

**M-3311A 2/3 Winding
DNP3.0
Communication Database
Rev. 3.0a**



M-3311A 2/3 DNP3.0 COMMUNICATION DATABASE

DEVICE I.D. = 205

**Specifications Presented Herein Are Thought To Be Accurate At The Time Of Publication
But Are Subject To Change Without Notice.**

No Warranties Of Any Kind Are Implied On The Information Contained In This Document.

REV	1.0	1/29/2008 Preliminary release
REV	2.0	5/23/2011 TCM2, CCM1/2 added
REV	3.0	7/5/2011 Document update for ranges, point list and point number mismatch.
REV	3.0a	8/1/2024 Updating logos and removing "Co. Inc.". No updates to points.

Beckwith Electric Co. DNP3.0 Points Grouping

Specifications

SCALE FACTOR: is the factor by which an integer value read from the control is divided to get the value of the variable in the indicated UNITS.

Points marked with a (U) appended to the scale factor field should be taken as unsigned value (0-65535) before scaling.

UNITS: unit of the described data point.

All points defined as “NOT USED” can be read and will return 0 for data.

The communication database profile in the M3311A 2/3 with the DNPV3.0 protocol is grouped into five object types. These are:

- **Single Bit Binary Inputs (status)** (object 01, variation 01, 02): They are considered as class 0 data.
- **16 Bit Analog Output Block / Status** (object 40, variation 01, variation 02 / object 41, variation 01, variation 02): With these points, you can read and write all the setpoints & system setup.
- **Binary Outputs & Control Relay Output Block (Direct control)** (object 10, variation 02 / object 12, variation 02): With these points, you can write all the configuration points.
- **16 Bit Analog Inputs** (object 30, variation 01, 02, 03, 04): These points represent demand metering, voltage & currents.
- **Date & Time** (read and write time using object 50, variation 01): Represents the system time & date.
- **Static (Class 0)** data (object 60, variation 01): These points represent all the binary inputs, control information, demand metering, target information and counters.
- **Events (Class 2)** data (object 60, variation 03): These points represent the binary & analog inputs.

DNP Configuration Parameters:

M3311A 2/3 relays support DNP through the Rear RS232 (COM2) & RS485 (COM3) communication ports.

These ports support baud rates 1200, 2400, 4800, 9600 and the default baud rate is set to 9600.

M3311A 2/3 Slave address:

DNP3 Slave IED Address range is from 0 to 65519. Address 65535 (hex FFFF) is used to broadcast messages to all devices . The communication address can be set through the HMI (Front panel).

DNP V3.0 DEVICE PROFILE DOCUMENT																																																												
Vendor Name: Beckwith Electric Co., Inc. Device Name: Transformer (2/3 Winding) Protection System																																																												
Highest DNP Level Supported: For Requests: Level 2 For Responses: Level 2			Device Function: ☐ Master ☒ Slave																																																									
Notable objects, functions, and/or qualifiers supported in addition to the Highest DNP Levels Supported (the complete list is described in the attached table): The read function code for Object 50 (Time and Date), variation 1, is supported.																																																												
Maximum Data Link Frame Size (octets): Transmitted: 292 Received 64			Maximum Application Fragment Size (octets): Transmitted: 3K Received 3K																																																									
Maximum Data Link Re-tries: ☐ None ☒ Fixed at 2 ☐ Configurable from 0 to 255			Maximum Application Layer Re-tries: ☒ None ☐ Configurable																																																									
Requires Data Link Layer Confirmation: ☒ Never ☐ Always ☐ Sometimes ☐ Configurable as: Never, Only for multi frame messages																																																												
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Timeouts while waiting for: <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Data Link Confirm:</td> <td>☒ None</td> <td>☐ Fixed at 3 sec</td> <td>☐ Variable</td> <td>☐ Configurable</td> </tr> <tr> <td>Complete Appl. Fragment:</td> <td>☒ None</td> <td>☐ Fixed at _____</td> <td>☐ Variable</td> <td>☐ Configurable</td> </tr> <tr> <td>Application Confirm:</td> <td>☐ None</td> <td>☒ Fixed at 5 sec</td> <td>☐ Variable</td> <td>☐ Configurable</td> </tr> <tr> <td>Complete Appl. Response:</td> <td>☒ None</td> <td>☐ Fixed at _____</td> <td>☐ Variable</td> <td>☐ Configurable</td> </tr> </table>						Data Link Confirm:	☒ None	☐ Fixed at 3 sec	☐ Variable	☐ Configurable	Complete Appl. Fragment:	☒ None	☐ Fixed at _____	☐ Variable	☐ Configurable	Application Confirm:	☐ None	☒ Fixed at 5 sec	☐ Variable	☐ Configurable	Complete Appl. Response:	☒ None	☐ Fixed at _____	☐ Variable	☐ Configurable																																			
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Table 1 – Device Profile (1 of 2)

DNP V3.0 DEVICE PROFILE DOCUMENT																									
Vendor Name: Beckwith Electric Co., Inc. Device Name: Transformer (2/3 Winding) Protection System																									
Reports Binary Input Change Events when no specific variation requested: ☒ Never ☐ Only time-tagged ☐ Only non-time-tagged ☐ Configurable	Reports time-tagged Binary Input Change Events when no specific variation requested: ☒ Never ☐ Binary Input Change With Time ☐ Binary Input Change With Relative Time ☐ Configurable (attach explanation)																								
Sends Unsolicited Responses: ☒ Never ☐ Configurable ☐ Only certain objects ☐ Sometimes (attach explanation) ☐ ENABLE/DISABLE UNSOLICITED Function codes supported	Sends Static Data in Unsolicited Responses: ☒ Never ☐ When Device Restarts ☐ When Status Flags Change No other options are permitted.																								
Default Counter Object/Variation:	Counters Roll Over at: ☒ No Counters Reported ☐ Configurable (attach explanation) ☐ 16 Bits ☐ 32 Bits ☐ Other Value: ____ ☐ Point-by-point list attached																								
Sends Multi-Fragment Responses: ☒ Yes ☐ No																									
Sequential File Transfer Support: <table border="0"> <tbody> <tr> <td>Append File Mode</td> <td>☐ Yes</td> <td>☒ No</td> </tr> <tr> <td>Custom Status Code Strings</td> <td>☐ Yes</td> <td>☒ No</td> </tr> <tr> <td>Permissions Field</td> <td>☐ Yes</td> <td>☒ No</td> </tr> <tr> <td>File Events Assigned to Class</td> <td>☐ Yes</td> <td>☒ No</td> </tr> <tr> <td>File Events Poll Specifically</td> <td>☐ Yes</td> <td>☒ No</td> </tr> <tr> <td>File Events Send Immediately</td> <td>☐ Yes</td> <td>☒ No</td> </tr> <tr> <td>Multiple Blocks in a Fragment</td> <td>☐ Yes</td> <td>☒ No</td> </tr> <tr> <td>Max Number of Files Open</td> <td>0</td> <td></td> </tr> </tbody> </table>		Append File Mode	☐ Yes	☒ No	Custom Status Code Strings	☐ Yes	☒ No	Permissions Field	☐ Yes	☒ No	File Events Assigned to Class	☐ Yes	☒ No	File Events Poll Specifically	☐ Yes	☒ No	File Events Send Immediately	☐ Yes	☒ No	Multiple Blocks in a Fragment	☐ Yes	☒ No	Max Number of Files Open	0	
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Table 1 – Device Profile (2 of 2)

DNP V3.0 Implementation Table

OBJECT			REQUEST		RESPONSE	
Object Number	Variation Number	Description	Function Codes (dec)	Qualifier Codes (hex)	Function Codes (dec)	Qualifier Codes (hex)
1	1 (default – see note 1)	Binary Input	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
1	2	Binary Input with Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
10	2 (default – see note 1)	Binary Output Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
2	2 (default – see note 1)	Binary Input Change with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response)	17, 28 (index)
12	1	Control Relay Output Block	5 (direct op) 6 (dir. op, noack)	00, 01 (start-stop) 07, 08 (limited qty) 17, 28 (index)	129 (response)	echo of request
20	2	16-Bit Binary Counter	–	–	–	–
20	5	32-Bit Binary Counter without Flag	–	–	–	–
20	6 (default – see note 1)	16-Bit Binary Counter without Flag	–	–	–	–
30	1	32-Bit Analog Input	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
30	2 (default – see note 1)	16-Bit Analog Input	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
30	3	32-Bit Analog Input without Flag	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)

■ NOTES:

1. A Default variation refers to the variation responded when variation 0 is requested and/or in class 0, 1, 2, or 3 scans.
2. For static (non-change-event) objects, qualifiers 17 or 28 are only responded when a request is sent with qualifiers 17 or 28, respectively. Otherwise, static object requests sent with qualifiers 00, 01, 06, 07, or 08, will be responded with qualifiers 00 or 01. (For change-event objects, qualifiers 17 or 28 are always responded except for object 70 which responds with qualifier 1b or 5b.)
3. For a Cold, restart is implemented as a warm restart – the executable is not restarted, but the DNP process is restarted.
4. Writes of Internal Indications are only supported for index 7 (Restart IIN1-7), and indices 16 and beyond (user-defined indications) .

Table 2 – Implementation (1 of 3)

DNP V3.0 Implementation Table

OBJECT			REQUEST		RESPONSE	
Object Number	Variation Number	Description	Function Codes (dec)	Qualifier Codes (hex)	Function Codes (dec)	Qualifier Codes (hex)
30	4	16-Bit Analog Input without Flag	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
32	4	16-Bit Analog Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response)	17, 28 (index)
40	1	32-Bit Analog Output Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
40	2 (default – see note 1)	16-Bit Analog Output Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
41	1	32-Bit Analog Output Block	5 (direct op) 6 (dir. op, noack)	00, 01 (start-stop) 07, 08 (limited qty) 17, 28 (index)	129 (response)	echo of request
41	2	16-Bit Analog Output Block	5 (direct op) 6 (dir. op, noack)	00, 01 (start-stop) 07, 08 (limited qty) 17, 28 (index)	129 (response)	echo of request
50	0	Time and Date	–	–	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
50	1 (default – see note 1)	Time and Date	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07 (limited qty = 1) 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
			2 (write)	00, 01 (start-stop) 07 (limited qty = 1) 08 (limited qty) 17, 28 (index)	–	–
52	2	Time Delay Fine	–	–	129 (response)	07 (limited qty) (qty = 1)
60	0	Class 0, 1, 2, and 3 Data	–	–	–	–
60	1	Class 0 Data	1 (read)	06 (no range, or all)	–	–

■ NOTES:

1. A Default variation refers to the variation responded when variation 0 is requested and/or in class 0, 1, 2, or 3 scans.
2. For static (non-change-event) objects, qualifiers 17 or 28 are only responded when a request is sent with qualifiers 17 or 28, respectively. Otherwise, static object requests sent with qualifiers 00, 01, 06, 07, or 08, will be responded with qualifiers 00 or 01. (For change-event objects, qualifiers 17 or 28 are always responded except for object 70 which responds with qualifier 1b or 5b.)
3. For a Cold, restart is implemented as a warm restart – the executable is not restarted, but the DNP process is restarted.
4. Writes of Internal Indications are only supported for index 7 (Restart IIN1-7), and indices 16 and beyond (user-defined indications).

Table 2 – Implementation (2 of 3)

DNP V3.0 Implementation Table

OBJECT			REQUEST		RESPONSE	
Object Number	Variation Number	Description	Function Codes (dec)	Qualifier Codes (hex)	Function Codes (dec)	Qualifier Codes (hex)
60	2	Class 1 Data	–	–	–	–
60	3	Class 2 Data	1 (read)	06 (no range, or all) 07, 08 (limited qty)	–	–
60	4	Class 3 Data	–	–	–	–
70	1	File Identifier	–	–	–	–
70	3	File Command	–	–	–	–
70	4	File Command Status	–	–	–	–
70	5	File Transfer	–	–	–	–
70	6	File Transfer Status	–	–	–	–
70	7	File Descriptor	–	–	–	–
80	0	Internal Indications (Variation 0 is used to request default variation)	–	–	–	–
80	1	Internal Indications	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
			2 (write) (see note 4)	00 (start-stop) 01 (start-stop) 07, 08 (limited qty) 17, 28 (index)	–	–
112	string length	Virtual Terminal Output Block	–	–	–	–
113	string length	Virtual Terminal Event Data	–	–	–	–
No Object (function code only) – See Note 3			13 (cold restart)	–	–	–
No Object (function code only)			14 (warm restart)	–	–	–
No Object (function code only)			23 (delay meas.)	–	–	–

■ NOTES:

1. A Default variation refers to the variation responded when variation 0 is requested and/or in class 0, 1, 2, or 3 scans.
2. For static (non-change-event) objects, qualifiers 17 or 28 are only responded when a request is sent with qualifiers 17 or 28, respectively. Otherwise, static object requests sent with qualifiers 00, 01, 06, 07, or 08, will be responded with qualifiers 00 or 01. (For change-event objects, qualifiers 17 or 28 are always responded except for object 70 which responds with qualifier 1b or 5b.)
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Table 2 – Implementation (3 of 3)

BINARY INPUT POINTS Static (Steady-State) Object Number: 1 Request Function Codes supported: 1 (read) Static Variation reported when variation 0 requested: 1 (Binary input without status)			
POINT INDEX	NAME /DESCRIPTION	OBJECT / VARIATION	STATIC CLASS
0	Input status bit 0 input 1(52b)	1 / 2	0
1	Input status bit 1	1 / 2	0
2	Input status bit 2	1 / 2	0
3	Input status bit 3	1 / 2	0
4	Input status bit 4	1 / 2	0
5	Input status bit 5	1 / 2	0
6	Bit 6 NA	1 / 2	0
7	Bit 7 NA	1 / 2	0
8	Input status Ext In 7	1 / 2	0
9	Input status Ext In 8	1 / 2	0
10	Input status Ext In 9	1 / 2	0
11	Input status Ext In 10	1 / 2	0
12	Input status Ext In 11	1 / 2	0
13	Input status Ext In 12	1 / 2	0
14	Input status Ext In 13	1 / 2	0
15	Input status Ext In 14	1 / 2	0
16	Input status Ext In 15	–	–
17	Input status Ext In 16	–	–
18	Input status Ext In 17	–	–
19	Input status Ext In 18	–	–
20	Not used	–	–
21	Not used	–	–
22	Not used	–	–
23	Not used	–	–
24-39	Output status Bit 0 Out 1 Bit 8 Out 9 Bit 1 Out 2 Bit 9 Out 10 Bit 2 Out 3 Bit 10 Out 11 Bit 3 Out 4 Bit 11 Out 12 Bit 4 Out 5 Bit 12 Out 13 Bit 5 Out 6 Bit 13 Out 14 Bit 6 Out 7 Bit 14 Out 15 Bit 7 Out 8 Bit 15 Out 16	–	–

Table 3 – Binary Input Points (1 of 4)

BINARY INPUT POINTS Static (Steady-State) Object Number: 1 Request Function Codes supported: 1 (read) Static Variation reported when variation 0 requested: 1 (Binary input without status)			
POINT INDEX	NAME /DESCRIPTION	OBJECT / VARIATION	STATIC CLASS
Front panel LED status			
40	Time sync	1 / 2	0
41	Breaker closed	1 / 2	0
42	Osc triggered	1 / 2	0
43	Target	1 / 2	0
44-47	Not used	–	–
48-63	Function status (picked up) Least significant word [0] Bit 0 F24DT_1 Bit 8 F49 Bit 1 F24DT_2 Bit 9 F50_W1_1 Bit 2 F24IT Bit 10 F50_W1_2 Bit 3 F27_1 Bit 11 F50_W2_1 Bit 4 F46DT_W2 Bit 12 F50_W2_2 Bit 5 F46IT_W2 Bit 13 F50_W3_1 Bit 6 F46DT_W3 Bit 14 F50_W3_2 Bit 7 F46IT_W3 Bit 15 F50BF_W1	–	–
64-79	Function status (picked up) Next significant word [1] Bit 0 F50BF_W2 Bit 8 F50N_W2_1 Bit 1 F50BF_W3 Bit 9 F50N_W2_2 Bit 2 F50G_W2_1 Bit 10 F50N_W3_1 Bit 3 F50G_W2_2 Bit 11 F50N_W3_2 Bit 4 F50G_W3_1 Bit 12 F51_W1 Bit 5 F50G_W3_2 Bit 13 F51_W2 Bit 6 F50N_W1_1 Bit 14 F51_W3 Bit 7 F50N_W1_2 Bit 15 F51G_W2	1 / 2	0
80-95	Function status (picked up) Next significant word [2] Bit 0 F51G_W3 Bit 8 F81_3 Bit 1 F51N_W1 Bit 9 F81_4 Bit 2 F51N_W2 Bit 10 F87H Bit 3 F51N_W3 Bit 11 F87T Bit 4 F59_1 Bit 12 F87GD_W2_1 Bit 5 F59_2 Bit 13 F87GD_W2_2 Bit 6 F81_1 Bit 14 F87GD_W3_1 Bit 7 F81_2 Bit 15 F87GD_W3_2	1 / 2	0

Table 3 – Binary Input Points (2 of 4)

BINARY INPUT POINTS Static (Steady-State) Object Number: 1 Request Function Codes supported: 1 (read) Static Variation reported when variation 0 requested: 1 (Binary input without status)			
POINT INDEX	NAME /DESCRIPTION	OBJECT / VARIATION	STATIC CLASS
96-111	Function status (picked up) Next significant word [3] Bit 0 FTHFLT Bit 8 FBRKR_MON_W1 Bit 1 FTCM Bit 9 FBRKR_MON_W2 Bit 2 FEXT_1 Bit 10 FBRKR_MON_W3 Bit 3 FEXT_2 Bit 11 F27_2 Bit 4 FEXT_3 Bit 12 F27_3 Bit 5 FEXT_4 Bit 13 F59_3 Bit 6 FEXT_5 Bit 14 F59X_1 Bit 7 FEXT_6 Bit 15 F59X_2	1 / 2	0
112-119	Function status (picked up) Most (last) significant byte [4] Bit 0 F59X_3 Bit 1 TCM2 Bit 2 CCM1 Bit 3 CCM2 Bits 4-7 not used	1 / 2	0
120-135	Function status (timed out) Least significant word [0] Bit 0 F24DT_1 Bit 8 F49 Bit 1 F24DT_2 Bit 9 F50_W1_1 Bit 2 F24IT Bit 10 F50_W1_2 Bit 3 F27_1 Bit 11 F50_W2_1 Bit 4 F46DT_W2 Bit 12 F50_W2_2 Bit 5 F46IT_W2 Bit 13 F50_W3_1 Bit 6 F46DT_W3 Bit 14 F50_W3_2 Bit 7 F46IT_W3 Bit 15 F50BF_W1	1 / 2	0
136-151	Function status (timed out) Next significant word [1] Bit 0 F50BF_W2 Bit 8 F50N_W2_1 Bit 1 F50BF_W3 Bit 9 F50N_W2_2 Bit 2 F50G_W2_1 Bit 10 F50N_W3_1 Bit 3 F50G_W2_2 Bit 11 F50N_W3_2 Bit 4 F50G_W3_1 Bit 12 F51_W1 Bit 5 F50G_W3_2 Bit 13 F51_W2 Bit 6 F50N_W1_1 Bit 14 F51_W3 Bit 7 F50N_W1_2 Bit 15 F51G_W2	1 / 2	0
152-167	Function status (timed out) Next significant word [2] Bit 0 F51G_W3 Bit 8 F81_3 Bit 1 F51N_W1 Bit 9 F81_4 Bit 2 F51N_W2 Bit 10 F87H Bit 3 F51N_W3 Bit 11 F87T Bit 4 F59_1 Bit 12 F87GD_W2_1 Bit 5 F59_2 Bit 13 F87GD_W2_2 Bit 6 F81_1 Bit 14 F87GD_W3_1 Bit 7 F81_2 Bit 15 F87GD_W3_2	1 / 2	0

Table 3 – Binary Input Points (3 of 4)

BINARY INPUT POINTS Static (Steady-State) Object Number: 1 Request Function Codes supported: 1 (read) Static Variation reported when variation 0 requested: 1 (Binary input without status)			
POINT INDEX	NAME /DESCRIPTION	OBJECT / VARIATION	STATIC CLASS
168-183	Function status (timed out) Next significant word [3] Bit 0 FTHFLT Bit 8 FBRKR_MON_W1 Bit 1 FTCM Bit 9 FBRKR_MON_W2 Bit 2 FEXT_1 Bit 10 FBRKR_MON_W3 Bit 3 FEXT_2 Bit 11 F27_2 Bit 4 FEXT_3 Bit 12 F27_3 Bit 5 FEXT_4 Bit 13 F59_3 Bit 6 FEXT_5 Bit 14 F59X_1 Bit 7 FEXT_6 Bit 15 F59X_2	1 / 2	0
184-191	Function status (time out) Most (last) significant bit [4] Bit 0 F59X_3 Bit 1 TCM2 Bit 2 CCM1 Bit 3 CCM2 Bits 4-7 not used	1 / 2	0

Table 3 – Binary Input Points (4 of 4)

BINARY OUTPUT STATUS POINTS Object Number: 10 Request Function Codes supported: 1 (read) Default Variation reported when variation 0 requested: 2 (Binary Output Status)			
CONTROL RELAY OUTPUT BLOCKS Object Number: 12 Request Function Code supported: 3, 4, 5, 6			
POINT INDEX	NAME / DESCRIPTION	OBJECT / VARIATION (READ)	OBJECT / VARIATION (WRITE)
0-7	24DT #1 Volts Per Hertz Inputs/Blocking Bit 0 In 1 Bit 1 In 2 Bit 2 In 3 Bit 3 In 4 Bit 4 In 5 Bit 5 In 6 Bit 6 Not used Bit 7 Function Enable Writing 0 disables function, at least one OUT must be selected to enable function	—	—
0	In 1	10/2	12/1
1	In 2	10/2	12/1
2	In 3	10/2	12/1
3	In 4	10/2	12/1
4	In 5	10/2	12/1
5	In 6	10/2	12/1
6	Not used	10/2	12/1
7	Function Enable	10/2	12/1
8-23	24DT #1 Volts Per Hertz Ext. Inputs Bit 0 In 7 Bit 8 In 15 Bit 1 In 8 Bit 9 In 16 Bit 2 In 9 Bit 10 In 17 Bit 3 In 10 Bit 11 In 18 Bit 4 In 11 Bit 12 Not used Bit 5 In 12 Bit 13 Not used Bit 6 In 13 Bit 14 Not used Bit 7 In 14 Bit 15 Not used	10/2	12/1
8	In 7	10/2	12/1
9	In 8	10/2	12/1
10	In 9	10/2	12/1
11	In 10	10/2	12/1
12	In 11	10/2	12/1
13	In 12	—	—

Table 4 – Binary Output Status Points / Control Relay Output Blocks (1 of 4)

BINARY OUTPUT STATUS POINTS Object Number: 10 Request Function Codes supported: 1 (read) Default Variation reported when variation 0 requested: 2 (Binary Output Status)			
CONTROL RELAY OUTPUT BLOCKS Object Number: 12 Request Function Code supported: 3, 4, 5, 6			
POINT INDEX	NAME / DESCRIPTION	OBJECT / VARIATION (READ)	OBJECT / VARIATION (WRITE)
14	In 13	10/2	12/1
15	In 14	–	–
16	In 15	–	–
17	In 16	–	–
18	In 17	–	–
19	In 18	–	–
20-23	Not used	–	–
24-39	24DT #1 Volts Per Hertz Outputs Bit 0 Out 1 Bit 8 Out 9 Bit 1 Out 2 Bit 9 Out 10 Bit 2 Out 3 Bit 10 Out 11 Bit 3 Out 4 Bit 11 Out 12 Bit 4 Out 5 Bit 12 Out 13 Bit 5 Out 6 Bit 13 Out 14 Bit 6 Out 7 Bit 14 Out 15 Bit 7 Out 8 Bit 15 Out 16	–	–
40-79	24DT #2 Volts Per Hertz (See Points 0-39)	10/2	12/1
80-119	24IT Volts Per Hertz (See Points 0-39)	10/2	12/1
120-159	27 #1 Phase Under voltage (See Points 0-39)	10/2	12/1
160-199	27 #2 Phase Under voltage (See Points 0-39)	10/2	12/1
200-239	27 #3 Phase Under voltage (See Points 0-39)	10/2	12/1
240-279	46 DTW2 Negative Sequence current (See Points 0-39)	10/2	12/1
280-319	46 ITW2 Negative Sequence current (See Points 0-39)	10/2	12/1
320-359	46 DTW3 Negative Sequence current (See Points 0-39)	10/2	12/1
360-399	46 ITW3 Negative Sequence current (See Points 0-39)	10/2	12/1
400-439	49 Thermal Overcurrent inputs	10/2	12/1
440-479	50W1 #1 Inst Phase Overcurrent (See Points 0-39)	10/2	12/1
480-519	50W1 #2 Inst Phase Overcurrent (See Points 0-39)	10/2	12/1
520-559	50W2 #1 Inst Phase Overcurrent (See Points 0-39)	10/2	12/1
560-599	50W2 #2 Inst Phase Overcurrent (See Points 0-39)	10/2	12/1

Table 4 – Binary Output Status Points / Control Relay Output Blocks (2 of 4)

BINARY OUTPUT STATUS POINTS Object Number: 10 Request Function Codes supported: 1 (read) Default Variation reported when variation 0 requested: 2 (Binary Output Status)			
CONTROL RELAY OUTPUT BLOCKS Object Number: 12 Request Function Code supported: 3, 4, 5, 6			
POINT INDEX	NAME / DESCRIPTION	OBJECT / VARIATION (READ)	OBJECT / VARIATION (WRITE)
600-639	50W3 #1 Inst Phase Overcurrent (See Points 0-39)	10/2	12/1
640-679	50W3 #2 Inst Phase Overcurrent (See Points 0-39)	10/2	12/1
680-719	50GW2 #1 Inst. Overcurrent (See Points 0-39)	10/2	12/1
720-759	50GW2 #2 Inst. Overcurrent (See Points 0-39)	10/2	12/1
760-799	50GW3 #1 Inst. Overcurrent (See Points 0-39)	10/2	12/1
800-839	50GW3 #2 Inst. Overcurrent (See Points 0-39)	10/2	12/1
840-879	50BFW1 Breaker Failure (See Points 0-39)	10/2	12/1
880-919	50BFW2 Breaker Failure (See Points 0-39)	10/2	12/1
920-959	50BFW3 Input Initiation (See Points 0-39)	10/2	12/1
960-999	51W1 Inverse Time Overcurrent inputs (See Points 0-39)	10/2	12/1
1000-1039	51W2 Inverse Time Overcurrent inputs (See Points 0-39)	10/2	12/1
1040-1079	51W3 Inverse Time Overcurrent inputs (See Points 0-39)	10/2	12/1
1080-1119	51NW1 Inverse Residual Time inputs (See Points 0-39)	10/2	12/1
1120-1159	51NW2 Inverse Residual Time inputs (See Points 0-39)	10/2	12/1
1160-1199	51NW3 Inverse Residual Time inputs (See Points 0-39)	10/2	12/1
1200-1239	51GW2 Inverse Ground Time Overcurrent inputs (See Points 0-39)	10/2	12/1
1240-1279	51GW3 Inverse Ground Time Overcurrent inputs (See Points 0-39)	10/2	12/1
1280-1319	59#1 Phase Overvoltage inputs (See Points 0-39)	10/2	12/1
1320-1359	59#2 Phase Overvoltage inputs (See Points 0-39)	10/2	12/1
1360-1399	59#3 Phase Overvoltage inputs (See Points 0-39)	10/2	12/1
1400-1439	59X#1 VX Overvoltage inputs (See Points 0-39)	10/2	12/1
1440-1479	59X#2 VX Overvoltage inputs (See Points 0-39)	10/2	12/1
1480-1519	59X#3 VX Overvoltage inputs (See Points 0-39)	10/2	12/1
1520-1559	81 #1 Underfrequency inputs (See Points 0-39)	10/2	12/1
1560-1599	81 #2 Underfrequency inputs (See Points 0-39)	10/2	12/1
1600-1639	81 #3 Underfrequency inputs (See Points 0-39)	10/2	12/1
1640-1679	81 #4 Underfrequency inputs (See Points 0-39)	10/2	12/1

Table 4 – Binary Output Status Points / Control Relay Output Blocks (3 of 4)

BINARY OUTPUT STATUS POINTS Object Number: 10 Request Function Codes supported: 1 (read) Default Variation reported when variation 0 requested: 2 (Binary Output Status)			
CONTROL RELAY OUTPUT BLOCKS Object Number: 12 Request Function Code supported: 3, 4, 5, 6			
POINT INDEX	NAME / DESCRIPTION	OBJECT / VARIATION (READ)	OBJECT / VARIATION (WRITE)
1680-1719	87H Phase differential (See Points 0-39)	10/2	12/1
1720-1759	87T High Set Phase differential (See Points 0-39)	10/2	12/1
1760-1799	87GDW2 #1 Ground differential (See Points 0-39)	10/2	12/1
1800-1839	87GDW2 #2 Ground differential (See Points 0-39)	10/2	12/1
1840-1879	87GDW3 #1 Ground differential (See Points 0-39)	10/2	12/1
1880-1919	87GDW3 #2 Ground differential (See Points 0-39)	10/2	12/1
1920-1959	EXT #1 External (See Points 0-39)	10/2	12/1
1960-1999	EXT #2 External (See Points 0-39)	10/2	12/1
2000-2039	EXT #3 External (See Points 0-39)	10/2	12/1
2040-2079	EXT #4 External (See Points 0-39)	10/2	12/1
2080-2119	EXT #5 External (See Points 0-39)	10/2	12/1
2120-2159	EXT #6 External (See Points 0-39)	10/2	12/1
2160-2199	50NW1 #1 Inst. Neutral overcurrent (See Points 0-39)	10/2	12/1
2200-2239	50NW1 #2 Inst. Neutral overcurrent (See Points 0-39)	10/2	12/1
2240-2279	50NW2 #1 Inst. Neutral overcurrent (See Points 0-39)	10/2	12/1
2280-2319	50NW2 #2 Inst. Neutral overcurrent (See Points 0-39)	10/2	12/1
2320-2359	50NW3 #1 Inst. Neutral overcurrent (See Points 0-39)	10/2	12/1
2360-2399	50NW3 #2 Inst. Neutral overcurrent (See Points 0-39)	10/2	12/1
2400-2439	BRKRW1 Breaker Monitoring (See Points 0-39)	10/2	12/1
2440-2479	BRKRW2 Breaker Monitoring (See Points 0-39)	10/2	12/1
2480-2519	BRKRW3 Breaker Monitoring (See Points 0-39)	10/2	12/1
2520-2559	THFLT Through Fault Alarm (See Points 0-39)	10/2	12/1
2560-2599	TCM1 Trip Circuit Monitor (See Points 0-39)	10/2	12/1
2600-2639	TCM2 Trip Circuit Monitor (See Points 0-39)	10/2	12/1
2640-2679	CCM1 Close Circuit Monitor (See Points 0-39)	10/2	12/1
2680-2719	CCM2 Close Circuit Monitor (See Points 0-39)	10/2	12/1

Table 4 – Binary Output Status Points / Control Relay Output Blocks (4 of 4)

ANALOG INPUTS						
Static (Steady-State) Object Number: 30						
Request Function Codes supported: 1 (read)						
Static Variation reported when variation 0 requested: 2 (16-Bit Analog Input)						
POINT INDEX	DESCRIPTION	STATIC CLASS	OBJECT/ VARIATION	UNITS	SCALE FACTOR	DEADBAND
0	Phase A Voltage	0	30/02	VOLTS	10	0.1 V – 100 V
1	Phase B Voltage	0	30/02	VOLTS	10	0.1 V – 100 V
2	Phase C Voltage	0	30/02	VOLTS	10	0.1 V – 100 V
3	VX Voltage	0	30/02	VOLTS	10	0.1 V – 100 V
4	Pos. Seq. Voltage	0	30/02	VOLTS	10	–
5	Neg. Seq. Voltage	0	30/02	VOLTS	10	–
6	Zero Seq. Voltage	0	30/02	VOLTS	10	–
7	W1 Phase A current	0	30/02	AMPS	1000	0.1 A – 10 A
8	W1 Phase B current	0	30/02	AMPS	1000	0.1 A – 10 A
9	W1 Phase C current	0	30/02	AMPS	1000	0.1 A – 10 A
10	W2 Phase A current	0	30/02	AMPS	1000	0.1 A – 10 A
11	W2 Phase B current	0	30/02	AMPS	1000	0.1 A – 10 A
12	W2 Phase C current	0	30/02	AMPS	1000	0.1 A – 10 A
13	W2 Phase G current	0	30/02	AMPS	1000	0.1 A – 10 A
14	W3 Phase A current	0	30/02	AMPS	1000	0.1 A – 10 A
15	W3 Phase B current	0	30/02	AMPS	1000	0.1 A – 10 A
16	W3 Phase C current	0	30/02	AMPS	1000	0.1 A – 10 A
17	W3 Phase G current	0	30/02	AMPS	1000	0.1 A – 10 A
18	Future use	–	–	–	–	–
19	Future use	–	–	–	–	–
20	Future use	–	–	–	–	–
21	Future use	–	–	–	–	–
22	Frequency	0	30/02	AMPS	100	0.01 Hz – 5.00 Hz
23	W1 Phase A current demand	0	30/02	AMPS	1000	0.1 A – 10 A
24	W1 Phase B current demand	–	–	–	–	0.1 A – 10 A
25	W1 Phase C current demand	0	30/02	AMPS	1000	0.1 A – 10 A
26	W2 Phase A current demand	0	30/02	AMPS	1000	0.1 A – 10 A
27	W2 Phase B current demand	0	30/02	AMPS	1000	0.1 A – 10 A
28	W2 Phase C current demand	0	30/02	AMPS	1000	0.1 A – 10 A

Table 5 – Analog Inputs (1 of 2)

ANALOG INPUTS						
Static (Steady-State) Object Number: 30						
Request Function Codes supported: 1 (read)						
Static Variation reported when variation 0 requested: 2 (16-Bit Analog Input)						
POINT INDEX	DESCRIPTION	STATIC CLASS	OBJECT/ VARIATION	UNITS	SCALE FACTOR	DEADBAND
29	W2 Phase G current demand	0	30/02	AMPS	1000	0.1 A – 10 A
30	W3 Phase A current demand	0	30/02	AMPS	1000	0.1 A – 10 A
31	W3 Phase B current demand	0	30/02	AMPS	1000	0.1 A – 10 A
32	W3 Phase C current demand	0	30/02	AMPS	1000	0.1 A – 10 A
33	Future use	–	–	–	–	–

Table 5 – Analog Inputs (2 of 2)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
00	1	%	100-200 / 1	24DT #1 Pickup
01	1	CYCLES	30-8160 / 1	24DT #1 Time Delay
02	1	%	100-200 / 1	24DT #2 Pickup
03	1	CYCLES	30-8160 / 1	24DT #2 Time Delay
04	1	%	100-150 / 1	24IT Pickup
05	1	–	1-4 / 1	24IT Curve **
06	10	–	if curve = 1 10-1000 / 10 if curve = 2, 3, 4 0-90 / 1	24IT Time Dial **
07	1	SEC	1-999 / 1	24IT Reset Rate
08	1	VOLTS	5-140 / 1	27#1 Undervoltage Pickup
09	1	–	0-1 / 1	27#1 Undervoltage Inhibit 0 = Disable 1 = Enable
10	1	VOLTS	5-140 / 1	27#1 Undervoltage Inhibit
11	1	CYCLES	1-8160 / 1	27#1 Time Delay
12	1	VOLTS	5-140 / 1	27#2 Undervoltage Pickup
13	1	–	0-1 / 1	27#2 Undervoltage Inhibit 0 = Disable 1 = Enable
14	1	VOLTS	5-140 / 1	27#2 Undervoltage Inhibit
15	1	CYCLES	1-8160 / 1	27#2 Time Delay
16	1	VOLTS	5-140 / 1	27#3 Undervoltage Pickup
17	1	–	0-1 / 1	27#3 Undervoltage Inhibit 0 = Disable 1 = Enable
18	1	VOLTS	5-140 / 1	27#3 Undervoltage Inhibit
19	1	CYCLES	1-8160 / 1	27#3 Time Delay
20	–	–	–	Not used
21	–	–	–	Not used
22	–	–	–	Not used

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (1 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
23				Not used
24				Not used
25				Not used
26				Not used
27				Not used
28				Not used
29				Not used
30				Not used
31				Not used
32				Not used
33	100	AMPS	if C.T. secondary rating = 5 Amp 10-2000 / 1 if C.T. secondary rating = 1 Amp 2-400 / 1	46DTW2 Pickup
34	1	CYCLES	1-8160 / 1	46DTW2 Time Delay
35	100	AMPS	if C.T. secondary rating = 5 Amp 50-500 / 1 if C.T. secondary rating = 1 Amp 10-100 / 1	46ITW2 Pickup
36	1		1-11 / 1	46ITW2 Curve type ** 1 = Beco Definite time 2 = Beco Inverse 3 = Beco Very Inverse 4 = Beco Extremely Inverse 5 = IEC Inverse 6 = IEC Very Inverse 7 = IEC Extremely Inverse 8 = IEC Long time Inverse 9 = IEEE Moderately Inverse 10 = IEEE Very Inverse 11 = IEEE Extremely Inverse

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (2 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
37	100		if curve = 1 to 4 50-1100 / 10 if curve = 5 to 8 5-110 / 1 if curve = 9 to 11 50-1500 / 10	46ITW2 Time Dial **
38	100	AMPS	if C.T. secondary rating = 5 Amp 10-2000 / 1 if C.T. secondary rating = 1 Amp 2-400 / 1	46DTW3 Pickup
39	1	CYCLES	1-8160 / 1	46DTW3 Time Delay
40	100	AMPS	if C.T. secondary rating = 5 Amp 50-500 / 1 if C.T. secondary rating = 1 Amp 10-100 / 1	46ITW3 Pickup
41	1		1-11 / 1	46ITW3 Curve type ** 1 = Beco Definite time 2 = Beco Inverse 3 = Beco Very Inverse 4 = Beco Extremely Inverse 5 = IEC Inverse 6 = IEC Very Inverse 7 = IEC Extremely Inverse 8 = IEC Long time Inverse 9 = IEEE Moderately Inverse 10 = IEEE Very Inverse 11 = IEEE Extremely Inverse
42	100		if curve = 1 to 4 50-1100 / 10 if curve = 5 to 8 5-110 / 1 if curve = 9 to 11 50-1500 / 10	46ITW3 Time Dial **

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (3 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
43	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50 #1 Pickup
44	1	CYCLES	1-8160 / 1	50W1 #1 Time Delay
45	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50 #2 Pickup
46	1	CYCLES	1-8160 / 1	50 #2 Time Delay
47	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50 #3 Pickup
48	1	CYCLES	1-8160 / 1	50 #3 Time Delay
49	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50 #4 Pickup
50	1	CYCLES	1-8160 / 1	50 #4 Time Delay
51	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50 #5 Pickup
52	1	CYCLES	1-8160 / 1	50 #5 Time Delay

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (4 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
53	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50 #6 Pickup
54	1	CYCLES	1-8160 / 1	50 #6 Time Delay
55	1		0-4 / 1	F50 #1 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
56	1		0-4 / 1	F50 #2 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
57	1		0-4 / 1	F50 #3 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
58	1		0-4 / 1	F50 #4 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
59	1		0-4 / 1	F50 #5 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (5 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
60	1		0-4 / 1	F50 #6 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
61	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50GW2 #1 Pickup
62	1	CYCLES	1-8160 / 1	50GW2 #1 Time Delay
63	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50GW2 #2 Pickup
64	1	CYCLES	1-8160 / 1	50GW2 #2 Time Delay
65	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50GW3 #1 Pickup
66	1	CYCLES	1-8160 / 1	50GW3 #1 Time Delay
67	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50GW3 #2 Pickup
68	1	CYCLES	1-8160 / 1	50GW3 #2 Time Delay
69	100	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50BFW1 Phase Pickup

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (6 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
70	1U		0-255 / 1	50BFW1 Input Initiate Bit 0 Input 1 Bit 1 Input 2 Bit 2 Input 3 Bit 3 Input 4 Bit 4 Input 5 Bit 5 Input 6 Bit 6-15 Not used (0)
71	1U		0-65535 / 1	50BFW1 Input Initiate ext inputs Bit 0 Input 7 Bit 8 Input 15 Bit 1 Input 8 Bit 9 Input 16 Bit 2 Input 9 Bit 10 Input 17 Bit 3 Input 10 Bit 11 Input 18 Bit 4 Input 11 Bit 12 Not used Bit 5 Input 12 Bit 13 Not used Bit 6 Input 13 Bit 14 Not used Bit 7 Input 14 Bit 15 Not used
72	1U		0-65535 / 1	50BFW1 Output Initiate Bit 0 Out 1 Bit 8 Out 9 Bit 1 Out 2 Bit 9 Out 10 Bit 2 Out 3 Bit 10 Out 11 Bit 3 Out 4 Bit 11 Out 12 Bit 4 Out 5 Bit 12 Out 13 Bit 5 Out 6 Bit 13 Out 14 Bit 6 Out 7 Bit 14 Out 15 Bit 7 Out 8 Bit 15 Out 16
73	100	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50BFW1 Residual Pickup
74	1	CYCLES	1-8160 / 1	50BFW1 Time Delay
75	100	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50BFW2 Phase Pickup

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (7 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
76	1U		0-255 / 1	50BFW2 Input Initiate Bit 0 Input 1 Bit 1 Input 2 Bit 2 Input 3 Bit 3 Input 4 Bit 4 Input 5 Bit 5 Input 6 Bit 6-15 Not used (0)
77	1U		0-65535 / 1	50BFW2 Input Initiate ext Inputs Bit 0 Input 7 Bit 8 Input 15 Bit 1 Input 8 Bit 9 Input 16 Bit 2 Input 9 Bit 10 Input 17 Bit 3 Input 10 Bit 11 Input 18 Bit 4 Input 11 Bit 12 Not used Bit 5 Input 12 Bit 13 Not used Bit 6 Input 13 Bit 14 Not used Bit 7 Input 14 Bit 15 Not used
78	1U		0-65535 / 1	50BFW2 Output Initiate Bit 0 Out 1 Bit 8 Out 9 Bit 1 Out 2 Bit 9 Out 10 Bit 2 Out 3 Bit 10 Out 11 Bit 3 Out 4 Bit 11 Out 12 Bit 4 Out 5 Bit 12 Out 13 Bit 5 Out 6 Bit 13 Out 14 Bit 6 Out 7 Bit 14 Out 15 Bit 7 Out 8 Bit 15 Out 16
79	100	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50BFW2 Residual Pickup
80	1	CYCLES	1-8160 / 1	50BFW2 Delay
81	100	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50BFW3 Phase Pickup

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (8 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
82	1U		0-255 / 1	50BFW3 Input Initiate Bit 0 Input 1 Bit 1 Input 2 Bit 2 Input 3 Bit 3 Input 4 Bit 4 Input 5 Bit 5 Input 6 Bit 6-15 Not used (0)
83	1U		0-65535 / 1	50BFW3 Input Initiate ext inputs Bit 0 Input 7 Bit 8 Input 15 Bit 1 Input 8 Bit 9 Input 16 Bit 2 Input 9 Bit 10 Input 17 Bit 3 Input 10 Bit 11 Input 18 Bit 4 Input 11 Bit 12 Not used Bit 5 Input 12 Bit 13 Not used Bit 6 Input 13 Bit 14 Not used Bit 7 Input 14 Bit 15 Not used
84	1U		0-65535 / 1	50BFW3 Output Initiate Bit 0 Out 1 Bit 8 Out 9 Bit 1 Out 2 Bit 9 Out 10 Bit 2 Out 3 Bit 10 Out 11 Bit 3 Out 4 Bit 11 Out 12 Bit 4 Out 5 Bit 12 Out 13 Bit 5 Out 6 Bit 13 Out 14 Bit 6 Out 7 Bit 14 Out 15 Bit 7 Out 8 Bit 15 Out 16
85	100	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50BFW3 Residual Pickup
86	1	CYCLES	1-8160 / 1	50BFW3 Delay
87	100	AMPS	If C.T. secondary rating = 5 Amp 50-1200 / 1 if C.T. secondary rating = 1 Amp 10-240 / 1	51 #1 Pickup

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (9 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
88	1		1-11 / 1	51 #1 Curve Type ** 1 = Beco Definite time 2 = Beco Inverse 3 = Beco Very Inverse 4 = Beco Extremely Inverse 5 = IEC Inverse 6 = IEC Very Inverse 7 = IEC Extremely Inverse 8 = IEC Long time Inverse 9 = IEEE Moderately Inverse 10 = IEEE Very Inverse 11 = IEEE Extremely Inverse
89	100		if curve = 1 to 4 50-1100 / 10 if curve = 5 to 8 5-110 / 1 if curve = 9 to 11 50-1500 / 10	51 #1 Time Dial **
90	100	AMPS	If C.T. secondary rating = 5 Amp 50-1200 / 1 if C.T. secondary rating = 1 Amp 10-240 / 1	51 #2 Pickup
91	1		1-11 / 1	51 #2 Curve Type ** 1 = Beco Definite time 2 = Beco Inverse 3 = Beco Very Inverse 4 = Beco Extremely Inverse 5 = IEC Inverse 6 = IEC Very Inverse 7 = IEC Extremely Inverse 8 = IEC Long time Inverse 9 = IEEE Moderately Inverse 10 = IEEE Very Inverse 11 = IEEE Extremely Inverse
92	100		if curve = 1 to 4 50-1100 / 10 if curve = 5 to 8 5-110 / 1 if curve = 9 to 11 50-1500 / 10	51 #2 Time Dial **

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (10 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
93	100	AMPS	If C.T. secondary rating = 5 Amp 50-1200 / 1 if C.T. secondary rating = 1 Amp 10-240 / 1	51 #3 Pickup
94	1		1-11 / 1	51 #3 Curve Type ** 1 = Beco Definite time 2 = Beco Inverse 3 = Beco Very Inverse 4 = Beco Extremely Inverse 5 = IEC Inverse 6 = IEC Very Inverse 7 = IEC Extremely Inverse 8 = IEC Long time Inverse 9 = IEEE Moderately Inverse 10 = IEEE Very Inverse 11 = IEEE Extremely Inverse
95	100		if curve = 1 to 4 50-1100 / 10 if curve = 5 to 8 5-110 / 1 if curve = 9 to 11 50-1500 / 10	51 #3 Time Dial **
96	1		0-4 / 1	F51 #1 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
97	1		0-4 / 1	F51 #2 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
98	1		0-4 / 1	F51 #3 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (11 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
99	100	AMPS	if C.T. secondary rating = 5 Amp 50-600 / 1 if C.T. secondary rating = 1 Amp 10-120 / 1	51N #1 Pickup
100	1		1-11 / 1	51N #1 Curve Type ** 1 = Beco Definite time 2 = Beco Inverse 3 = Beco Very Inverse 4 = Beco Extremely Inverse 5 = IEC Inverse 6 = IEC Very Inverse 7 = IEC Extremely Inverse 8 = IEC Long time Inverse 9 = IEEE Moderately Inverse 10 = IEEE Very Inverse 11 = IEEE Extremely Inverse
101	100		if curve = 1 to 4 50-1100 / 10 if curve = 5 to 8 5-110 / 1 if curve = 9 to 11 50-1500 / 10	51N #1 Time Dial **
102	100	AMPS	if C.T. secondary rating = 5 Amp 50-600 / 1 if C.T. secondary rating = 1 Amp 10-120 / 1	51N #2 Pickup
103	1		1-11 / 1	51N #2 Curve Type ** 1 = Beco Definite time 2 = Beco Inverse 3 = Beco Very Inverse 4 = Beco Extremely Inverse 5 = IEC Inverse 6 = IEC Very Inverse 7 = IEC Extremely Inverse 8 = IEC Long time Inverse 9 = IEEE Moderately Inverse 10 = IEEE Very Inverse 11 = IEEE Extremely Inverse

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (12 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
104	100		if curve = 1 to 4 50-1100 / 10 if curve = 5 to 8 5-110 / 1 if curve = 9 to 11 50-1500 / 10	51N #2 Time Dial **
105	100	AMPS	if C.T. secondary rating = 5 Amp 50-600 / 1 if C.T. secondary rating = 1 Amp 10-120 / 1	51N #3 Pickup
106	1		1-11 / 1	51N #3 Curve Type ** 1 = Beco Definite time 2 = Beco Inverse 3 = Beco Very Inverse 4 = Beco Extremely Inverse 5 = IEC Inverse 6 = IEC Very Inverse 7 = IEC Extremely Inverse 8 = IEC Long time Inverse 9 = IEEE Moderately Inverse 10 = IEEE Very Inverse 11 = IEEE Extremely Inverse
107	100		if curve = 1 to 4 50-1100 / 10 if curve = 5 to 8 5-110 / 1 if curve = 9 to 11 50-1500 / 10	51N #3 Time Dial **
108	1		0-4 / 1	F51N #1 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
109	1		0-4 / 1	F51N #2 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (13 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
110	1		0-4 / 1	F51N #3 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
111	100	AMPS	If C.T. secondary rating = 5 Amp 50-1200 / 1 if C.T. secondary rating = 1 Amp 10-240 / 1	51GW2 Pickup
112	1		1-11 / 1	51GW2 Curve Type ** 1 = Beco Definite time 2 = Beco Inverse 3 = Beco Very Inverse 4 = Beco Extremely Inverse 5 = IEC Inverse 6 = IEC Very Inverse 7 = IEC Extremely Inverse 8 = IEC Long time Inverse 9 = IEEE Moderately Inverse 10 = IEEE Very Inverse 11 = IEEE Extremely Inverse
113	100		if curve = 1 to 4 50-1100 / 10 if curve = 5 to 8 5-110 / 1 if curve = 9 to 11 50-1500 / 10	51GW2 Time Dial **
114	100	AMPS	If C.T. secondary rating = 5 Amp 50-1200 / 1 if C.T. secondary rating = 1 Amp 10-240 / 1	51GW3 Pickup

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (14 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
115	1		1-11 / 1	51GW3 Curve Type ** 1 = Beco Definite time 2 = Beco Inverse 3 = Beco Very Inverse 4 = Beco Extremely Inverse 5 = IEC Inverse 6 = IEC Very Inverse 7 = IEC Extremely Inverse 8 = IEC Long time Inverse 9 = IEEE Moderately Inverse 10 = IEEE Very Inverse 11 = IEEE Extremely Inverse
116	100		if curve = 1 to 4 50-1100 / 10 if curve = 5 to 8 5-110 / 1 if curve = 9 to 11 50-1500 / 10	51GW3 Time Dial **
117	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50N #1 Pickup
118	1	CYCLES	1-8160 / 1	50N #1 Time Delay
119	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50N #2 Pickup
120	1	CYCLES	1-8160 / 1	50N #2 Time Delay
121	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50N #3 Pickup
122	1	CYCLES	1-8160 / 1	50N #3 Time Delay

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (15 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
123	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50N #4 Pickup
124	1	CYCLES	1-8160 / 1	50N #4 Time Delay
125	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50N #5 Pickup
126	1	CYCLES	1-8160 / 1	50N #5 Time Delay
127	10	AMPS	If C.T. secondary rating = 5 Amp 10-1000 / 1 if C.T. secondary rating = 1 Amp 2-200 / 1	50N #6 Pickup
128	1	CYCLES	1-8160 / 1	50N #6 Time Delay
129	1		0-4 / 1	F50N #1 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
130	1		0-4 / 1	F50N #2 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
131	1		0-4 / 1	F50N #3 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (16 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
132	1		0-4 / 1	F50N #4 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
133	1		0-4 / 1	F50N #5 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
134	1		0-4 / 1	F50N #6 Winding config 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
135	1	VOLTS	5-180 / 1	59 #1 Pickup
136	1	CYCLES	1-8160 / 1	59 #1 Delay
137	1	VOLTS	5-180 / 1	59 #2 Pickup
138	1	CYCLES	1-8160 / 1	59 #2 Delay
139	1	VOLTS	5-180 / 1	59 #3 Pickup
140	1	CYCLES	1-8160 / 1	59 #3 Delay
141	1		0-63 / 1	59 Input Voltage Select Bit 0 = 59 #1 element Bit 1 = 59 #2 element Bit 2 = 59 #3 element 0 = phase voltage select 1 = pos. seq. voltage select Bit 3 = 59 #1 element Bit 4 = 59 #2 element Bit 5 = 59 #3 element 0 = phase or pos. seq select 1 = neg. seq. voltage select
142	1	VOLTS	5-180 / 1	59X #1 Pickup
143	1	CYCLES	1-8160 / 1	59X #1 Delay

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (17 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
144	1	VOLTS	5-180 / 1	59X #2 Pickup
145	1	CYCLES	1-8160 / 1	59X #2 Delay
146	1	VOLTS	5-180 / 1	59X #3 Pickup
147	1	CYCLES	1-8160 / 1	59X #3 Delay
148	100	HZ	if nominal frequency = 60 Hz 5500-6500 / 1 if nominal frequency = 50 Hz 4500-5500 / 1	81 #1 Pickup For 60 Hz nominal freq. 6000 pickup value excluded. For 50 Hz nominal freq. 5000 pickup value excluded.
149	1	CYCLES	2-65500 / 1	81 #1 Time Delay
150	100	HZ	if nominal frequency = 60 Hz 5500-6500 / 1 if nominal frequency = 50 Hz 4500-5500 / 1	81 #2 Pickup For 60 Hz nominal freq. 6000 pickup value excluded. For 50 Hz nominal freq. 5000 pickup value excluded.
151	1	CYCLES	2-65500 / 1	81 #2 Time Delay
152	100	HZ	if nominal frequency = 60 Hz 5500-6500 / 1 if nominal frequency = 50 Hz 4500-5500 / 1	81 #3 Pickup For 60 Hz nominal freq. 6000 pickup value excluded. For 50 Hz nominal freq. 5000 pickup value excluded.
153	1	CYCLES	2-65500 / 1	81 #3 Time Delay
154	100	HZ	if nominal frequency = 60 Hz 5500-6500 / 1 if nominal frequency = 50 Hz 4500-5500 / 1	81 #4 Pickup For 60 Hz nominal freq. 6000 pickup value excluded. For 50 Hz nominal freq. 5000 pickup value excluded.
155	1	CYCLES	2-65500 / 1	81 #4 Time Delay
156	100	AMPS	If C.T. secondary rating = 5 Amp 20-1000 / 1 if C.T. secondary rating = 1 Amp 4-200 / 1	87GDW2 #1 Pickup

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (18 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
157	1	CYCLES	1-8160 / 1	87GDW2 #1 Time Delay
158	100	AMPS	If C.T. secondary rating = 5 Amp 20-1000 / 1 if C.T. secondary rating = 1 Amp 4-200 / 1	87GDW2 #2 Pickup
159	1		0-1 / 1	87GDW2 Directional Element enable 0 = disabled 1 = enabled
160	100		10-799 / 1	87GDW2 C.T. Ratio correction
161	1	CYCLES	1-8160 / 1	87GDW2 #2 Time Delay
162	100	AMPS	If C.T. secondary rating = 5 Amp 20-1000 / 1 if C.T. secondary rating = 1 Amp 4-200 / 1	87GDW3 #1 Pickup
163	1	CYCLES	1-8160 / 1	87GDW3 #1 Time Delay
164	100	AMPS	If C.T. secondary rating = 5 Amp 20-1000 / 1 if C.T. secondary rating = 1 Amp 4-200 / 1	87GDW3 #2 Pickup
165	1		0-1 / 1	87GDW3 Directional Element enable 0 = disabled 1 = enabled
166	100		10-799 / 1	87GDW3 C.T. Ratio correction
167	1	CYCLES	1-8160 / 1	87GDW3 #2 Time Delay
168	1		0-2 / 1	F87GD W2 Winding config 0 = summing #1 phase current 1 = summing #2 phase current 2 = single winding phase current
169	1		0-2 / 1	F87GD W3 Winding config 0 = summing #1 phase current 1 = summing #2 phase current 2 = single winding phase current

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (19 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
170	1U		0-255 / 1	IPSLLogic #1 Initiating Inputs Bit 0 Input 1 Bit 1 Input 2 Bit 2 Input 3 Bit 3 Input 4 Bit 4 Input 5 Bit 5 Input 6 Bit 6-15 Not used (0)
171	1U		0-65535 / 1	IPSLLogic #1 Initiating Inputs ext. Bit 0 Input 7 Bit 8 Input 15 Bit 1 Input 8 Bit 9 Input 16 Bit 2 Input 9 Bit 10 Input 17 Bit 3 Input 10 Bit 11 Input 18 Bit 4 Input 11 Bit 12 Not used Bit 5 Input 12 Bit 13 Not used Bit 6 Input 13 Bit 14 Not used Bit 7 Input 14 Bit 15 Not used
172	1U		0-65535 / 1	IPSLLogic #1 Initiating Outputs Bit 0 Output 1 Bit 8 Output 9 Bit 1 Output 2 Bit 9 Output 10 Bit 2 Output 3 Bit 10 Output 11 Bit 3 Output 4 Bit 11 Output 12 Bit 4 Output 5 Bit 12 Output 13 Bit 5 Output 6 Bit 13 Output 14 Bit 6 Output 7 Bit 14 Output 15 Bit 7 Output 8 Bit 15 Output 16
173	1U		0-65535 / 1	IPSLLogic #1 Gate Config Bit 0 Initiating outputs gate Bit 1 Initiating functions trip gate Bit 2 Initiating inputs gate Bit 3 Blocking inputs gate Bit 4 Inputs main gate Bit 5-6 Not used (0) Bit 7 Initiating functions gate NOT element enable/disable Bit 8 Blocking Inputs NOT element enable/disable Bits 9-15 Not used Bits 7-8 = 0 NOT disabled Bits 7-8 = 1 NOT enabled 0 = gate configured for "OR" 1 = gate configured for "AND"

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (20 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
174	1U		0-65535 / 1	IPSLogic #1 Picked up functions initiate mask Least significant word [0] Bit 0 F24DT_1 Bit 8 F49 Bit 1 F24DT_2 Bit 9 F50_W1_1 Bit 2 F24IT Bit 10 F50_W1_2 Bit 3 F27_1 Bit 11 F50_W2_1 Bit 4 F46DT_W2 Bit 12 F50_W2_2 Bit 5 F46IT_W2 Bit 13 F50_W3_1 Bit 6 F46DT_W3 Bit 14 F50_W3_2 Bit 7 F46IT_W3 Bit 15 F50BF_W1
175	1U		0-65535 / 1	IPSLogic #1 Picked up functions initiate mask Next significant word [1] Bit 0 F50BF_W2 Bit 8 F50N_W2_1 Bit 1 F50BF_W3 Bit 9 F50N_W2_2 Bit 2 F50G_W2_1 Bit 10 F50N_W3_1 Bit 3 F50G_W2_2 Bit 11 F50N_W3_2 Bit 4 F50G_W3_1 Bit 12 F51_W1 Bit 5 F50G_W3_2 Bit 13 F51_W2 Bit 6 F50N_W1_1 Bit 14 F51_W3 Bit 7 F50N_W1_2 Bit 15 F51G_W2
176	1U		0-65535 / 1	IPSLogic #1 Picked up functions initiate mask Next significant word [2] Bit 0 F51G_W3 Bit 8 F81_3 Bit 1 F51N_W1 Bit 9 F81_4 Bit 2 F51N_W2 Bit 10 F87H Bit 3 F51N_W3 Bit 11 F87T Bit 4 F59_1 Bit 12 F87GD_W2_1 Bit 5 F59_2 Bit 13 F87GD_W2_2 Bit 6 F81_1 Bit 14 F87GD_W3_1 Bit 7 F81_2 Bit 15 F87GD_W3_2

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (21 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
177	1U		0-65535 / 1	IPSLLogic #1 Picked up functions initiate mask Next significant word [3] Bit 0 FTHFLT Bit 1 FTCM Bit 2 FEXT_1 Bit 3 FEXT_2 Bit 4 FEXT_3 Bit 5 FEXT_4 Bit 6 FEXT_5 Bit 7 FEXT_6 Bit 8 FBRKR_MON_W1 Bit 9 FBRKR_MON_W2 Bit 10 FBRKR_MON_W3 Bit 11 F27_2 Bit 12 F27_3 Bit 13 F59_3 Bit 14 F59X_1 Bit 15 F59X_2
178	1U		0-65535 / 1	IPSLLogic #1 Picked up functions initiate mask Most significant word [4] Bit 0 F59X_3 Bit 1 TCM2 Bit 2 CCM1 Bit 3 CCM2 Bit 4 87H/T Phase A Bit 5 87H/T Phase B Bit 6 87H/T Phase C Bits7-15 not used
179	1U		0-4 / 1	IPSLLogic #1 Profile Switch 0 = not activated 1 = switch to profile 1 2 = switch to profile 2 3 = switch to profile 3 4 = switch to profile 4
180	1U		0-1 / 1	IPSLLogic #1 Initiate via communication
181	1U		0-1 / 1	IPSLLogic #1 Block via communication
182	1	CYCLES	1-65500 / 1	IPSLLogic #1 Time Delay
183	1U		0-255 / 1	IPSLLogic #2 Initiating inputs See 170
184	1U		0-65535 / 1	IPSLLogic #2 Initiating inputs ext. See 171

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (22 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
185	1U		0-65535 / 1	IPSLLogic #2 Initiating outputs See 172
186	1U		0-65535 / 1	IPSLLogic #2 Gate Config See 173
187	1U		0-65535 / 1	IPSLLogic #2 Picked up functions initiate mask Least significant word [0] See 174
188	1U		0-65535 / 1	IPSLLogic #2 Picked up functions initiate mask Next significant word [1] See 175
189	1U		0-65535 / 1	IPSLLogic #2 Picked up functions initiate mask Next significant word [2] See 176
190	1U		0-65535 / 1	IPSLLogic #2 Picked up functions initiate mask Next significant word [3] See 177
191	1U		0-65535 / 1	IPSLLogic #2 Picked up functions initiate mask Most significant word [4] See 178
192	1U		0-4 / 1	IPSLLogic #2 Profile Switch 0 = not activated 1 = switch to profile 1 2 = switch to profile 2 3 = switch to profile 3 4 = switch to profile 4
193	1U		0-1 / 1	IPSLLogic #2 Initiate via communication
194	1U		0-1 / 1	IPSLLogic #2 Block via communication
195	1	CYCLES	1-65500 / 1	IPSLLogic #2 Time Delay
196	1U		0-255 / 1	IPSLLogic #3 Initiating inputs See 170
197	1U		0-65535 / 1	IPSLLogic #3 Initiating inputs ext. See 171
198	1U		0-65535 / 1	IPSLLogic #3 Initiating outputs See 172

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (23 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
199	1U		0-65535 / 1	IPSLogic #3 Gate Config See 173
200	1U		0-65535 / 1	IPSLogic #3 Picked up functions initiate mask Least significant word [0] See 174
201	1U		0-65535 / 1	IPSLogic #3 Picked up functions initiate mask Next significant word [1] See 175
202	1U		0-65535 / 1	IPSLogic #3 Picked up functions initiate mask Next significant word [2] See 176
203	1U		0-65535 / 1	IPSLogic #3 Picked up functions initiate mask Next significant word [3] See 177
204	1U		0-65535 / 1	IPSLogic #3 Picked up functions initiate mask Most significant word [4] See 178
205	1U		0-4 / 1	IPSLogic #3 Profile Switch 0 = not activated 1 = switch to profile 1 2 = switch to profile 2 3 = switch to profile 3 4 = switch to profile 4
206	1U		0-1 / 1	IPSLogic #3 Initiate via communication
207	1U		0-1 / 1	IPSLogic #3 Block via communication
208	1	CYCLES	1-65500 / 1	IPSLogic #3 Time Delay
209	1U		0-255 / 1	IPSLogic #4 Initiating inputs See 170
210	1U		0-65535 / 1	IPSLogic #4 Initiating inputs ext. See 171
211	1U		0-65535 / 1	IPSLogic #4 Initiating outputs See 172
212	1U		0-65535 / 1	IPSLogic #4 Gate Config See 173

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (24 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
213	1U		0-65535 / 1	IPSLLogic #4 Picked up functions initiate mask Least significant word [0] See 174
214	1U		0-65535 / 1	IPSLLogic #4 Picked up functions initiate mask Next significant word [1] See 175
215	1U		0-65535 / 1	IPSLLogic #4 Picked up functions initiate mask Next significant word [2] See 176
216	1U		0-65535 / 1	IPSLLogic #4 Picked up functions initiate mask Next significant word [3] See 177
217	1U		0-65535 / 1	IPSLLogic #4 Picked up functions initiate mask Most significant word [4] See 178
218	1U		0-4 / 1	IPSLLogic #4 Profile Switch 0 = not activated 1 = switch to profile 1 2 = switch to profile 2 3 = switch to profile 3 4 = switch to profile 4
219	1U		0-1 / 1	IPSLLogic #4 Initiate via communication
220	1U		0-1 / 1	IPSLLogic #4 Block via communication
221	1	CYCLES	1-65500 / 1	IPSLLogic #4 Time Delay
222	1U		0-255 / 1	IPSLLogic #5 Initiating inputs See 170
223	1U		0-65535 / 1	IPSLLogic #5 Initiating inputs ext. See 171
224	1U		0-65535 / 1	IPSLLogic #5 Initiating outputs See 172
225	1U		0-65535 / 1	IPSLLogic #5 Gate Config See 173

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (25 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
226	1U		0-65535 / 1	IPSLLogic #5 Picked up functions initiate mask Least significant word [0] See 174
227	1U		0-65535 / 1	IPSLLogic #5 Picked up functions initiate mask Next significant word [1] See 175
228	1U		0-65535 / 1	IPSLLogic #5 Picked up functions initiate mask Next significant word [2] See 176
229	1U		0-65535 / 1	IPSLLogic #5 Picked up functions initiate mask Next significant word [3] See 177
230	1U		0-65535 / 1	IPSLLogic #5 Picked up functions initiate mask Most significant word [4] See 178
231	1U		0-4 / 1	IPSLLogic #5 Profile Switch 0 = not activated 1 = switch to profile 1 2 = switch to profile 2 3 = switch to profile 3 4 = switch to profile 4
232	1U		0-1 / 1	IPSLLogic #5 Initiate via communication
233	1U		0-1 / 1	IPSLLogic #5 Block via communication
234	1	CYCLES	1-65500 / 1	IPSLLogic #5 Time Delay
235	1U		0-255 / 1	IPSLLogic #6 Initiating inputs See 170
236	1U		0-65535 / 1	IPSLLogic #6 Initiating inputs ext. See 171
237	1U		0-65535 / 1	IPSLLogic #6 Initiating outputs See 172
238	1U		0-65535 / 1	IPSLLogic #6 Gate Config See 173

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (26 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
239	1U		0-65535 / 1	IPSLLogic #6 Picked up functions initiate mask Least significant word [0] See 174
240	1U		0-65535 / 1	IPSLLogic #6 Picked up functions initiate mask Next significant word [1] See 175
241	1U		0-65535 / 1	IPSLLogic #6 Picked up functions initiate mask Next significant word [2] See 176
242	1U		0-65535 / 1	IPSLLogic #6 Picked up functions initiate mask Next significant word [3] See 177
243	1U		0-65535 / 1	IPSLLogic #6 Picked up functions initiate mask Most significant word [4] See 178
244	1U		0-4 / 1	IPSLLogic #6 Profile Switch 0 = not activated 1 = switch to profile 1 2 = switch to profile 2 3 = switch to profile 3 4 = switch to profile 4
245	1U		0-1 / 1	IPSLLogic #6 Initiate via communication
246	1U		0-1 / 1	IPSLLogic #6 Block via communication
247	1	CYCLES	1-65500 / 1	IPSLLogic #6 Time Delay
248	1		0-63 / 1	IPS Logic Latch Reset Bit 0 = IPS #1 Bit 1 = IPS #2 Bit 2 = IPS #3 Bit 3 = IPS #4 Bit 4 = IPS #5 Bit 5 = IPS #6
249	1	CYCLES	0-65500 / 1	IPS LOGIC #1 Dropout Delay
250	1	CYCLES	0-65500 / 1	IPS LOGIC #2 Dropout Delay
251	1	CYCLES	0-65500 / 1	IPS LOGIC #3 Dropout Delay

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (27 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
252	1	CYCLES	0-65500 / 1	IPS LOGIC #4 Dropout Delay
253	1	CYCLES	0-65500 / 1	IPS LOGIC #5 Dropout Delay
254	1	CYCLES	0-65500 / 1	IPS LOGIC #6 Dropout Delay
255	1	KAMPS	1-50000 / 1	BM W1 Pickup
256	1U		0-255 / 1	BM W1 Input Initiate Bit 0 Input 1 Bit 1 Input 2 Bit 2 Input 3 Bit 3 Input 4 Bit 4 Input 5 Bit 5 Input 6 Bit 6-7 Not used (0)
257	1U		0-65535 / 1	BM W1 Input Initiate ext. Bit 0 Input 7 Bit 1 Input 8 Bit 2 Input 9 Bit 3 Input 10 Bit 4 Input 11 Bit 5 Input 12 Bit 6 Input 13 Bit 7 Input 14 Bit 8 Input 15 Bit 9 Input 16 Bit 10 Input 17 Bit 11 Input 18 Bit 12 Not used Bit 13 Not used Bit 14 Not used Bit 15 Not used
258	1U		0-65535 / 1	BM W1 Output Initiate Bit 0 Output 1 Bit 1 Output 2 Bit 2 Output 3 Bit 3 Output 4 Bit 4 Output 5 Bit 5 Output 6 Bit 6 Output 7 Bit 7 Output 8 Bit 8 Output 9 Bit 9 Output 10 Bit 10 Output 11 Bit 11 Output 12 Bit 12 Output 13 Bit 13 Output 14 Bit 14 Output 15 Bit 15 Output 16
259	10	CYCLES	1-40959 / 1	BM W1 Time Delay
260	1	KAMPS	1-50000 / 1	BM W2 Pickup
261	1U		0-255 / 1	BM W2 Input Initiate See 256
262	1U		0-65535 / 1	BM W2 Input Initiate ext. See 257
263	1U		0-65535 / 1	BM W2 Output Initiate See 258
264	10	CYCLES	1-40959 / 1	BM W2 Time Delay

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (28 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
265	1	KAMPS	1-50000 / 1	BM W3 Pickup
266	1U		0-255 / 1	BM W3 Input Initiate See 256
267	1U		0-65535 / 1	BM W3 Input Initiate ext. See 257
268	1U		0-65535 / 1	BM W3 Output Initiate See 258
269	10	CYCLES	1-40959 / 1	BM W3 Delay
270	1U		0-15 / 1	Breaker Monitor Timing Method Select Bit 0 W1 Bit 1 W2 Bit 2 W3 Bit 3-7 Not Used 0 = I*t method selected 1 = I ² *t method selected
271	1	KAMPS	0-50000 / 1	BM W1 Accumulator Preset Phase A
272	1	KAMPS	0-50000 / 1	BM W1 Accumulator Preset Phase B
273	1	KAMPS	0-50000 / 1	BM W1 Accumulator Preset Phase C
274	1	KAMPS	0-50000 / 1	BM W2 Accumulator Preset Phase A
275	1	KAMPS	0-50000 / 1	BM W2 Accumulator Preset Phase B
276	1	KAMPS	0-50000 / 1	BM W2 Accumulator Preset Phase C
277	1	KAMPS	0-50000 / 1	BM W3 Accumulator Preset Phase A
278	1	KAMPS	0-50000 / 1	BM W3 Accumulator Preset Phase B
279	1	KAMPS	0-50000 / 1	BM W3 Accumulator Preset Phase C
280	10	MINS	10-9999 / 1	49 Time Constant
281	100	AMPS	if C.T. secondary rating = 5 Amp 100-1000 / 1 if C.T. secondary rating = 1 Amp 20-200 / 1	49 Max Overload current

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (29 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
282	1		0-4 / 1	49 Winding Select 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
283	1		0-1 / 1	Through Fault Inrush Inhibit 0 = Disable inhibit 1 = Enable inhibit
284	10	AMPS	10-1000 / 1	Through Fault Current Threshold
285	1		0-4 / 1	Through Fault Winding Selection 0 = summing current #1 1 = summing current #2 2 = W1 3 = W2 4 = W3
286	1U	kA2 cycle	0-65535 / 1	Through Fault Cumulative I ² t Limit high word
287	1U	kA2 cycle	0-65535 / 1	Through Fault Cumulative I ² t Limit low word
288	1U		1-65535 / 1	Through Fault Pickup Operation Limit
289	1	CYCLES	1-8160 / 1	Through Fault Time Delay
290	1	CYCLES	1-8160 / 1	TCM Delay
291	10	PU	50-200 / 1	87H Pickup
292	1	CYCLES	1-8160 / 1	87H Time Delay
293	100	PU	10-100 / 1	87T Pickup
294	1	%	5-100 / 1	87T Percent Slope #1
295	1	%	5-200 / 1	87T Percent Slope #2
296	10	PU	10-40 / 1	87T Slope Break Point
297	1	%	5-50 / 1	87T Even Harmonic Restraint (2nd & 4th)
298	1		0-2 / 1	87T Even Harmonic Restraint (2nd & 4th) 0 = Disable 1 = Enable 2 = Enable w/cross average
299	1	%	5-50 / 1	87T 5th Harmonic Restraint

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (30 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
300	1		0-2 / 1	87T 5th Harmonic Restraint 0 = Disable 1 = Enable 2 = Enable w/cross average
301	100	PU	10-200 / 1	87T Pickup at 5th Harmonic Restraint
302	100		if C.T. secondary rating = 5 Amp 100-10000 / 1 if C.T. secondary rating = 1 Amp 20-2000 / 1	87 W1 C.T. Tap
302	100		if C.T. secondary rating = 5 Amp 100-10000 / 1 if C.T. secondary rating = 1 Amp 20-2000 / 1	87 W2 C.T. Tap
302	100		if C.T. secondary rating = 5 Amp 100-10000 / 1 if C.T. secondary rating = 1 Amp 20-2000 / 1	87 W3 C.T. Tap
305	1		0-255 / 1	IPS LOGIC Reset/Dropout Timer Config Bit 0 IPS LOGIC #1 Bit 1 IPS LOGIC #2 Bit 2 IPS LOGIC #3 Bit 3 IPS LOGIC #4 Bit 4 IPS LOGIC #5 Bit 5 IPS LOGIC #6 Bit 6 not used Bit 7 not used 0 = Reset timer 1 = Dropout timer
306	1	CYCLES	1-8160 / 1	TCM1 Drop Delay
307	1	CYCLES	1-8160 / 1	TCM2 Delay
308	1	CYCLES	1-8160 / 1	TCM2 Drop Delay
309	1	CYCLES	1-8160 / 1	CCM1 Delay
310	1	CYCLES	1-8160 / 1	CCM1 Drop Delay

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (31 of 32)

16BIT / 32 BIT ANALOG OUTPUT WITH STATUS (Obj 40, Var 02, Var 01)

Request Function Code supported: 1 (read)

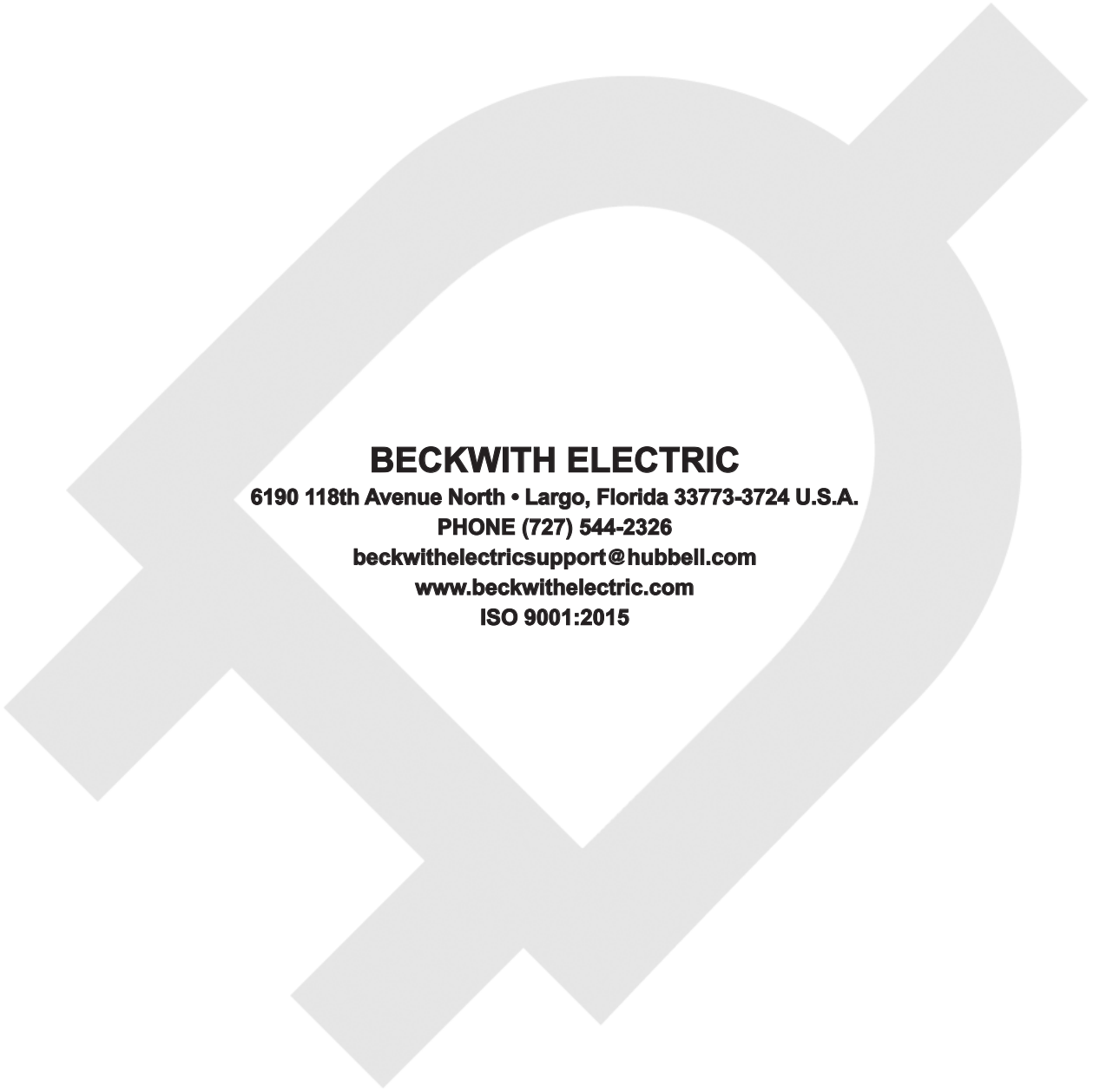
16 BIT / 32 BIT ANALOG OUTPUT BLOCK (Obj 41, Var 02, Var 01)

Request Function code supported: 3, 4, 5 (Selexe), 6

POINT INDEX	SCALE FACTOR	UNITS	RANGE / INCREMENT	DESCRIPTION
311	1	CYCLES	1-8160 / 1	CCM2 Delay
312	1	CYCLES	1-8160 / 1	CCM2 Drop Delay

■ **NOTE:** ** When writing these points, curve should always precede time dial. If a change is made in Inverse curve type of any function, the corresponding time dial should be written irrespective of a change.

Table 6 – Analog Outputs (32 of 32)



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