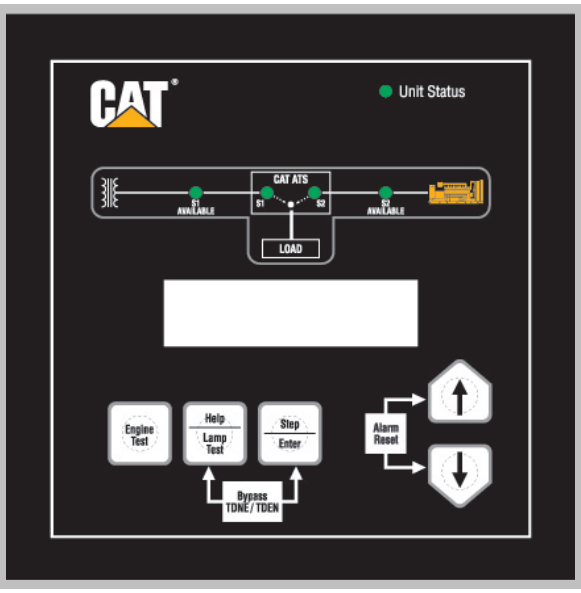
ATC-300+ Controller Modbus Communications Guide



3. Function Code Descriptions

3.1. Function Code 01 – Read ATS Status bits

Function code 01 reads the ON / OFF status of the 13 discrete outputs in the ATC-300+.

Name	Register Number (decimal)	Register Address (hex)
Source 1 Available	1000	3E7
Source 2 Available	1001	3E8
Source 1 Connected	1002	3E9
Source 2 Connected	1003	3EA
ATS In Test	1004	3EB
ATS Waiting for Sync	1005	3EC
K1 Relay	1006	3ED
K2 Relay	1007	3EE
K3 Relay	1008	3EF
K4 Relay	1009	3F0
Pretransfer Relay	1010	3F1
Alarm Relay	1011	3F2
Gen Start Relay	1012	3F3

Green highlight means map the Modbus register to BACnet.

Yellow highlight means map the Modbus register to BACnet if the point is being used by the ATS.

Table 4: Function Code 01 Definitions

The query message format in given in Table 5. The query specifies the starting status bit address and the quantity of status bits to be read. This example requests the Source 1 and Source 2 Available and Connected status bits.

Query Field Name	Example
Slave Address	08_{16}
Function Code	01_{16}
Starting Address High Byte	03_{16}
Starting Address Low Byte	$E7_{16}$
Number of Points High Byte	00_{16}
Number Of Points Low Byte	$0D_{16}$
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 5: Read ATS Status (01) Query

The response message format is given in Table 6. Each status bit requested is contained in one bit of the data field. The least significant bit of the first data byte contains the status of the starting addressed status bit. Each successive status bit corresponds to the next significant bit in the data field. If the number of status bits to be returned is not a byte (8-bit) multiple, the remaining unused bits in the last data byte are set to logical zeros. The Byte Count field

contains the number of data bytes being returned. A logical one indicates the ON condition while a logical zero indicates the OFF condition.

Response Field Name	Example
Slave Address	08_{16}
Function Code	01_{16}
Byte Count	02_{16}
Data from Status Bits at X (e.g., 1000_{10} through 1003_{10})	03_{16}
Data from Status Bits at X+8	01_{16}
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 6: Read ATS Status (01) Response

3.2. Function Code 02 – Read Input Status

Function code 02 reads the ON / OFF status of the 5 discrete inputs in the ATC-300+. "ON" means that the particular input feature is activated. "OFF" means that it is not.

Name	Modbus Address	
	Register Number (decimal)	Register Address (hex)
Lockout	2000	7CF
Go To Source 2	2001	7D0
Monitor Mode	2002	7D1
Manual Retransfer	2003	7D2
Emergency Inhibit	2004	7D3

Table 7: Function Code 02 Definitions

The query message format in given in Table 8. The query specifies the starting address (which is always one less than the starting register number) and the quantity of binary inputs to be read.

Query Field Name	Example
Slave Address	34_{16}
Function Code	02_{16}
Starting Address High Byte	07_{16}
Starting Address Low Byte	$D0_{16}$
Number of Points High Byte	00_{16}
Number Of Points Low Byte	03_{16}
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 8: Read Input Status (02) Query

The response message format is given in Table 9. Each binary input status requested is contained in one bit of the data field. The least significant bit of the first data byte contains the input status of the starting addressed input. Each successive input status bit corresponds to the next significant bit in the data field. If the number of inputs to be returned is not a byte (8-bit) multiple, the remaining unused bits in the last data byte are set to logical zeros. The Byte Count field contains the number of data bytes being returned. A logical one indicates the ON condition while a logical zero indicates the OFF condition.

Response Field Name	Example
Slave Address	34_{16}
Function Code	02_{16}
Byte Count	01_{16}
Data from Binary Inputs at X (e.g., 2000_{10} through 2003_{10})	01_{16}
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 9: Read Input Status (02) Response

3.3. Function Code 03 - Read Setpoints

Function code 03 reads the setpoints registers.

Setpoints registers have been reserved to hold configuration information parameters that are programmable. Setpoints information starts at register number 3001 (i.e., holding register address $BB8_{16}$). Setpoints are written using function code 16 (10_{16}): Write Setpoints.

The query message format in given in Table 10. The query specifies the starting register address (which is always one less than the starting register number) and the quantity of registers to be read.

Query Field Name	Example
Slave Address	21_{16}
Function Code	03_{16}
Starting Address High Byte	$0B_{16}$
Starting Address Low Byte	$B9_{16}$
Number of Registers High Byte	00_{16}
Number Of Registers Low Byte	02_{16}
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 10: Read Setpoints Registers (03) Query

The response message format is given in Table 11. The contents of each 16-bit register are returned as two bytes, with the high order byte returned first. The Byte Count field contains the number of data bytes being returned, which is calculated as two times the number of registers requested.

Response Field Name	Example
Slave Address	21_{16}
Function Code	03_{16}
Byte Count	04_{16}
Data from High Byte of Register X (e.g., $0BB9_{16}$)	00_{16}
Data from Low Byte of Register X (e.g., $0BB9_{16}$)	03_{16}
Data from High Byte of Register X+1 (e.g., $0BBA_{16}$)	00_{16}
Data from Low Byte of Register X+1 (e.g., $0BBA_{16}$)	05_{16}
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 11: Read Setpoints Registers (03) Response

There are 32 Setpoints registers as shown in Table 12.

Name	Register Number (decimal)	Register Address (hex)	Data Range	scale factor	Units
TDES timer	3001	BB8	0 to 120	1	sec
TDNE timer	3002	BB9	0 to 1800	1	sec
TDEN timer	3003	BBA	0 to 1800	1	sec
TDEC timer	3004	BBB	0 to 1800	1	sec
Nominal Frequency	3005	BBC	50 or 60	10	Hz
Nominal Voltage	3006	BBD	120 to 600	1	V
S1 Undervoltage Dropout	3007	BBE	Breaker ATS: 50 to 97% Contactor ATS: 78 to 97%	1	V
S2 Undervoltage Dropout	3008	BBF	Breaker ATS: 50 to 97% Contactor ATS: 78 to 97%	1	V
S1 Undervoltage Pickup	3009	BC0	Breaker ATS: (dropout + 2%) to 99% Contactor ATS: (dropout + 2%) to 99%	1	V
S2 Undervoltage Pickup	3010	BC1	Breaker ATS: (dropout + 2%) to 99% Contactor ATS: (dropout + 2%) to 99%	1	V
S1 Overvoltage Dropout	3011	BC2	Breaker ATS: 105 to 120% Contactor ATS: 105 to 110%	1	V
S2 Overvoltage Dropout	3012	BC3	Breaker ATS: 105 to 120% Contactor ATS: 105 to 110%	1	V
S1 Overvoltage Pickup	3013	BC4	Breaker ATS: 103% to (dropout - 2%) Contactor ATS: 103% to (dropout - 2%)	1	V
S2 Overvoltage Pickup	3014	BC5	Breaker ATS: 103% to (dropout - 2%) Contactor ATS: 103% to (dropout - 2%)	1	V
S1 Underfrequency Dropout	3015	BC6	Breaker ATS: 90 to 97% Contactor ATS: 90 to 97%	10	Hz
S2 Underfrequency Dropout	3016	BC7	Breaker ATS: 90 to 97% Contactor ATS: 90 to 97%	10	Hz
S1 Underfrequency Pickup	3017	BC8	Breaker ATS: (dropout + 1Hz) to 99% Contactor ATS: (dropout + 1Hz) to 99%	10	Hz
S2 Underfrequency Pickup	3018	BC9	Breaker ATS: (dropout + 1Hz) to 99% Contactor ATS: (dropout + 1Hz) to 99%	10	Hz
S1 Overfrequency Dropout	3019	BCA	Breaker ATS: 103 to 110% Contactor ATS: 103 to 105%	10	Hz
S2 Overfrequency Dropout	3020	BCB	Breaker ATS: 103 to 110% Contactor ATS: 103 to 105%	10	Hz
S1 Overfrequency Pickup	3021	BCC	Breaker ATS: 101% to (dropout - 1Hz) Contactor ATS: 101% to (dropout - 1Hz)	10	Hz
S2 Overfrequency Pickup	3022	BCD	Breaker ATS: 101% to (dropout - 1Hz) Contactor ATS: 101% to (dropout - 1Hz)	10	Hz
~~Reserved~~	~~3023~~	~~BCE~~	-	-	-
TDN timer	3024	BCF	0 to 120	1	sec
Modbus Baud Rate	3025	BD0	0 = 9600	1	-
Modbus Address	3026	BD1	1 to 247	1	-

Table 12: Read Setpoints Registers (03) – continued on next page

Name	Register Number (decimal)	Register Address (hex)	Data Range	scale factor	Units
Plant Exerciser Interval	3027	BD2	0 = disabled, 1 = daily, 2 = 7-day, 3 = 14-day, 4 = 28-day	1	-
Plant Exerciser Load Transfer	3028	BD3	0 = disabled, 1 = enabled	1	-
Plant Exerciser Day	3029	BD4	1 = Sunday, 2 = Monday, etc	1	-
Plant Exerciser Hour	3030	BD5	0 to 23	1	hour
Plant Exerciser Minute	3031	BD6	0 to 59	1	min
Test Mode	3032	BD7	0 = no load transfer, 1 = load transfer, 2 = disable test	1	-
Engine Run Time	3033	BD8	0 to 600	1	min
Pretransfer timer	3034	BD9	0 to 120	1	sec
Number of Generators	3035	BDA	0 to 1	1	-
Three phase / Single Phase	3036	BDB	1 or 3	1	-
Voltage Unbalance On/Off	3037	BDC	0 = disabled, 1 = enabled	1	-
Voltage Unbalance Dropout	3038	BDD	5 to 20	1	%
Voltage Unbalance Pickup	3039	BDE	3 to (dropout – 2%)	1	%
Voltage Unbalance Delay	3040	BDF	10 to 30	1	sec
TDEF timer	3041	BE0	0 to 6	1	sec
In-phase Transition On/Off	3042	BE1	0 = disabled, 1 = enabled	1	-
In-phase Transition Freq Difference	3043	BE2	0 to 3	10	Hz
Synchronization timer	3044	BE3	1 to 60	1	min
Phase Reversal On/Off	3045	BE4	0 = off, 1 = ABC, 2 = CBA	1	-
Daylight Savings Time Auto Adjust	3046	BE5	0 = disabled, 1 = enabled	1	-
Manual Re-transfer On/Off	3047	BE6	0 = disabled, 1 = enabled	1	-
Display Language	3048	BE7	0 = English, 1 = French, 2 = Spanish	1	-

Table 12: Read Setpoints Registers (03)

3.4. Function Code 04 – Read Actual Values

Actual Value registers contain dynamic information such as device status and metered values, like voltages and frequencies. Actual value registers are read-only and are accessed using function code 04. Each register is two bytes.

The query message format in given in Table 13. The query specifies the starting register address (which is always one less than the starting register number) and the quantity of registers to be read.

Query Field Name	Example
Slave Address	21_{16}
Function Code	04_{16}
Starting Address High Byte	20_{16}
Starting Address Low Byte	02_{16}
Number of Registers High Byte	00_{16}
Number Of Registers Low Byte	02_{16}
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 13: Read Actual Value Registers (04) Query

The response message format is given in Table 14. The contents of each 16-bit register are returned as two bytes, with the high order byte returned first. The Byte Count field contains the number of data bytes being returned, which is calculated as two times the number of registers requested.

Response Field Name	Example
Slave Address	21_{16}
Function Code	04_{16}
Byte Count	04_{16}
Data from High Byte of Register X (e.g., 2002_{16})	02_{16}
Data from Low Byte of Register X (e.g., 2002_{16})	58_{16}
Data from High Byte of Register X+1 (e.g., 2003_{16})	01_{16}
Data from Low Byte of Register X+1 (e.g., 2003_{16})	$2C_{16}$
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 14: Read Actual Values Registers (04) Response

Objects currently assigned to the Actual Value registers are listed in Table 15. There are 32 Actual Value registers. The ATC-300+ only supports fixed point values.

Category	Name	Units	Register Address (decimal)	Register Address (hex)	scale factor	format
Measured Values	S1 V_{AB}	V	6145	1800	1	unsigned
	S1 V_{BC}	V	6146	1801	1	unsigned
	S1 V_{CA}	V	6147	1802	1	unsigned
	S1 Freq	Hz	6148	1803	10	unsigned
	S2 V_{AB}	V	6149	1804	1	unsigned
	S2 V_{BC}	V	6150	1805	1	unsigned
	S2 V_{CA}	V	6151	1806	1	unsigned
	S2 Freq	Hz	6152	1807	10	unsigned
Timers	TDES Timer	seconds	6153	1808	1	unsigned
	TDNE Timer	seconds	6154	1809	1	unsigned
	TDEN Timer	seconds	6155	180A	1	unsigned
	TDEC Timer	seconds	6156	180B	1	unsigned
	TDN Timer	seconds	6157	180C	1	unsigned
	TDEF Timer	seconds	6158	180D	1	unsigned
	Pretransfer Timer	seconds	6159	180E	1	unsigned
	Engine Run Timer	minutes	6160	180F	1	unsigned
	Sync Timer	minutes	6161	1810	1	unsigned
System Counters	S2 Engine Run Time	hours	6162	1811		
	S1 Connect Time	hours	6163	1812		
	S2 Connect Time	hours	6164	1813		
	S1 Available Time	hours	6165	1814		
	S2 Available Time	hours	6166	1815		
	Load Energized Time	hours	6167	1816		
ATS Info	Primary Status	-	6168	1817	1	unsigned
	Number of Transfers	-	6169	1818	1	unsigned
	Cause of Latest Event	-	6170	1819	1	unsigned
Controller Info	Product ID	-	6171	181A	-	encoded
	Hardware Revision	-	6172	181B	-	unsigned
	Firmware Version	-	6173	181C	-	unsigned
	Firmware Revision	-	6174	181D	-	unsigned
	Serial Number - high	-	6175	181E	-	unsigned
	Serial Number – low	-	6176	181F	-	unsigned

Table 15: Function Code 04 Register Map

The Primary Status is contained in the high byte of the register. Decoding is shown in Table 16.

Code	Definition
4	Alarmed
8	Starting
12	Transferred
27	On Good Source

Table 16: Decoding for Primary Status register

The Cause of Latest Event register decoding is shown in Table 17.

Code	Definition
1	Preferred Source became Available
2	Overvoltage
3	Undervoltage
4	Overfrequency
5	Underfrequency
6	Plant Exerciser
7	Engine Test
9	Remote Engine Test
11	Voltage Unbalance
12	Phase Reversal
14	Go To Emergency
15	Lockout
16	Failed to sync (Phase angle)
17	Failed to sync (Freq difference)
18	Monitor Mode
19	Engine Test or Plant Exercise Aborted
20	Source 1 Breaker/Contactor Error
21	Source 2 Breaker/Contactor Error

Table 17: Decoding for Cause of Latest Event Register

3.5. Function Code 05 - Operation Commands

Function code 05 executes an Operation Command by sending the Execute Command data (FF00) to the appropriate register address.

Name	Register Address (decimal)	Register Address (hex)
Reset Number of Transfers	5000	1387
Reset S1 Available Time	5001	1388
Reset S1 Connect Time	5002	1389
Reset S2 Available Time	5003	138A
Reset S2 Connect Time	5004	138B
Reset S2 Engine Run Time	5005	138C
Reset Load Energized Time	5006	138D
Reset Transfer Status	5007	138E
Initiate ATS Test	5008	138F
Cancel ATS Test	5009	1390
Bypass TDNE/TDEN	500A	1391
Manual Retransfer	500B	1392
Go To Emergency	500C	1393
Cancel Go To Emergency	500D	1394

Table 18: Function Code 05 Definitions

The command message format is given in Table 19. This example is for initiating an ATS Test.

Query Field Name	Example
Slave Address	34_{16}
Function Code	05_{16}
Operation Register Address High Byte	13_{16}
Operation Register Address Low Byte	$8F_{16}$
Execute Command High Byte	FF_{16}
Execute Command Low Byte	00_{16}
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 19: Operation Command (05) Query

The response is an echo to the query as shown in Table 20.

Response Field Name	Example
Slave Address	34_{16}
Function Code	05_{16}
Operation Address Register High Byte	13_{16}
Operation Address Register Low Byte	$8F_{16}$
Execute Command High Byte	FF_{16}
Execute Command Low Byte	00_{16}
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 20: Operation Command (05) Response

3.6. Function Code 16 - Write Setpoints

Function code 16 provides the capability to write setpoints to ATC-300+. The entire setpoints buffer (48 registers) must be written.

The query message format in shown in Table 21. The query specifies the starting register address ($BB8_{16}$), the number of registers to be written to (30_{16}), the number of data bytes to follow (60_{16}) and the setpoint data values of the registers. The setpoint values for each 16-bit register are transmitted as two bytes, with the high order byte transmitted first. .

Query Field Name	Example
Slave Address	42_{16}
Function Code	10_{16} (16_{10})
Starting Register Address High Byte (TDES Setpoint)	$0B_{16}$
Starting Register Address Low Byte (TDES Setpoint)	$B8_{16}$
Number of Registers High Byte	00_{16}
Number Of Registers Low Byte	30_{16}
Byte Count	60_{16}
TDES Setpoint Data High Byte	00_{16}
TDES Setpoint Data Low Byte	03_{16}
TDNE Setpoint Data High Byte	00_{16}
TDNE Setpoint Data Low Byte	05_{16}
: :	
Display Language Data High Byte	00_{16}
Display Language Data Low Byte	00_{16}
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 21: Write Setpoints (16) Query

The response message format in given in Table 22. The response echoes the starting register address and the number of setpoint registers from the query message.

Response Field Name	Example
Slave Address	42_{16}
Function Code	10_{16} (16_{10})
Starting Register (TDES) Address High Byte	$0B_{16}$
Starting Register (TDES) Address Low Byte	$B8_{16}$
Number of Registers High Byte	00_{16}
Number Of Registers Low Byte	30_{16}
Error Check Low Byte	CRC Low
Error Check High Byte	CRC High

Table 22: Write Setpoints (16) Response

Note: this list is a duplicate of the read setpoints list above. The intent is that there would be no writeable points via BACnet to the ATS. Map these following points as read only so long as they are not duplicated with the read list above.

The setpoints re tpoints registers. Each

Name	Register Number (decimal)	Register Address (hex)	Data Range	scale factor	Units
TDES timer	3001	BB8	0 to 120	1	sec
TDNE timer	3002	BB9	0 to 1800	1	sec
TDEN timer	3003	BBA	0 to 1800	1	sec
TDEC timer	3004	BBB	0 to 1800	1	sec
Nominal Frequency	3005	BBC	50 or 60	10	Hz
Nominal Voltage	3006	BBD	120 to 600	1	V
S1 Undervoltage Dropout	3007	BBE	Breaker ATS: 50 to 97% Contactor ATS: 78 to 97%	1	V
S2 Undervoltage Dropout	3008	BBF	Breaker ATS: 50 to 97% Contactor ATS: 78 to 97%	1	V
S1 Undervoltage Pickup	3009	BC0	Breaker ATS: (dropout + 2%) to 99% Contactor ATS: (dropout + 2%) to 99%	1	V
S2 Undervoltage Pickup	3010	BC1	Breaker ATS: (dropout + 2%) to 99% Contactor ATS: (dropout + 2%) to 99%	1	V
S1 Overvoltage Dropout	3011	BC2	Breaker ATS: 105 to 120% Contactor ATS: 105 to 110%	1	V
S2 Overvoltage Dropout	3012	BC3	Breaker ATS: 105 to 120% Contactor ATS: 105 to 110%	1	V
S1 Overvoltage Pickup	3013	BC4	Breaker ATS: 103% to (dropout - 2%) Contactor ATS: 103% to (dropout - 2%)	1	V
S2 Overvoltage Pickup	3014	BC5	Breaker ATS: 103% to (dropout - 2%) Contactor ATS: 103% to (dropout - 2%)	1	V
S1 Underfrequency Dropout	3015	BC6	Breaker ATS: 90 to 97% Contactor ATS: 90 to 97%	10	Hz
S2 Underfrequency Dropout	3016	BC7	Breaker ATS: 90 to 97% Contactor ATS: 90 to 97%	10	Hz
S1 Underfrequency Pickup	3017	BC8	Breaker ATS: (dropout + 1Hz) to 99% Contactor ATS: (dropout + 1Hz) to 99%	10	Hz
S2 Underfrequency Pickup	3018	BC9	Breaker ATS: (dropout + 1Hz) to 99% Contactor ATS: (dropout + 1Hz) to 99%	10	Hz
S1 Overfrequency Dropout	3019	BCA	Breaker ATS: 103 to 110% Contactor ATS: 103 to 105%	10	Hz
S2 Overfrequency Dropout	3020	BCB	Breaker ATS: 103 to 110% Contactor ATS: 103 to 105%	10	Hz
S1 Overfrequency Pickup	3021	BCC	Breaker ATS: 101% to (dropout - 1Hz) Contactor ATS: 101% to (dropout - 1Hz)	10	Hz
S2 Overfrequency Pickup	3022	BCD	Breaker ATS: 101% to (dropout - 1Hz) Contactor ATS: 101% to (dropout - 1Hz)	10	Hz
Reserved	3023	BCE	-	-	-
TDN timer	3024	BCF	0 to 120	1	sec

Table 23: Write Setpoints Registers (16) – continued on next page

Name	Register Number (decimal)	Register Address (hex)	Data Range	scale factor	Units
Modbus Baud Rate	3025	BD0	0 = 9600	1	-
Modbus Address	3026	BD1	1 to 247	1	-
Plant Exerciser Interval	3027	BD2	0 = disabled, 1 = daily, 2 = 7-day, 3 = 14-day, 4 = 28-day	1	-
Plant Exerciser Load Transfer	3028	BD3	0 = disabled, 1 = enabled	1	-
Plant Exerciser Day	3029	BD4	1 = Sunday, 2 = Monday, etc	1	-
Plant Exerciser Hour	3030	BD5	0 to 23	1	hour
Plant Exerciser Minute	3031	BD6	0 to 59	1	min
Test Mode	3032	BD7	0 = no load transfer, 1 = load transfer, 2 = disable test	1	-
Engine Run Time	3033	BD8	0 to 600	1	min
Pretransfer timer	3034	BD9	0 to 120	1	sec
Number of Generators	3035	BDA	0 to 1	1	-
Three phase / Single Phase	3036	BDB	1 or 3	1	-
Voltage Unbalance On/Off	3037	BDC	0 = disabled, 1 = enabled	1	-
Voltage Unbalance Dropout	3038	BDD	5 to 20	1	%
Voltage Unbalance Pickup	3039	BDE	3 to (dropout – 2%)	1	%
Voltage Unbalance Delay	3040	BDF	10 to 30	1	sec
TDEF timer	3041	BE0	0 to 6	1	sec
In-phase Transition On/Off	3042	BE1	0 = disabled, 1 = enabled	1	-
In-phase Transition Freq Difference	3043	BE2	0 to 3	10	Hz
Synchronization timer	3044	BE3	1 to 60	1	min
Phase Reversal On/Off	3045	BE4	0 = off, 1 = ABC, 2 = CBA	1	-
Daylight Savings Time Auto Adjust	3046	BE5	0 = disabled, 1 = enabled	1	-
Manual Re-transfer On/Off	3047	BE6	0 = disabled, 1 = enabled	1	-
Display Language	3048	BE7	0 = English, 1 = French, 2 = Spanish	1	-

Table 23: Write Setpoints Registers (16)

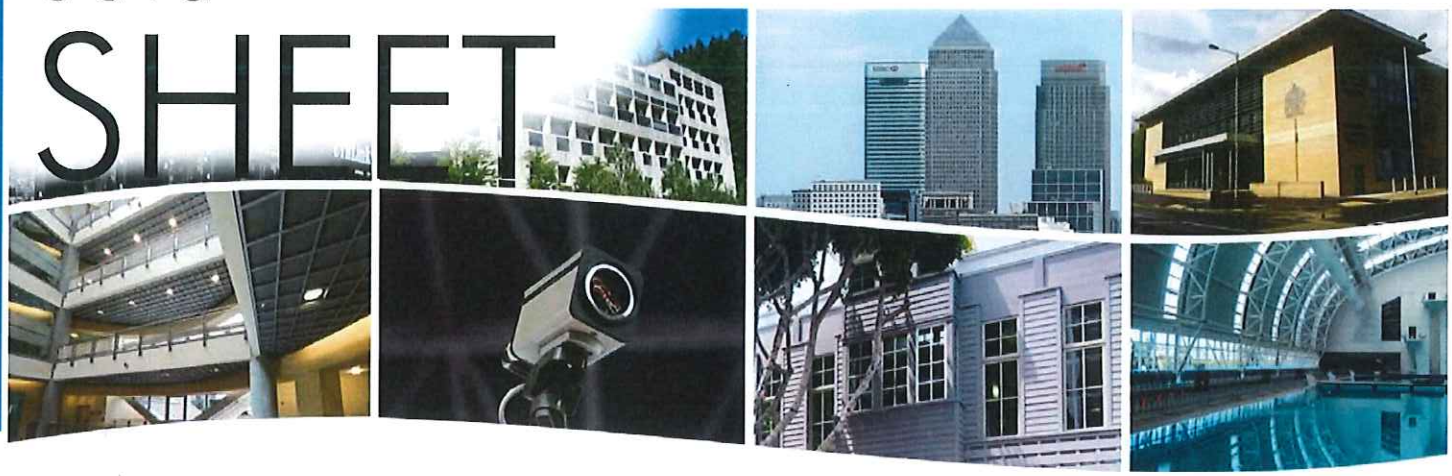
3.7. Exception Codes

Under certain circumstances, the ATC-300+ will return an exception code. The exception codes are shown in Table 24.

Exception Code (hex)	Description
01	Invalid Function
02	Invalid Register
03	Invalid Data
84	Partial Register Access Error

Table 24: Exception Codes

data SHEET



BASgatewayLX — Modbus to BACnet® Converter

Modbus remains a popular network interface. It is commonly found on jobs such as boiler control, variable speed drives, and metering applications, but these devices lack BACnet compliance. To make Modbus devices appear as individual BACnet devices a BASgatewayLX is used. This device has one 10/100 Mbps Modbus TCP or BACnet/IP Ethernet port and an opto-isolated Modbus EIA-485 serial port for Modbus RTU or Modbus ASCII devices.

Up to 30 Modbus serial devices (represented by up to 1000 polled points) can share the single Modbus port on the BASgatewayLX. The virtual routing feature in the BASgatewayLX allows each connected Modbus device to appear as an individual BACnet-compliant device. What is needed is a device profile for each Modbus type device. Contemporary Controls maintains a library of common device profiles. If one is not available, Contemporary Controls will provide it upon request. Custom device profiles can be uploaded to the BASgateway.

Using web pages and a resident database of common Modbus device profiles, Modbus data points from Modbus Serial or Modbus TCP devices can be mapped to BACnet objects.

Gateway Functionality Between ...

- Modbus Serial (RTU or ASCII) and BACnet/IP
- Modbus TCP and BACnet/IP

Routing Functionality Between...

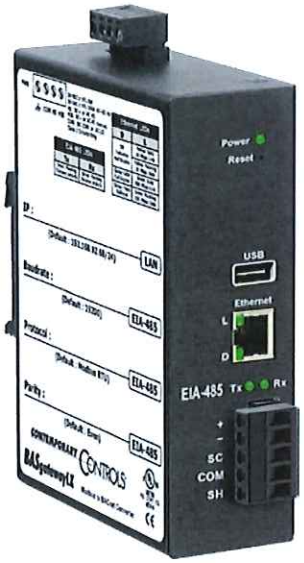
- Modbus Serial (RTU and ASCII) and Modbus TCP

Flexible Communication Ports

- 10/100 Mbps Ethernet with auto-negotiation and Auto-MDIX
- Opto-isolated serial port supports either 2-wire or 3-wire EIA-485
- Jumper-selectable EIA-485 bias and termination
- Baud rates from 2.4–115.2 kbps

Convenient Installation

- 24 VAC/VDC powered
- DIN-rail mounting



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