B-4 ModBus Data Listing

B-4-1 ModBus Coil List

The following tables list the primary coils for the inverter interface to the network. The table legend is given below.

- **Coil Number –** The network register address offset for the coil. The coil data is a single bit (binary) value.
- **Name –** The functional name of the coil
- **R/W –** The read-only (R) or read-write (R/W) access permitted to the inverter data
- **Description –** The meaning of each of the states of the coils

Coil No.	Item	R/W	Setting
0000h	unused	–	(Inaccessible)
0001h	Operation command	R/W	1: Run, 0: Stop (valid when A002 = 03)
0002h	Rotation direction command	R/W	1: Reverse rotation, 0: Forward rotation (valid when A002 = 03)
0003h	External trip (EXT)	R/W	1: Trip
0004h	Trip reset (RS)	R/W	1: Reset
0005h	(Reserved)	–	–
0006h	(Reserved)	–	–
0007h	Intelligent input terminal [1]	R/W	1: ON, 0: OFF (*1)
0008h	Intelligent input terminal [2]	R/W	1: ON, 0: OFF (*1)
0009h	Intelligent input terminal [3]	R/W	1: ON, 0: OFF (*1)
000Ah	Intelligent input terminal [4]	R/W	1: ON, 0: OFF (*1)
000Bh	Intelligent input terminal [5]	R/W	1: ON, 0: OFF (*1)
000Ch	Intelligent input terminal [6]	R/W	1: ON, 0: OFF (*1)
000Dh	Intelligent input terminal [7]	R/W	1: ON, 0: OFF (*1)
000Eh	(Reserved)	–	–
000Fh	Operation status	R	1: Run, 0: Stop (interlocked to "d003")
0010h	Rotation direction	R	1: Reverse rotation, 0: Forward rotation (interlocked to "d003")
0011h	Inverter ready	R	1: Ready, 0: Not ready
0012h	(Reserved)	–	–
0013h	RUN (running)	R	1: Running, 0: Not Running
0014h	FA1 (constant-speed reached)	R	1: ON, 0: OFF
0015h	FA2 (set frequency overreached)	R	1: ON, 0: OFF
0016h	OL (overload advance notice (1))	R	1: ON, 0: OFF
0017h	OD (output deviation for PID control)	R	1: ON, 0: OFF
0018h	AL (alarm signal)	R	1: ON, 0: OFF
0019h	FA3 (set frequency reached)	R	1: ON, 0: OFF
001Ah	OTQ (over-torque)	R	1: ON, 0: OFF
001Bh	(Reserved)	–	–
001Ch	UV (undervoltage)	R	1: ON, 0: OFF
001Dh	TRQ (torque limited)	R	1: ON, 0: OFF
001Eh	RNT (operation time over)	R	1: ON, 0: OFF
001Fh	ONT (plug-in time over)	R	1: ON, 0: OFF
0020h	THM (thermal alarm signal)	R	1: ON, 0: OFF
0021h	(Reserved)	–	–
0022h	(Reserved)	–	–
0023h	(Reserved)	–	–
0024h	(Reserved)	–	–
0025h	(Reserved)	–	–
0026h	BRK (brake release)	R	1: ON, 0: OFF
0027h	BER (brake error)	R	1: ON, 0: OFF
0028h	ZS (0 Hz detection signal)	R	1: ON, 0: OFF
0029h	DSE (speed deviation maximum)	R	1: ON, 0: OFF
002Ah	POK (positioning completed)	R	1: ON, 0: OFF
002Bh	FA4 (set frequency overreached 2)	R	1: ON, 0: OFF
002Ch	FA5 (set frequency reached 2)	R	1: ON, 0: OFF

Coil No.	Item	R/W	Setting
002Dh	OL2 (overload notice advance (2))	R	1: ON, 0: OFF
002Eh	Odc: Analog O disconnection detection	–	1: ON, 0: OFF
002Fh	OIDc: Analog OI disconnection detection	–	1: ON, 0: OFF
0030h	(Reserved)	–	–
0031h	(Reserved)	–	–
0032h	FBV (PID feedback comparison)	R	1: ON, 0: OFF
0033h	NDc (communication train disconnection)	R	1: ON, 0: OFF
0034h	LOG1 (logical operation result 1)	R	1: ON, 0: OFF
0035h	LOG2 (logical operation result 2)	R	1: ON, 0: OFF
0036h	LOG3 (logical operation result 3)	R	1: ON, 0: OFF
0037h	(Reserved)	–	–
0038h	(Reserved)	–	–
0039h	(Reserved)	–	–
003Ah	WAC (capacitor life warning)	R	1: ON, 0: OFF
003Bh	WAF (cooling-fan speed drop)	R	1: ON, 0: OFF
003Ch	FR (starting contact signal)	R	1: ON, 0: OFF
003Dh	OHF (heat sink overheat warning)	R	1: ON, 0: OFF
003Eh	LOC (low-current indication signal)	R	1: ON, 0: OFF
003Fh	M01 (general output 1)	R	1: ON, 0: OFF
0040h	M02 (general output 2)	R	1: ON, 0: OFF
0041h	M03 (general output 3)	R	1: ON, 0: OFF
0042h	(Reserved)	–	–
0043h	(Reserved)	–	–
0044h	(Reserved)	–	–
0045h	IRDY (inverter ready)	R	1: ON, 0: OFF
0046h	FWR (forward rotation)	R	1: ON, 0: OFF
0047h	RVR (reverse rotation)	R	1: ON, 0: OFF
0048h	MJA (major failure)	R	1: ON, 0: OFF
0049h	Data writing in progress	R	1: Writing in progress, 0: Normal status
004Ah	CRC error	R	1: Error detected, 0: No error (*2)
004Bh	Overrun	R	1: Error detected, 0: No error (*2)
004Ch	Framing error	R	1: Error detected, 0: No error (*2)
004Dh	Parity error	R	1: Error detected, 0: No error (*2)
004Eh	Sum check error	R	1: Error detected, 0: No error (*2)
004Fh	(Reserved)	–	–
0050h	WCO (window comparator O)	R	1: ON, 0: OFF
0051h	WCOI (window comparator OI)	R	1: ON, 0: OFF
0052h	(Reserved)	–	–
0053h	OPDc (option disconnection)	R	1: ON, 0: OFF
0054h	FREF (FQ command source)	R	1: Operator, 0: Others
0055h	REF (RUN command source)	R	1: Operator, 0: Others
0056h	SETM (2nd motor selected)	R	1: 2nd motor selected, 0: 1st motor selected
0057h	(Reserved)	–	–
0058h	EDM (Gate suppress monitor)	R	1: ON, 0: OFF
0059h-	unused	R	inaccessible

Note 1   Normally, this coil is turned on when the corresponding intelligent input terminal on the control circuit terminal block is turned on or the coil itself is set to on. In this regard, the operation of the intelligent input terminal has priority over the operation of the coil. If disconnection of the communication train has disabled the master system from turning off the coil, turn the corresponding intelligent input terminal on the control circuit block on and off. This operation turns off the coil.

Note 2   Communication error data is retained until an error reset command is input. (The data can be reset during the inverter operation.)

B-4-2   ModBus Holding Registers

The following tables list the holding registers for the inverter interface to the network. The table legend is given below.

- **Function Code –** The inverter's reference code for the parameter or function (same as inverter keypad display)
- **Name –** The standard functional name of the parameter or function for the inverter
- **R/W –** The read-only(R) or read-write access(R/W) permitted to the data in the inverter
- **Description –** How the parameter or setting works (same as Chapter 3 description).
- **Reg. –** The network register address offset for the value. Some values have a high-byte and low-byte address.
- **Range –** The numerical range for the network value that is sent and/or received

⚠ **Tip**   The network values are binary integers. Since these values cannot have an embedded decimal point, for many parameters it represents the actual value (in engineering units) multiplied by a factor of 10 or 100. Network communications must use the listed range for network data. The inverter automatically divides received values by the appropriate factor in order to establish the decimal point for internal use. Likewise, the network host computer must apply the same factor when it needs to work in engineering units. However, when sending data to the inverter, the network host computer must scale values to the integer range listed for network communications.

- **Resolution –** This is the quantity represented by the LSB of the network value, in engineering units. When the network data range is greater than the inverter's internal data range, this 1-bit resolution will be fractional.

Register No.	Function name	Function code	R/W	Monitoring and setting items		Data resolution
0000h	unused	–	–	Inaccessible		
0001h	Output frequency setting/monitor	F001 (high)	R/W	0 to 40000 (valid when A001 = 03)		0.01 [Hz]
0002h		F001 (low)	R/W			
0003h	Inverter status A	–	R	0: Initial status 2: Stopping 3: Running 4: Free-run stop 5: Jogging	6: DC braking 7: Retrying 8: Tripping 9: Undervoltage (UV),	–
0004h	Inverter status B	–	R	0: Stopping, 1: Running, 2: Tripping		–
0005h	Inverter status C	–	R	0: – 1: Stopping 2: Decelerating 3: Constant-speed operation 4: Accelerating 5: Forward rotation	6: Reverse rotation 7: Switching from fwd. to rev. rotation, 8: Switching from rev. to fwd. rotation, 9: Starting fwd. 10: Starting rev.	–
0006h	PID feedback	–	R/W	0 to 10000		0.01 [%]
0007h to 0010h	(Reserved)	–	R	–	–	

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
0011h	Fault frequency monitor	d080	R	0 to 65535	1 [time]
0012h	Fault monitor 1 (factor)	d081	R	See the list of inverter trip factors below	–
0013h	Fault monitor 1 (inverter status)			See the list of inverter trip factors below	–
0014h	Fault monitor 1 (frequency) (high)			0 to 40000	0.01[Hz]
0015h	Fault monitor 1 (frequency (low)				
0016h	Fault monitor 1 (current)			Output current at tripping	0.01[A]
0017h	Fault monitor 1 (voltage)			DC input voltage at tripping	1[V]
0018h	Fault monitor 1 (running time) (high)			Cumulative running time at tripping	1[h]
0019h	Fault monitor 1 (running time) (low)				
001Ah	Fault monitor 1 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
001Bh	Fault monitor 1 (power-on time) (low)				
001Ch	Fault monitor 2 (factor)	d082	R	See the list of inverter trip factors below	–
001Dh	Fault monitor 2 (inverter status)			See the list of inverter trip factors below	–
001Eh	Fault monitor 2 (frequency) (high)			0 to 40000	0.01[Hz]
001Fh	Fault monitor 2 (frequency) (low)				
0020h	Fault monitor 2 (current)			Output current at tripping	0.01[A]
0021h	Fault monitor 2 (voltage)			DC input voltage at tripping	1[V]
0022h	Fault monitor 2 (running time) (high)			Cumulative running time at tripping	1[h]
0023h	Fault monitor 2 (running time) (low)				
0024h	Fault monitor 2 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
0025h	Fault monitor 2 (power-on time) (low)				
0026h	Fault monitor 3 (factor)	d083	R	See the list of inverter trip factors below	–
0027h	Fault monitor 3 (inverter status)			See the list of inverter trip factors below	–
0028h	Fault monitor 3 (frequency) (high)			0 to 40000	0.01[Hz]
0029h	Fault monitor 3 (frequency) (low)				
002Ah	Fault monitor 3 (current)			Output current at tripping	0.01[A]
002Bh	Fault monitor 3 (voltage)			DC input voltage at tripping	1[V]
002Ch	Fault monitor 3 (running time) (high)			Cumulative running time at tripping	1[h]
002Dh	Fault monitor 3 (running time) (low)				
002Eh	Fault monitor 3 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
002Fh	Fault monitor 3 (power-on time) (low)				
0030h	Fault monitor 4 (factor)	d084	R	See the list of inverter trip factors below	–
0031h	Fault monitor 4 (inverter status)			See the list of inverter trip factors below	–
0032h	Fault monitor 4 (frequency) (high)			0 to 40000	0.01[Hz]
0033h	Fault monitor 4 (frequency) (low)				
0034h	Fault monitor 4 (current)			Output current at tripping	0.01[A]
0035h	Fault monitor 4 (voltage)			DC input voltage at tripping	1[V]
0036h	Fault monitor 4 (running time) (high)			Cumulative running time at tripping	1[h]
0037h	Fault monitor 4 (running time) (low)				
0038h	Fault monitor 4 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
0039h	Fault monitor 4 (power-on time) (low)				
003Ah	Fault monitor 5 (factor)	d085	R	See the list of inverter trip factors below	–
003Bh	Fault monitor 5 (inverter status)			See the list of inverter trip factors below	–
003Ch	Fault monitor 5 (frequency) (high)			0 to 40000	0.01[Hz]
003Dh	Fault monitor 5 (frequency) (low)				
003Eh	Fault monitor 5 (current)			Output current at tripping	0.01[A]
003Fh	Fault monitor 5 (voltage)			DC input voltage at tripping	1[V]
0040h	Fault monitor 5 (running time) (high)			Cumulative running time at tripping	1[h]
0041h	Fault monitor 5 (running time) (low)				
0042h	Fault monitor 5 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
0043h	Fault monitor 5 (power-on time) (low)				