

Modbus Communication Protocol - LWBE3G560-218PT-06

Register Name	Register Type	Address	Address (decimal)	Command type	Power down Storage	Type	Bit field Description	Register function	Description for Data length word parameters	Max value	Min value	Defaults
(reset)	R/W	0xD000	53248	0x03/0x06	N	bit	bit0	Reserve	Make the modified parameters take effect (Copy Eeprom to RAM) After modifying the register's value which is "power-down storage" type, you need to set this bit to make the modified value take effect, and this bit will automatically return to 0. Note: 1) This operation process takes effect every time when the power is turned on, and the data of the EEPROM is loaded into the RAM; 1: Write 1 to restore factory settings, automatically reset to 0,	1	0	0
						bit	bit1	Parameter valid control bit		1	0	0
						bit	bit3	reset		1	0	0
						bit	other	Reserve		1	0	0
In speed control mode by communication, setting the speed	W	0xD001	53249	0x06	N	u16	\	In speed control mode by communication, setting the speed	1: When the "control mode register" is set to speed closed-loop control, this value represents the speed control value, and the corresponding unit is rpm. register value=n/n_max*64000; n=(register value/64000)*n_max Note: 1) The maximum speed is determined by the setting value of the maximum speed register. 2) Stop value is xx, start value is xx	65535	0	0
current actual speed	R	0xD010	53264	0x04	N	u16	\	current actual speed	1: 0x0001 is to read the actual speed, the actual speed n_now=(register value/64000)*n_max 2: 0x0005 is the data of the five registers that start to read the actual speed, that is, the data of the five registers of D010, D011, D012, D013, D014 Note: 1) The maximum speed is determined by the value set by the maximum speed register. 2) If the input is not 0x0005, only the actual speed can be read	65536	0	0
Fault word (operating status)	R	0xD011	53265	0x04	N	bit	bit0	Power phase loss fault flag	Set to "1" when a power phase failure occurs	1	0	0
						bit	bit1	Speed signal flag	Set "1" when no speed is given.	1	0	0
						bit	bit2	IPM over temperature fault	Set to "1" when an IPM overtemperature fault occurs	1	0	0
						bit	bit3	Reserve		1	0	0
						bit	bit4	total fault flag	When any one fault occurs, it will cause the fan to stop and the total fault position will be set.	1	0	0
						bit	bit5-bit6	Reserve		1	0	0
						bit	bit7	Fan blocked fault flag	Set to "1" when the fan is blocked (failed to start)	1	0	0
						bit	bit8	Fan start failure flag	Set to "1" when the fan fails to start 5 times	1	0	0
						bit	bit9	Reserve		1	0	0
						bit	bit10	IPM fault flag	Set to "1" when a FO fault of an IPM fault occurs	1	0	0
						bit	bit11	BUS voltage too high fault	Set to "1" when the BUS voltage is too high fault.	1	0	0
						bit	bit12	BUS voltage undervoltage fault flag	Set to "1" when a bus voltage undervoltage fault occurs	1	0	0
						bit	bit13	Three-phase input voltage undervoltage fault flag	Set to "1" when a three-phase input voltage undervoltage fault occurs	1	0	0
						bit	bit14	Three-phase input voltage overvoltage fault flag	Set to "1" when a three-phase input voltage overvoltage fault occurs	1	0	0
bit	bit15	Reserve		1	0	0						
IPM module	R	0xD015	53269	0x04		\	IPM module temperature	The register value is the actual temperature integer value				
Query the set speed	R	0xD01A	53274	0x04		\		n=(register value/64000)*n_max				
Fan address	R/W	0xD100	53504	0x03/0x06	Y	u16	\	Fan address	1: 0x03 command: 0x0001 is to read the fan address, others are invalid; 2: 0x06 command: 0x00xx is the write fan address, xx is 01~F7 (1-247); Note: 0x00 is the broadcast address	247	1	1
Speed control mode	R/W	0xD101	53505	0x03/0x06	Y	u16	\	Speed control mode	1: 0x03 command: 0x0001 is read fan speed control mode, return data 0x0000 is analog speed control, 0x0001 communication speed control; 2: 0x06 command: 0x0000 is to set analog speed regulation, 0x000x is non-0 communication mode	1	0	0
Control value storage	W	0xD103	53507	0x06	Y	u16	\	Save the speed setting value in communication control mode to e2prom	1: The speed set by 0x0000 is not stored in e2prom, and the speed set by 0x0001 is stored in e2prom; Note: 1) After restarting, the fan runs with the last saved value; it needs to be set to 1 to save when power off 2) Save the e2prom method, note that the number of deposits is limited to 1 million times	1	0	0
maximum speed	R/W	0xD119	53529	0x03/0x06	Y	u16	\	maximum speed	1: register value = n_max, n_max actual integer 1) The maximum speed n_max is less than the limit speed	65536	0	1250
limit speed	R	0xD11A	53530	0x04		u16	\	limit speed	1: 0x0001 query the limit speed of the fan, n_limit is an actual integer			
baud rate	W	0xD149	53577	0x06	Y	u16	\	baud rate setting	1: 0x06 command: 0x0000: 1200 0x0001: 2400 0x0002: 4800 0x0003: 9600 0x0004: 19200(Default) 0x0005: 38400	5	0	4
parity bit	W	0xD14A	53578	0x06	Y	u16	\	Set the communication check method	1: 0x06 Command: 0x0000: 8E1, 8-bit data, even parity, 1 stop bit (Default) 0x0001: 801, 8-bit data, odd parity, 1 stop bit 0x0002: 8N2, 8-bit data, no parity, 2 stop bits 0x0003: 8N1, 8-bit data, no parity, 1 stop bit 0x0004: 8E2: 8-bit data, even parity, 2 stop bits	3	0	0

1: Register type classification: read-only register R, read-write register R/W, reserved register Res;

2: reserved register: R read-only register: always returns The current value

when reading, and fails when writing, R/W read-write register: always returns The current value when reading, and returns successfully when writing,

3: D010, D011, D012, D013, D014, D015 can be read continuously;

4: The factory default baud rate is 19200, the fan address is 1, the parity bit is EVEN, the data bit is 8, and the stop bit is 1.

5: Data frame description: fan address byte - function code - register address - data length word - CRC (L-H); for example: query fan address 0x01-0x03-0xD1-0x00-0x00-0x01_CRC_L_CRC_H

Message data frame case

0x03-0xD100 Query local address

Request		Normal Response		NOTE
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7	Default address 1
Function	0x03	Function	0x03	
Starting Address Hi	0xD1	Byte Count	0x02	
Starting Address Lo	0x00	Data Hi(Register 0xD100)	0x00	
No. of Points Hi	0x00	Data Lo(Register 0xD100)	0x01-0xF7	
No. of Points Lo	0x01	CRC Check	CRCLo 8bits	
CRC Check	CRCLo 8bits		CRCHi 8bits	
	CRCHi 8bits	Error Response		
		Slave Address	0x01-0xF7	
		Function	0x83	
		Exception code	0x02 or 0x03 or 0x04	
		CRC Check	CRCLo 8bits	
			CRCHi 8bits	

0x03-0xD101 Query the local speed control

Request		Normal Response		NOTE
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7	0x0001: Communication speed regulation; 0x0000: 0~10V speed regulation; The default state is 0~10V speed regulation.
Function	0x03	Function	0x03	
Starting Address Hi	0xD1	Byte Count	0x02	
Starting Address Lo	0x01	Data Hi(Register 0xD101)	0x00	
No. of Points Hi	0x00	Data Lo(Register 0xD101)	0x00/0x01	
No. of Points Lo	0x01	CRC Check	CRCLo 8bits	
CRC Check	CRCLo 8bits		CRCHi 8bits	
	CRCHi 8bits	Error Response		
		Slave Address	0x01-0xF7	
		Function	0x83	
		Exception code	0x02 or 0x03 or 0x04	
		CRC Check	CRCLo 8bits	
			CRCHi 8bits	

0x03-0xD015 Query the IPM module temperature

Request		Normal Response		NOTE
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7	
Function	0x04	Function	0x04	
Starting Address Hi	0xD0	Byte Count	0x02	
Starting Address Lo	0x15	Data Hi(Register 0xD015)	0x00	
No. of Points Hi	0x00	Data Lo(Register 0xD015)	0x00~0x64	
No. of Points Lo	0x01	CRC Check	CRCLo 8bits	
CRC Check	CRCLo 8bits		CRCHi 8bits	
	CRCHi 8bits	Error Response		
		Slave Address	0x01-0xF7	
		Function	0x84	
		Exception code	0x02 or 0x03 or 0x04	
		CRC Check	CRCLo 8bits	
			CRCHi 8bits	

0x03-0xD119 Query the current maximum speed

Request		Normal Response		备注 NOTE
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7	
Function	0x03	Function	0x03	
Starting Address Hi	0xD1	Byte Count	0x02	
Starting Address Lo	0x19	Data Hi(Register 0xD119)	Current Max. Speed Hi	
No. of Points Hi	0x00	Data Lo(Register 0xD119)	Current Max. Speed Lo	
No. of Points Lo	0x01	CRC Check	CRCLo 8bits	
CRC Check	CRCLo 8bits		CRCHi 8bits	
	CRCHi 8bits	Error Response		
		Slave Address	0x01-0xF7	
		Function	0x83	
		Exception code	0x02 or 0x03	
		CRC Check	CRCLo 8bits	
			CRCHi 8bits	

0x04-0xD010 Query actual speed				
Request		Normal Response		
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7	
Function	0x04	Function	0x04	
Starting Address Hi	0xD0	Byte Count	0x02	
Starting Address Lo	0x10	Data Hi(Register 0xD010)	Current Speed Hi	
No. of Points Hi	0x00	Data Lo(Register 0xD010)	Current Speed Lo	
No. of Points Lo	0x01/0x05	CRC Check	CRCLo 8bits CRCHi 8bits	
CRC Check	CRCLo 8bits CRCHi 8bits	Error Response		
		Slave Address	0x01-0xF7	
		Function	0x84	
		Exception code	0x02 or 0x03 or 0x04	
		CRC Check	CRCLo 8bits CRCHi 8bits	
If the input is 0x0005, the actual speed, operating status, alarm status ,voltage, the current, that is, the data of five bytes of D010, D011, D012, D013, D014; if the input is not 5, only the actual speed can be read.				
0x04-0xD011 Query running status				
Request		Normal Response		
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7	
Function	0x04	Function	0x04	
Starting Address Hi	0xD0	Byte Count	0x02	
Starting Address Lo	0x11	Data Hi(Register 0xD011)	0x00~0xFF	
No. of Points Hi	0x00	Data Lo(Register 0xD011)	0x00~0xFF	
No. of Points Lo	0x01	CRC Check	CRCLo 8bits CRCHi 8bits	
CRC Check	CRCLo 8bits CRCHi 8bits	Error Response		
		Slave Address	0x01-0xF7	
		Function	0x84	
		Exception code	0x02 or 0x03	
		CRC Check	CRCLo 8bits CRCHi 8bits	
0x0000: Normal operation; 0x0011: Power supply phase loss; 0x0012: Speed signal failur; 0x0014: IPM temperature is too high; 0x0010: Fan is faulty; 0x0090: Fan is blocked; 0x0110: Fan start failure; 0x0410: Ipm Over Current; 0x0810: Bus voltage is too high; 0x1010: Bus voltage is too low; 0x2010: Input voltage is too low; 0x4010: Input voltage is too High.				
0x04-0xD01A Query set speed				
Request		Normal Response		NOTE
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7	
Function	0x04	Function	0x04	
Starting Address Hi	0xD0	Byte Count	0x02	
Starting Address Lo	0x1A	Data Hi(Register 0xD01A)	Set Speed Hi	
No. of Points Hi	0x00	Data Lo(Register 0xD01A)	Set Speed Lo	
No. of Points Lo	0x01	CRC Check	CRCLo 8bits CRCHi 8bits	
CRC Check	CRCLo 8bits CRCHi 8bits	Error Response		
		Slave Address	0x01-0xF7	
		Function	0x84	
		Exception code	0x02 or 0x03	
		CRC Check	CRCLo 8bits CRCHi 8bits	
0x04-0xD11A Query the limit speed				
Request		Normal Response		NOTE
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7	
Function	0x04	Function	0x04	
Starting Address Hi	0xD1	Byte Count	0x02	
Starting Address Lo	0x1A	Data Hi(Register 0xD11A)	Limit Speed Hi	
No. of Points Hi	0x00	Data Lo(Register 0xD11A)	Limit Speed Lo	
No. of Points Lo	0x01	CRC Check	CRCLo 8bits CRCHi 8bits	
CRC Check	CRCLo 8bits CRCHi 8bits	Error Response		
		Slave Address	0x01-0xF7	
		Function	0x84	
		Exception code	0x02 or 0x03	
		CRC Check	CRCLo 8bits CRCHi 8bits	

0x06-0xD100 Input the local address			
Request		Normal Response	NOTE
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7
Function	0x06	Function	0x06
Register Address Hi	0xD1	Register Address Hi	0xD1
Register Address Lo	0x00	Register Address Lo	0x00
Preset Data Hi	0x00	Data Hi(Register 0xD100)	0x00
Preset Data Lo	0x01-0xF7	Data Lo(Register 0xD100)	0x01-0xF7
CRC Check	CRCLo 8bits	CRC Check	CRCLo 8bits
	CRCHi 8bits		CRCHi 8bits
		Error Response	
		Slave Address	0x01-0xF7
		Function	0x86
		Exception code	0x02 or 0x04
		CRC Check	CRCLo 8bits
			CRCHi 8bits
		Broadcast Response	
		NO	
0x06-0xD101 Set control mode			
Request		Normal Response	NOTE
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7
Function	0x06	Function	0x06
Register Address Hi	0xD1	Register Address Hi	0xD1
Register Address Lo	0x01	Register Address Lo	0x01
Preset Data Hi	0x00	Data Hi(Register 0xD101)	0x00
Preset Data Lo	0x00/0x01	Data Lo(Register 0xD101)	0x00/0x01
CRC Check	CRCLo 8bits	CRC Check	CRCLo 8bits
	CRCHi 8bits		CRCHi 8bits
		Error Response	
		Slave Address	0x01-0xF7
		Function	0x86
		Exception code	0x02 or 0x04
		CRC Check	CRCLo 8bits
			CRCHi 8bits
		Broadcast Response	
		NO	
0x06-0xD001 Set the speed in the communication control mode			
Request		Normal Response	NOTE
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7
Function	0x06	Function	0x06
Register Address Hi	0xD0	Register Address Hi	0xD0
Register Address Lo	0x01	Register Address Lo	0x01
Preset Data Hi	0x00~0xFF	Data Hi(Register 0xD001)	0x00~0xFF
Preset Data Lo	0x00~0xFF	Data Lo(Register 0xD001)	0x00~0xFF
CRC Check	CRCLo 8bits	CRC Check	CRCLo 8bits
	CRCHi 8bits		CRCHi 8bits
		Error Response	
		Slave Address	0x01-0xF7
		Function	0x86
		Exception code	0x02 or 0x04
		CRC Check	CRCLo 8bits
			CRCHi 8bits
		Broadcast Response	
		NO	
(input speed: 0~64000) Fan start/stop values: Set speed value = set speed / maximum speed * 64000			

0x06-0xD103 Store the speed setting value in communication control mode.				
Request		Normal Response	Input a value of 1 to store speed value into EPROM every time; input other values without saving.	
Slave Address	0x01-0xF7	Slave Address		0x01-0xF7
Function	0x06	Function		0x06
Register Address Hi	0xD1	Register Address Hi		0xD1
Register Address Lo	0x03	Register Address Lo		0x03
Preset Data Hi	0x00	Data Hi(Register 0xD103)		0x00
Preset Data Lo	0x00/0x01	Data Lo(Register 0xD103)		0x00/0x01
CRC Check	CRCLo 8bits	CRC Check		CRCLo 8bits
	CRCHi 8bits			CRCHi 8bits
		Error Response		
		Slave Address		0x01-0xF7
		Function		0x86
		Exception code		0x02 or 0x04
		CRC Check		CRCLo 8bits
				CRCHi 8bits
		Broadcast Response		
		NO		
0x06-0xD119 Input maximum speed (RPM)				
Request		Normal Response		
Slave Address	0x01-0xF7	Slave Address		0x01-0xF7
Function	0x06	Function		0x06
Register Address Hi	0xD1	Register Address Hi		0xD1
Register Address Lo	0x19	Register Address Lo		0x19
Preset Data Hi	Speed Percent Hi	Data Hi(Register 0xD119)		Setting Speed Hi
Preset Data Lo	Speed Percent Lo	Data Lo(Register 0xD119)		Setting Speed Lo
CRC Check	CRCLo 8bits	CRC Check		CRCLo 8bits
	CRCHi 8bits			CRCHi 8bits
		Error Response		
		Slave Address		0x01-0xF7
		Function		0x86
		Exception code		0x02 or 0x04
		CRC Check		CRCLo 8bits
				CRCHi 8bits
		Broadcast Response		
		NO		
0x06-0xD149 Baud rate setting				
Request		Normal Response	0x00: Baud rate: 1200; 0x01: Baud rate: 2400; 0x02: Baud rate: 4800; 0x03: Baud rate: 9600; 0x04: Baud rate: 19200; 0x05: Baud rate: 38400.	
Slave Address	0x01-0xF7	Slave Address		0x01-0xF7
Function	0x06	Function		0x06
Register Address Hi	0xD1	Register Address Hi		0xD1
Register Address Lo	0x49	Register Address Lo		0x49
Preset Data Hi	0x00	Data Hi(Register 0xD149)		0x00
Preset Data Lo	0x00~0x05	Data Lo(Register 0xD149)		0x00~0x05
CRC Check	CRCLo 8bits	CRC Check		CRCLo 8bits
	CRCHi 8bits			CRCHi 8bits
		Error Response		
		Slave Address		0x01-0xF7
		Function		0x86
		Exception code		0x02 or 0x04
		CRC Check		CRCLo 8bits
				CRCHi 8bits
		Broadcast Response		
		NO		

0x06-0xD14A Communication check configuration			
Request		Normal Response	
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7
Function	0x06	Function	0x06
Register Address Hi	0xD1	Register Address Hi	0xD1
Register Address Lo	0x4A	Register Address Lo	0x4A
Preset Data Hi	0x00	Data Hi(Register 0xD14A)	0x00
Preset Data Lo	0x00~0x04	Data Lo(Register 0xD14A)	0x00~0x04
CRC Check	CRCLo 8bits	CRC Check	CRCLo 8bits
	CRCHi 8bits		CRCHi 8bits
		Error Response	
		Slave Address	0x01-0xF7
		Function	0x86
		Exception code	0x02 or 0x04
		CRC Check	CRCLo 8bits
			CRCHi 8bits
		Broadcast Response	
		NO	

0x00: Parity bit: EVEN; Data bit: 8; Stop bit: 1;
0x01: 0x01: Parity bit: ODD; Data bit: 8; Stop bit: 1;
0x02: Parity bit: NONE; Data bits: 8; Stop bits: 2;
0x03: Parity bits are: NONE; Data bits: 8; Stop bits: 1;
0x04: Parity bits are: EVEN; Data bits: 8; Stop bits: 2.

0x06-0xD000 Reset enables the set baud rate and check digits to be valid or power cycle to power up.

Request			Normal Response	
Slave Address	0x01-0xF7	Slave Address	0x01-0xF7	After setting the fan address, baud rate, and check mode, write the value 2 to register 9C41, and the setting will take effect. It can also take effect after power off and on again.
Function	0x06	Function	0x06	
Register Address Hi	0xD0	Register Address Hi	0xD0	
Register Address Lo	0x00	Register Address Lo	0x00	
Preset Data Hi	0x00	Data Hi(Register 0xD000)	0x00	
Preset Data Lo	0x02	Data Lo(Register 0xD000)	0x02	
CRC Check	CRCLo 8bits	CRC Check	CRCLo 8bits	
	CRCHi 8bits		CRCHi 8bits	
		Error Response		
		Slave Address	0x01-0xF7	
		Function	0x86	
		Exception code	0x02 or 0x04	
		CRC Check	CRCLo 8bits	
			CRCHi 8bits	
		Broadcast Response		
		NO		