: 0 - 10000 Units: 0.00 % - 100.00%

13.4.4 Read/Write (45304) Solenoid “Error parameters: Start Pressure Low”

Address	Len	Parameter	Default / Values / Range / Units
45304	2	Error parameters: Start Pressure Low	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.4.5 Read/Write (45305) Solenoid “Error parameters: Start Pressure High”

Address	Len	Parameter	Default / Values / Range / Units
45305	2	Error parameters: Start Pressure High	Range: 0 – 50000 Units: 0.00 – 500.00 bar

13.4.6 Read/Write (45306) Solenoid “Error parameters: Max time”

Address	Len	Parameter	Default / Values / Range / Units
45306	4	Error parameters: Max time	Range: 0 – 65535 Units: 0 ms – 65535 ms

13.5 Test status output

13.5.1 Read/Write (45321) Configuration “Fail signal timeout status”

Address	Len	Parameter	Default / Values / Range / Units
45321	2	Fail signal timeout status	0 = Undefined 1 = On 2 = Off

13.5.2 Read/Write (45322) Configuration “Fail signal timeout time”

Address	Len	Parameter	Default / Values / Range / Units
45322	2	Fail signal timeout time	Default: 10 min Range: 1-240

13.5.3 Read/Write (45323) Configuration “Pass signal timeout status”

Address	Len	Parameter	Default / Values / Range / Units
45323	2	Pass signal timeout status	Pass signal timeout status 0 = Undefined 1 = On 2 = Off

13.5.4 Read/Write (45324) Configuration “Pass signal timeout time”

Address	Len	Parameter	Default / Values / Range / Units
45324	2	Pass signal timeout time	Default: 10 min Range: 1-240

13.6 PST scheduler

This command reads IDP PST scheduler configuration

13.6.1 Read/Write (45331) Scheduler Configuration Status

Address	Len	Parameter	Default / Values / Range / Units
45331	2	Scheduler status	0 = Undefined 1 = On 2 = Off

13.6.2 Read/Write (45341-45352) Scheduler Configuration - Month

Address	Len	Parameter	Default / Values / Range / Units
45341	2	Scheduler month January	0 = Undefined, 1 = On, 2 = Off (Default)
45342	2	Scheduler month February	0 = Undefined, 1 = On, 2 = Off (Default)
45343	2	Scheduler month March	0 = Undefined, 1 = On, 2 = Off (Default)
45344	2	Scheduler month April	0 = Undefined, 1 = On, 2 = Off (Default)
45345	2	Scheduler month May	0 = Undefined, 1 = On, 2 = Off (Default)
45346	2	Scheduler month June	0 = Undefined, 1 = On, 2 = Off (Default)
45347	2	Scheduler month July	0 = Undefined, 1 = On, 2 = Off (Default)
45348	2	Scheduler month August	0 = Undefined, 1 = On, 2 = Off (Default)
45349	2	Scheduler month September	0 = Undefined, 1 = On, 2 = Off (Default)
45350	2	Scheduler month October	0 = Undefined, 1 = On, 2 = Off (Default)
45351	2	Scheduler month November	0 = Undefined, 1 = On, 2 = Off (Default)
45352	2	Scheduler month December	0 = Undefined, 1 = On, 2 = Off (Default)

13.6.3 Read/Write (45361-45364) Scheduler Configuration - Day

Address	Len	Parameter	Default / Values / Range / Units
45361	2	Scheduler Day 1	Default: 0 (not used) Range: 0 – 31, 0 = not used
45362	2	Scheduler Day 2	Default: 0 (not used) Range: 0 – 31, 0 = not used
45363	2	Scheduler Day 3	Default: 0 (not used) Range: 0 – 31, 0 = not used
45364	2	Scheduler Day 4	Default: 0 (not used) Range: 0 – 31, 0 = not used

13.6.4 Read/Write (45371) Scheduler Configuration - Hour

Address	Len	Parameter	Default / Values / Range / Units
45371	2	Scheduler Hour	Default: 9 Range 0-23

13.7 Commands

13.7.1 Write (45401) Start test and calibration commands

Address	Len	Parameter	Default / Values / Range / Units
45401	2	Commands	1: Start partial stroke 2: Start full stroke 3: Start solenoid test 4: Abort test 5: Operational 6: Fail position 7: Start auto calibration 8: Start partial stroke reference 9: Start full stroke reference 10: Start solenoid reference