

30 Fault function

30 Fault function	Fault Protection Function Setting	Def
30.00 Ext fault 1 src	Select the signal source for the external fault 1. 0: No fault signal source; 1: Has fault signal source.	CONST.FALSE E=[0]
P.01.00.00	User-defined pointer (01.00.00 from left to right take two digits as a set, indicates the parameter set, index, item number in turn. The actual value is determined by the current value of the parameter.)	-
CONST.FALSE	Always be 0	0
CONST.TRUE	Always be 1	1
DI1	Digital input DI1 (02.00 DI Status, Position 0)	2048
DI2	Digital input DI2	2049
DI3	Digital input DI3	2050
DI4	Digital input DI4	2051
DI5	Digital input DI5	2052
DI6	Digital input DI6	2053
DI7	Digital input DI7	2054
30.01 Ext fault 2 src	Select the signal source for the external fault 2. Refer to parameters 30.00 Ext fault 1 src (signal source of external fault 1).	CONST.FALSE E=[0]
30.02 Groud fault act	Select the action to be performed by the drive when a ground fault is detected.	Fault = [1]
No action	No action.	0
Fault	Report fault.	1
Alarm	Report alarm.	2
30.03 Input phase loss	Select the action to be performed by the drive when an input phase fault is detected.	Fault = [1]
No action	No action.	0
Fault	Report fault.	1
Alarm	Report alarm.	2
30.04 Motor phase loss	Select the action to be performed by the drive when a motor phase fault is detected.	Fault = [1]
No action	No action.	0
Fault	Report fault.	1



30 Fault function	Fault Protection Function Setting	Def
Alarm	Report alarm.	2
30.05 STO action	Activate or disable the security torque interrupt protection function by this parameter.	Enable = [1]
Disable	Disable the security torque interrupt protection function.	0
Enable	Enable the security torque interrupt protection function.	1
30.06 OH alarm level	Setting the IGBT radiator overheating warning point. When the set overheating warning point exceeds the allowable temperature of the drive, it will ignore the parameter and automatically warn at 5 degrees ahead of the overheating.	90.0°C
[40.0°C, 120.0°C]	Overheat warning temperature point.	
30.07 Fault auto reset	Activate or disable the fault automatic reset function by this parameter.	Disable = [0]
Disable	Disable the fault automatic reset function.	0
Enable	Enable the fault automatic reset function.	1
30.08 Fault trial num	Number of times a fault reset trying is allowed.	5
[1, 20]		-
30.09 Fault trial wait	Interval time of fault reset.	1.00s
[0.01s, 150.00s]		
30.10 Trial cnt reset	Time interval for fault reset trying to clear the counter.	60.00s
[0.01s, 150.00s]		
30.11 ChopIGBT fault act	Action to be performed when the brake IGBT fails.	Fault
None	No action.	0
Fault	Fault output.	1
Alarm	Alarm output.	2
30.12 Rb est	Resistance estimated by the system. Read-only.	-
30.13 Br thermal enable	Brake resistance thermal protection enable.	Disable
Disable	Turn off.	0
Enable	Enable resistance thermal protection.	1
30.14 Br temp est	Estimated value of the temperature rise of the braking resistor. Read-only.	-



30 Fault function	Fault Protection Function Setting	Def
30.15 Br max power	Set the rated power of the braking resistor.	2.0kW
[0, 3000.0kW]		0.1kW
30.16 Br time constant	Set the thermal time constant of the braking resistor.	60.0 s
[0.1s, 3000.0s]		0.1s
30.17 Br temp rise	Set the rated temperature rise of the braking resistor.	60.0°C
[0.0s, 300.0s]		0.1°C
30.18 Br fault level	Set the overheat fault point of the braking resistor.	150.0°C
[0.0, 300.0°C]		0.1°C
30.19 Br alarm level	Set the overheat alarm point of the braking resistor.	120.0°C
[0.0, 300.0°C]		0.1°C

31 Motor Therm Prot

31 Motor Therm Prot	Motor temperature measurement and overheat protection set up	Def
31.00 Protect action	Select the action to be performed by the driver when the motor thermal protection 1 detects the over temperature of the motor.	Fault = [1]
No	Motor thermal protection is not activated.	0
Fault	When the temperature is above the alarm / fault level defined by the parameters 31.02 Alarm limit (Motor temperature alarm value)/31.03 Fault limit (Motor temperature fault value)(whichever is lower), The drive will generate a MOTOROH alarm or a MOTOROH fault and trip off. The temperature sensor failure or wiring errors will cause the driver to trip off.	1
Alarm	When the motor temperature exceeds the alarm limit defined by the parameters 31.02 Alarm limit (Motor temperature alarm value), the drive will generate a MOTOR OH alarm.	2
31.01 Temperature src	Select the temperature measurement method for the motor thermal protection. When the overheating is detected, the drive will react in accordance with the method defined by the parameters 31.00 Protect action (Motor over temperature protection).	Estimated = [0]



31 Motor Therm Prot	Motor temperature measurement and overheat protection set up	Def
Estimated	The monitoring temperature based on the motor thermal protection model which uses the thermal time constant of the motor (parameter 31.14Mot therm time (thermal protection time constant)) and the motor load curve (parameter 31.10...31.12) . Only when the operating ambient temperature is different from the rated operating temperature of the motor, user need to adjust the relevant parameters. If the motor runs above the motor load curve, the motor temperature will increase. If the motor runs under the motor load curve (if the motor is overheated), the motor temperature will be reduced. Warning! If the the motor is not properly cooled due to the dust, the model can not perform the protection function to the motor.	0
KTY84	The motor temperature is monitored by the KTY84 temperature sensor.	1
PTC	The motor temperature is monitored by the PTC sensor.	2
PT100_X1	Monitoring by a PT100 sensor.	3
PT100_X2	Monitoring by two PT100 sensors.	4
PT100_X3	Monitoring by three PT100 sensors.	5
31.02 Alarm limit	Set the motor temperature warning point.	120.0 °C
[0.0 °C, 200.0 °C]	Motor temperature warning point.	
31.03 Fault limit	Set motor temperature fault point.	130.0 °C
[0.0 °C, 200.0 °C]	Motor temperature fault point.	
31.04 Ambient temp	Set the actual operating ambient temperature of the motor.	40.0 °C
[0.0 °C, 90.0 °C]	Ambient temperature of the motor.	
31.05 Motor nom load	When the parameters 31.01Temperature src (Signal source of motor temperature) is set as Estimated (Estimated value), the heating model of the motor will use the load curve.	110.0%
[50.0%, 200.0%]	Maximum load of the motor load curve.	
31.06 Zero speed load	Define the maximum motor load when the load curve is zero. If the motor is equipped with an external fan to enhance the ventilation cooling of the motor, a greater load may be used. Refer to the motor manufacturer's recommendations.	70.0%
[50.0%, 100.0%]	Zero load of the motor load curve.	
31.07 Motor nom speed	Define the inflection frequency of the load curve, i.e. the load on the load curve defined by the value of the parameter 31.05 Nominal load (Rated speed load) begins to drop to the value defined by the parameter 31.06 Zero speed load (Zero speed load).	1500rpm
[150rpm, 30000rpm]	The speed inflection point of the motor load curve.	



31 Motor Therm Prot	Motor temperature measurement and overheat protection set up	Def
Estimated	The monitoring temperature based on the motor thermal protection model which uses the thermal time constant of the motor (parameter 31.14Mot therm time (thermal protection time constant)) and the motor load curve (parameter 31.10...31.12) . Only when the operating ambient temperature is different from the rated operating temperature of the motor, user need to adjust the relevant parameters. If the motor runs above the motor load curve, the motor temperature will increase. If the motor runs under the motor load curve (if the motor is overheated), the motor temperature will be reduced. Warning! If the the motor is not properly cooled due to the dust, the model can not perform the protection function to the motor.	0
KTY84	The motor temperature is monitored by the KTY84 temperature sensor.	1
PTC	The motor temperature is monitored by the PTC sensor.	2
PT100_X1	Monitoring by a PT100 sensor.	3
PT100_X2	Monitoring by two PT100 sensors.	4
PT100_X3	Monitoring by three PT100 sensors.	5
31.02 Alarm limit	Set the motor temperature warning point.	120.0 °C
[0.0 °C, 200.0 °C]	Motor temperature warning point.	
31.03 Fault limit	Set motor temperature fault point.	130.0 °C
[0.0 °C, 200.0 °C]	Motor temperature fault point.	
31.04 Ambient temp	Set the actual operating ambient temperature of the motor.	40.0 °C
[0.0 °C, 90.0 °C]	Ambient temperature of the motor.	
31.05 Motor nom load	When the parameters 31.01Temperature src (Signal source of motor temperature) is set as <i>Estimated (Estimated value)</i> , the heating model of the motor will use the load curve.	110.0%
[50.0%, 200.0%]	Maximum load of the motor load curve.	
31.06 Zero speed load	Define the maximum motor load when the load curve is zero. If the motor is equipped with an external fan to enhance the ventilation cooling of the motor, a greater load may be used. Refer to the motor manufacturer's recommendations.	70.0%
[50.0%, 100.0%]	Zero load of the motor load curve.	
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[150rpm, 30000rpm]	The speed inflection point of the motor load curve.	



32 Factory Setting	Optimization of the factory configuration of the kernel factory configuration settings (Default value)	Def
[2048, 16384]		1
32.05 Ki_vdc_max	Integral gain of the overvoltage stall controller, Q16.	1638
[419, 16384]		1
32.06 Kp_vdc_max_f	Proportional gain of the overvoltage stall frequency controller, Q12.	4096
[2048, 16384]		1
32.07 Ki_vdc_max_f	Integral gain of the overvoltage stall frequency controller, Q16.	1638
[419, 16384]		1
32.08 Kp_fctrl	Proportional gain of the open loop frequency controller, Q12.	2048
[819, 16384]		1
32.09 Kp_vctrl	Proportional gain of the open loop voltage controller, Q12.	2048
[819, 16384]		1
32.10 AI1 gain	Analog input AI1 correction gain, Q12	4096
[2048, 8192]		1
32.11 AI1 offset	Analog input AI1 corrected offset, 1mV or 1mA	0
[-200, 200]		1mV/1mA
32.12 AI2 gain	Analog input AI2 correction gain, Q12	4096
[2048, 8192]		1
32.13 AI2 offset	Analog input AI2 corrected offset, 1mV or 1mA	0
[-200, 200]		1mV/1mA
32.14 AI3 gain	Analog input AI3 correction gain, Q12	4096
[2048, 8192]		1
32.15 AI3 offset	Analog input AI3 corrected offset, 1mV or 1mA	0
[-200, 200]		1mV/1mA
32.16 AO1 gain	Analog output AO1 correction gain, Q12	3805



32 Factory Setting	Optimization of the factory configuration of the kernel factory configuration settings (Default value)	Def
[2048, 8192]		1
32.17 AO1 offset	Analog output AO1 corrected offset, 1mV or 1mA	45mV
[-200, 200]		1mV/1mA
32.18 AO2 gain	Analog output AO2 correction gain, Q12	3805
[2048, 8192]		1
32.19 AO2 offset	Analog output AO2 corrected offset, 1mV or 1mA	45mV
[-200, 200]		1mV/1mA

33 Signal Generator

33 Signal Generator	Signal Generator Setting	Def
33.00 Signal generator enable	Enable or disable signal generator function. Enable = [1]	Enable = [1]
Disable	Disable. Can reduce the CPU load.	0
Enable	Enable.	1
33.01 Signal waveform	Select the output signal waveform. Sinusoid = [0]	Sinusoid = [0]
Sinusoid	Output sine wave of the signal generator.	0
Trapezoid	Output trapezoidal wave of the signal generator.	1
33.02 Signal output	Current output value of the monitoring signal. Note: this parameter is read – only. This parameter can be connected by a pointer.	0
[-32768,32767]		-
33.03 Maxoutput	Set the maximum output value of the signal.	1500
[-32768,32767]		-
33.04 Min output	Set the minimum output value of the signal.	-1500
[-32768,32767]		-
33.05 Sinusoid period	Set the signal cycle of the sine wave, Unit is 1ms.	3000 ms
[8,30000]		-



33 Signal Generator	Signal Generator Setting	Def
33.06 Traperise time	Set the rise time of the trapezoidal wave from low level to high level, Unit is 1ms.	6000 ms
[1,60000]		-
33.07 Trape fall time	Set the fall time of the trapezoidal wave from high level to low level, Unit is 1ms.	6000ms
[1,60000]		-
33.08 Trape high time	Set the duration of the trapezoidal wave high level, Unit is 0.01s.	1.00 s
[0.01,600.00]		-
33.09 Trape low time	Set the duration of the trapezoidal wave low level, Unit is 0.01s.	1.00 s
[0.01,600.00]		-

34 Logic Function

34 Logic Function	Edge counters, comparators, combinational logic, timers and other functions setting	Def																																										
34.00 Logic status	<p>Can be connected to any bit of the status word by a bit pointer.</p> <table border="1"> <thead> <tr> <th>No</th> <th>Name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Edge1</td> <td>Edge counter 1 output.</td> </tr> <tr> <td>1</td> <td>Edge2</td> <td>Edge counter 2 output.</td> </tr> <tr> <td>2</td> <td>Edge3</td> <td>Edge counter 3 output.</td> </tr> <tr> <td>3</td> <td>Comp1</td> <td>Comparator 1 output.</td> </tr> <tr> <td>4</td> <td>Comp2</td> <td>Comparator 2 output.</td> </tr> <tr> <td>5</td> <td>Comp3</td> <td>Comparator 3 output.</td> </tr> <tr> <td>6</td> <td>Logic1</td> <td>Logic 1 function output.</td> </tr> <tr> <td>7</td> <td>Logic2</td> <td>Logic 2 function output.</td> </tr> <tr> <td>8</td> <td>Logic3</td> <td>Logic 3 function output.</td> </tr> <tr> <td>9</td> <td>Ontime1</td> <td>Timer 1 output.</td> </tr> <tr> <td>10</td> <td>Ontime2</td> <td>Timer 2 output.</td> </tr> <tr> <td>11</td> <td>Ontime3</td> <td>Timer 3 output.</td> </tr> <tr> <td>12~15</td> <td>Reserved</td> <td>Retain</td> </tr> </tbody> </table>	No	Name	Description	0	Edge1	Edge counter 1 output.	1	Edge2	Edge counter 2 output.	2	Edge3	Edge counter 3 output.	3	Comp1	Comparator 1 output.	4	Comp2	Comparator 2 output.	5	Comp3	Comparator 3 output.	6	Logic1	Logic 1 function output.	7	Logic2	Logic 2 function output.	8	Logic3	Logic 3 function output.	9	Ontime1	Timer 1 output.	10	Ontime2	Timer 2 output.	11	Ontime3	Timer 3 output.	12~15	Reserved	Retain	
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11	Ontime3	Timer 3 output.																																										
12~15	Reserved	Retain																																										
34.01 Edge cnt1 val	Monitor the count value of the edge counter. Note that this parameter is read – only.	0																																										
[0, 65535]		-																																										
34.02 Edge cnt1 src	Select the count signal source for the edge counter 1. when the specified edge of the signal is detected, the counter plus 1.	CONST.FALSE E= [0]																																										
P.01.00.00	User-defined pointer (01.00.00 from left to right take two digits as a set, indicates the parameter set, index, item number in turn. The actual value is determined by the current value of the parameter.)	-																																										
CONST.FALSE	Always be 0	0																																										
CONST.TRUE	Always be 1	1																																										



34 Logic Function	Edge counters, comparators, combinational logic, timers and other functions setting	Def
DI1	Digital input DI1 (02.00 DI Status, Position 0)	2048
DI2	Digital input DI2	2049
DI3	Digital input DI3	2050
DI4	Digital input DI4	2051
DI5	Digital input DI5	2052
DI6	Digital input DI6	2053
DI7	Digital input DI7	2054
34.03 Edge cnt1 reset	Select the reset signal source for the edge counter 1. When the signal is 1, the counter is cleared to 0. Refer to parameters 34.02 Edge cnt1 src (count signal source of edge counter 1) for relevant available options.	CONST.FALSE = [0]
34.04 Edge cnt1 edge	Select the count edge of the edge counter 1.	Rising = [0]
Rising	Counting for the rising edge of the count signal.	0
Falling	Counting for the falling edge of the count signal.	1
Both	Counting for the rising and falling edges of the count signal.	2
34.05 Edge cnt1 duty	Set the duty cycle of the edge counter 1. The output of the edge counter is monitored by the parameter of 34.00 Logic status (Logical state) Bit 0. When the count value is less than the duty cycle, the output is 0; otherwise, the output is 1.	100
[0,65535]		-
34.06 Edge cnt1 period	Set the count cycle for the edge counter 1. Note that the period of the edge counter should not be less than its duty cycle.	120
[0,65535]		-
34.07 Edge cnt1 clear	Enable or disable the clear mode of the edge counter 1.	Disable = [0]
Disable	Disable clear mode, clear when the count value exceeds the maximum value of 65535.	0
Enable	Enable clear mode, clear automatically when the count value reaches the cycle value.	1
...
34.15 Edge cnt3 val	Monitor the count value of the edge counter 3. The value range and units and other instructions refer to the parameter 34.01 Edge cnt1 val (count value of edge counter 1).	0
34.16 Edge cnt3 src	Select the count signal source of the edge counter 3. Refer to parameters 34.02 Edge cnt1 src (count signal source of edge counter 1) for relevant available options.	CONST.FALSE = [0]
34.17 Edge cnt3 reset	Select the reset signal source of edge counter 3. Refer to parameters 34.02 Edge cnt1 src (count signal source of edge counter 1) for relevant available options.	CONST.FALSE = [0]



34 Logic Function	Edge counters, comparators, combinational logic, timers and other functions setting	Def
34.18 Edge cnt3 edge	Select the count value of the edge counter 3. The value range and units and other instructions refer to the parameter <i>34.04 Edge cnt1 edge (count edge of edge counter 1)</i> for relevant available options.	Rising = [0]
34.19 Edge cnt3 duty	Set the duty cycle of the edge counter 3. The value range and units and other instructions refer to the parameter <i>34.05 Edge cnt1 duty (duty cycle of edge counter 1)</i> .	100
34.20 Edge cnt3 period	Set the cycle of the edge counter 3. The value range and units and other instructions refer to the parameter <i>34.06 Edge cnt1 period (cycles of edge counter 1)</i> .	120
34.21 Edge cnt3clear	Enable or disable the clear mode of the edge counter 3. Refer to parameters <i>34.07 Edge cnt1 clear (Edge counter 1 clear)</i> for relevant available options.	
34.22 Comp1 output	Monitor the output of the comparator 1. Note that this parameter is read only. The output of the comparator 1 is also available for checking in the parameter <i>34.00 Logic status (Logical state)</i> Bit 3.	0
[0,1]	The comparator using the hysteresis comparison mode by default. The hysteresis size Δ is determined by the parameter <i>34.25 Comp1 range (comparison range of Comparator 1)</i> . Initially, the comparator output is 0, when the input A decreased to less than or equal to $B - \Delta$, the output is reversed to 0; when the input A increased to greater than or equal to the input $B + \Delta$, the output is reversed to 1. Enable the window comparison mode by the parameter <i>34.28 Comp1 win (window mode of comparator 1)</i> , the window size Δ is also determined by the parameter <i>34.25 Comp1 range (comparison range of comparator 1)</i> . When the input A is not less than $B - \Delta$ and no greater than the input $B + \Delta$, the output is 1, otherwise the output is 0.	-
34.23 Comp1 A src	Select the input A signal source comparator 1.	Zero= [0]
P.01.00	User-defined pointer (01.00 from left to right take two digits as a set, indicates the parameter set, index in turn. The actual value is determined by the current value of the parameter.)	-
Zero	Always zero.	0
34.24 Comp1 B val	Set the value of the comparator 1 to input B.	120
[-32767,32767]		-
34.25 Comp1 range	Set the comparison range of comparator 1.	20
[-32767,32767]		
34.26 Comp1in abs	Enable or disable taking the absolute value of the comparator 1 to input A.	Disable = [0]
Disable	Disable	0
Enable	Enable	1
34.27 Comp1out inv	Enable or disable to reverse the output of comparator 1. Refer to parameters <i>34.26 Comp1 in abs (take input absolute value of Comparator 1)</i> for relevant available options.	Disable = [0]
34.28 Comp1 win	Enable or disable the window comparison mode of comparator 1. Refer to parameters <i>34.26 Comp1 in abs (take input absolute value of Comparator 1)</i> for relevant available options.	Disable = [0]



34 Logic Function	Edge counters, comparators, combinational logic, timers and other functions setting	Def
		...
34.36 Comp3 output	Monitor the output of comparator 3. The value range and units and other instructions refer to the parameter 34.22 Comp1 output (comparator 1 output).	0
34.37 Comp3 A src	Select the signal source of comparator 3 to input A. Refer to parameters 34.23 Comp1 A src (signal source of comparator 1 input A) for relevant available options.	Zero= [0]
34.38 Comp3 B val	Set the value of comparator 3 to input B. The value range and units and other instructions refer to the parameter 34.24 Comp1B val (the value of the comparator 1 input B).	100
34.39 Comp3 range	Set the comparison range of comparator 3. The value range and units and other instructions refer to the parameter 34.25 Comp1 range (comparison range of comparator 1).	20
34.40 Comp3 in abs	Enable or disable the absolute value of comparator 3 input A. Refer to parameters 34.26 Comp1 in abs (comparison range of comparator 1) for relevant available options.	Disable = [0]
34.41 Comp3 out inv	Enable or disable the output of comparator 3. Refer to parameters 34.26 Comp1 in abs (input absolute value of comparator 1) for relevant available options.	Disable = [0]
34.42 Comp3 win	Enable or disable the window comparison mode of comparator 3. Refer to parameters 34.26 Comp1 in abs (input absolute value of comparator 1) for relevant available options.	Disable = [0]
34.43 Logic1 A src	Select the signal source of logic 1 input A.	CONST.FALSE= [0]
P.01.00.00	User-defined pointer (01.00.00 from left to right take two digits as a set, indicates the parameter set, index, item number in turn. The actual value is determined by the current value of the parameter.)	-
CONST.FALSE	Always be 0	0
CONST.TRUE	Always be 1	1
DI1	Digital input DI1 (02.00 DI State,Position 0)	2048
DI2	Digital input DI2	2049
DI3	Digital input DI3	2050
DI4	Digital input DI4	2051
DI5	Digital input DI5	2052
DI6	Digital input DI6	2053
DI7	Digital input DI7	2054
34.44 Logic1 B src	Select the signal source of logic 1 input B. Refer to parameters 34.43 Logic1 A src (signal source of Logic 1 input A) for relevant available options.	CONST.FALSE= [0]



34 Logic Function	Edge counters, comparators, combinational logic, timers and other functions setting	Def
34.45 Logic1 C src	Select the signal source of logic 1 input B. Refer to parameters 34.43 Logic1 A src (signal source of Logic 1 input A) for relevant available options.	CONST.FALSE= [0]
34.46 Logic1 func	Selection the function of logic 1, that is, the logical operation. A, B, C, the three input signals in accordance with the specified logic operators forms the combination logic. The output of Logic 1 is monitored by parameter 34.00 Logic status (Logical state) Bit 6.	AND = [0]
AND	Logic and	0
OR	Logic or	1
NOT	Logic non	2
XOR	Logic exclusive or	3
Toggle	Logic reverse	4
NAND	Logic and non	5
...
34.51 Logic3 A src	Set the signal source of logic 3 input A . Refer to parameters 34.43 Logic1A src (Logic 1 input A signal source) for relevant available options.	CONST.FALSE= [0]
34.52 Logic3 A src	Set the signal source of logic 3 input B. Refer to parameters 34.43 Logic1A src (Logic 1 input A signal source) for relevant available options.	CONST.FALSE= [0]
34.53 Logic 3 A src	Set the signal source of logic 3 input C. Refer to parameters 34.43 Logic1A src (Logic 1 input A signal source) for relevant available options.	CONST.FALSE= [0]
34.54 Logic 3 func	Selection the function of logic 3, i.e. the logical operator. Refer to parameters 34.46 Logic1func (Logical 1 function) for relevant available options.	AND = [0]
34.55 Ontime1 enable src	Select the enable signal source of the timer 1. When the enable signal is equal to 0, timer stops; When the enable signal is equal to 1, timer starts.	CONST.FALSE= [0]
P.01.00.00	User-defined pointer (01.00.00 from left to right take two digits as a set, indicates the parameter set, index, item number in turn. The actual value is determined by the current value of the parameter).	-
CONST.FALSE	Always be 0	0
CONST.TRUE	Always be 1	1
DI1	Digital input DI1 (02.00 DI state, position 0)	2048
DI2	Digital input DI2	2049
DI3	Digital input DI3	2050
DI4	Digital input DI4	2051
DI5	Digital input DI5	2052
DI6	Digital input DI6	2053



34 Logic Function	Edge counters, comparators, combinational logic, timers and other functions setting	Def
DI7	Digital inputDI7	2054
34.56 Ontime1 comp val	Set the comparison value of timer 1 , Units as 0.1s.Timer 1 output by parameter 34.00 Logic status(Logical state) Bit 9 monitoring, When the count value is less than the comparison value, The output is 0, otherwise, The output is 1.	6553.5 s
[0.0, 6553.5]		
34.57 Ontime 1 cnt	Monitor timer 1 count value. Notice, this parameter is read – only.	0
[0, 65535]		-
...
34.61 Ontime3 enable src	Select the enable signal source of timer 3. Refer to parameters 34.55 Ontime1 enable src (The timer 1 lose enabling signal source) for relevant available options.	CONST.FALSE = [0]
34.62 Ontime3 comp val	Set the comparison value of timer 3. The value range and units and other instructions refer to the parameter 34.56 Ontime1comp val(Comparison value of timer 1).	6553.5 s
34.63 Ontime 3 cnt	Monitor the count value of timer 3. The value range and units and other instructions refer to the parameter 34.57 Ontime1cnt(Timer 1 count value).	0

35 Math function

35 Math function	Linear scaling、Arithmetic expression、integrator、Filter and other functions set up	Def
35.00 Linear 1 x src	Select the signal source of retiomatric conversion 1 input X.	Zero = [0]
P.01.00	User-defined pointer (01.00 from left to right take two digits a set, indicates the parameter set, index in turn. The actual value is determined by the current value of the parameter).	-
Zero	Always zero	0
35.01 Linear1 y	Set the value of the retiomatric conversion 1 output y. Note this parameter is read only. User can connect to the parameters by a pointer.	0
[-32767,32767]		-
35.02 Linear1 x max	Set and select the maximum value of the ratiometric conversion input X.	32767
[-32767,32767]		-
35.03 Linear1 x min	Set and select the minimum value of the ratiometric conversion input X.	0
[-32767,32767]		-



35 Math function	Linear scaling、Arithmetic expression、integrator、Filter and other functions set up	Def
35.04 Linear1 y max	Set and select the maximum value of the ratiometric conversion output Y.	32767
[-32767,32767]		-
35.05 Linear1 y min	Set and select the minimum value of the ratiometric conversion output Y.	0
[-32767,32767]		-
35.06 Linear1 x abs	Enable or disable the absolute value of the ratiometric conversion 1 input X. Disable = [0]	Disable = [0]
Disable	Disable	0
Enable	Enable	1
35.07 Linear1 y dec	Set the decimal digits of the ratiometric conversion output Y.	0
[0, 7]		-
35.08 Linear1 y unit	Select the unit of the ratiometric conversion 1 output Y.	0
[0, 63]		-
...
35.18 Linear3 x src	Select the signal source of the ratiometric conversion 3 input X. Refer to parameters 35.00 Linear1 x src (Proportional conversion 1 input X signal source) for relevant available options.	Zero = [0]
35.19 Linear3 y	Value of the ratiometric conversion 3 output Y. The value range and units and other instructions refer to the parameter 35.01 Linear1 output (Ratio conversion 1 output y value).	0
35.20 Linear3 x max	Set the maximum value the ratiometric conversion 3 input X. The value range and units and other instructions refer to the parameter 35.02 Linear1 x max (Proportional conversion 1 input x maximum).	32767
35.21 Linear3 x min	Set the minimum value the ratiometric conversion 3 input X. The value range and units and other instructions refer to the parameter 35.03 Linear1 x min (Proportional conversion 1 input x minimum value).	0
35.22 Linear3 y max	Set the maximum value the ratiometric conversion 3 input Y. The value range and units and other instructions refer to the parameter 35.04 Linear1 y max (Proportional conversion 1 output y maximum value).	32767
35.23 Linear3 y min	Set the minimum value the ratiometric conversion 3 input Y. The value range and units and other instructions refer to the parameter 35.06 Linear1 y min (Proportional conversion 1 input y minimum value).	0
35.24 Linear3 x abs	Enable or disable the absolute value of the ratiometric conversion 3 input X.	Disable = [0]
35.25 Linear3 y dec	Set the decimal digits of the ratiometric conversion 3 output Y.	0
35.26 Linear3 y unit	Select the unit of the ratiometric conversion 3 output Y.	0



35 Math function	Linear scaling、Arithmetic expression、integrator、Filter and other functions set up	Def
35.27 Math1 x src	Select the signal source of arithmetic 1 input X. User-defined pointer (01.00 from left to right take two digits as a set, indicates the parameter set,, index in turn. The actual value is determined by the current value of the parameter).	Zero = [0]
P.01.00		-
Zero	Always zero	0
35.28 Math1 y src	Select the signal source of arithmetic 1 input Y. Refer to parameters 35.27 Math1 x src(Arithmetic 1 input X signal source)for relevant available options.	Zero = [0]
35.29 Math1 func	Select the function of arithmetic 1, i.e. the arithmetic operator. Input X and Y in accordance with the specified arithmetic operator to form an arithmetic expression.	Add = [0]
Add	$x + y$	0
Sub	$x - y$	0
Min	The small one of X and Y	0
Max	The big one of X and Y	0
Abs	Absolute value of X	0
Mul	$x * y / k$ (k is a scaling factor)	0
Div	$X * k / y$ (k is a scaling factor)	0
35.30 Math 1 factor	When the parameter 35.29 Math1 func(Function of arithmetic 1)select multiply or divide as an arithmetic operator, set the scaling factor k of arithmetic 1.	0
[-32768,32767]		-
35.31 Math1 output	Monitor the output of arithmetic 1. Note that this parameter is read – only. It can be connected to the parameter by a pointer.	0
[-32768,32767]		-
...
35.37 Math 3 x src	Select the signal source of arithmetic 3 input X. Refer to parameters 35.27 Math1 x src(Arithmetic 1 input X signal source)for relevant available options.	Zero = [0]
35.38 Math3 y src	Select the signal source of arithmetic 3 input Y. Refer to the parameters 35.27 Math1 x src(Arithmetic 1 input X signal source)for relevant available options.	Zero = [0]
35.39 Math 3 func	Select the function of arithmetic 1, i.e. the arithmetic operator. Refer to parameters 35.29 Math1 func(Function of arithmetic 1)for relevant available options.	Add = [0]
35.40 Math 3 factor	When parameters 35.39 Math3 func(Function of arithmetic 3)select multiply or divide as an arithmetic operator, set the scaling factor k of arithmetic 3.	0



35 Math function	Linear scaling、Arithmetic expression、integrator、Filter and other functions set up	Def
35.41 Math 3 output	Monitor the output of arithmetic 3. Note that this parameter is read – only. It can be connected to the parameter by a pointer.	0
35.42 Integrator1src	Select the signal source of integrator1 input. Refer to parameters 35.27 Math1 x src (Arithmetic 1 input X signal source) for the relevant available options.	Zero = [0]
35.43 Integrator 1 output	Monitor the output of integrator 1. Note that this parameter is read – only. It can be connected to the parameter by a pointer.	0
[0, 65535]		-
35.44 Integrator1scaling		0
[0, 65535]		-
.....
35.48 Integrator3src	Select the signal source of integrator3 input. Refer to parameters 35.42 Integrator1 src (1 input signal source integrator) for relevant available options.	
35.49 Integrator3output	Monitor the output of integrator 3. It can be connected to the parameter by a pointer.	
35.50 Integrator3scaling		
35.51 Filter1 input src	Select the signal source of a low pass filter 1 input.	Zero = [0]
P.01.00	User-defined pointer (01.00 from left to right take two digits as a set, indicates the parameter set, index in turn. The actual value is determined by the current value of the parameter).	-
Zero	Always zero	0
35.52 Filter1 output	Monitor the output of the low pass filter 1. Note that this parameter is read – only. It can be connected to the parameter by a pointer.	0
[0, 65535]		-
35.53 Filter1 timeconst	Set the filter time constant of low pass filter 1. Unit is 0.01s.	1.00 s
[0.00, 655.35]		-
.....
35.57 Filter3 input src	Select the signal source of a low pass filter 3 input. Refer to parameters 35.51 Filter1 src (Filter 1 input signal source) for relevant available option.	Zero = [0]
35.58 Filter 3 output	Monitor the output of the low pass filter 3. The value range and units and other instructions refer to the parameter 35.52 Filter1 output (Filter 1 output).	0
35.59 Filter 3 time const	Set the filter time constant of the low pass filter 3. The value range and units and other instructions refer to the parameter 35.53 Filter1 timeconst (Filter 1 time constant).	1.00 s



40 Pos control

40Pos control	Position control, positioning control	Def
40.00 Pos ctrl mode	Position control mode	Disable
POS CTRL	Positioning control, including the trajectory planning. Can support for fixed length and fixed angle control.	0
SERVO CTRL	servo control supports for conventional servo function.	1
ZERO SERVO	Zero servo control.	2
40.01 Pos ctrl enable	Position control enable signal source selection	CONST.FALSE
40.02 Pos mark type	Position reference signal type.	Zmark = [0]
Zmark	Take Z pulse as reference signal	0
DI	Take the external terminal signal as reference signal the signal source is specified by the parameters of 40.03.	1
40.03 Pos mark src	Selection of external reference signal source.	CONST.FALSE
40.04 Orient dir	Direction of spindle orientation.	0
AUTO	Automatic	0
FWD	Positive	1
REV	Reverse	2
40.05 Pos spd set	Spindle positioning speed size	300rpm
[0, 30000]		
40.06 Pos refs	Selection of the location given signal source	PULSE = [0]
PULSE	The position given source is given by the pulse train	0
FIELDBUS	The location given source is given by the Fieldbus	1
40.07 Pos ctrl gain	Position loop gain	40Hz
[1, 100]		
40.08 Pos ffwd filter	filtering time of position feedforward	2.0ms
[0.0, 50.0]		
40.09 Pos sel in1	Signal source 1 of multi segment position selection	CONST.FALSE
40.10 Pos sel in2	Signal source 2 of multi segment position selection	CONST.FALSE



40Pos control	Position control, positioning control	Def
40.11 Inc pos sel in1	Signal source 1 of incremental position selection	CONST.FALSE
40.12 Inc pos sel in2	Signal source 2 of incremental position selection	CONST.FALSE
40.13 Inc pos sel in3	Signal source 3 of incremental position selection	CONST.FALSE
40.14 Feed fwd rqst	Selection of forward feed request signal source	CONST.FALSE
40.15 Feed rev rqst	Selection of reverse feed request signal source	CONST.FALSE
40.16 Pos rpt rqst	Selection of repeat location request signal source	CONST.FALSE
40.17 Pos err lim	The allowable location error of the positioning	100
[10, 1000]		
40.18 Pos preset1_rev	The number of cycles of the set value for multi segment position 1.	0
[-32768, 32767]		
40.19 Pos preset1_pul	The number of pulses of the set value for multi segment position 1.	0
[-32768, 32767]		
40.20 Pos preset2_rev	The number of cycles of the set value for multi segment position 2.	0
[-32768, 32767]		
40.21 Pos preset 2_pul	The number of pulses of the set value for multi segment position 2.	0
[-32768, 32767]		
40.22 Pos preset 3_rev	The number of cycles of the set value for multi segment position 3.	0
[-32768, 32767]		
40.23 Pos preset 3_pul	The number of pulses of the set value for multi segment position 3.	0
[-32768, 32767]		
40.24 Pos preset4_rev	The number of cycles of the set value for multi segment position 4.	0
[-32768, 32767]		
40.25 Pos preset4_pul	The number of pulses of the set value for multi segment position 4.	0
[-32768, 32767]		



40Pos control	Position control, positioning control	Def
40.26 Inc pos preset1_rev	The number of cycles of the set value for incremental position 1.	0
40.27 Inc pos preset1_pul	The number of pulses of the set value for incremental position 1.	0
40.28 Inc pos preset2_rev	The number of cycles of the set value for incremental position 2.	0
40.29 Inc pos preset2_pul	The number of pulses of the set value for incremental position 2.	0
40.30 Inc pos preset3_rev	The number of cycles of the set value for incremental position 3.	0
40.31 Inc pos preset3_pul	The number of pulses of the set value for incremental position 3.	0
40.32 Inc pos preset4_rev	The number of cycles of the set value for incremental position 4.	0
40.33 Inc pos preset4_pul	The number of pulses of the set value for incremental position 4.	0
40.34 Inc pos preset5_rev	The number of cycles of the set value for incremental position 5.	0
40.35 Inc pos preset5_pul	The number of pulses of the set value for incremental position 5.	0
40.36 Inc pos preset6_rev	The number of cycles of the set value for incremental position 6.	0
40.37 Inc pos preset6_pul	The number of pulses of the set value for incremental position 6.	0
40.38 Inc pos preset7_rev	The number of cycles of the set value for incremental position 7.	0
40.39 Inc pos preset7_pul	The number of pulses of the set value for incremental position 7.	0
40.40 Inc pos preset8_rev	The number of cycles of the set value for incremental position 8.	0
40.41 Inc pos preset8_pul	The number of pulses of the set value for incremental position 8.	0
40.42 Force home rqst	signal source of force back to zero request.	CONST.FALSE

42 Mech brake

42Mech brake	Mechanical brake control of lifting equipment	Def
42.00 Mech brake enable	The mechanical brake enable control	Disable
Disable	Not enabled. Brake output signal is always turn off.	0
Enable	Enabled. No brake response.	1



42Mech brake	Mechanical brake control of lifting equipment	Def
Enable with ack	Enabled, has brake response. When the response is abnormal, system will produce a protective action.	2
42.01 Mech ack src	The mechanical brake response signal source, only effective when the value of the parameters 42.00 Mech brake enable is Enable with ack.	False
P.01.00.00	User-defined pointer (01.00.00 from left to right take two digits as a set, indicates the parameter set, index, item number in turn. The actual value is determined by the current value of the parameter).	-
CONST.FALSE	Always be 0	0
CONST.TRUE	Always be 1	1
DI1	Digital input DI1 (02.00 Dlstate, position 0)	2048
DI2	Digital input DI2	2049
DI3	Digital input DI3	2050
DI4	Digital input DI4	2051
DI5	Digital input DI5	2052
DI6	Digital input DI6	2053
DI7	Digital input DI7	2054
42.02 Brake open delay	Time required for the mechanical brake on command issued to the brake fully open. Please set according to the specifications of the brake. The unreasonable setting will cause damage to the brake due to friction.	800ms
[200ms, 2000ms]		
42.03 Brake close delay	Time required for the mechanical brake off command issued to the brake completely shut down. Please set according to the specifications of the brake. The Unreasonable setting will cause hook when shutdown.	800ms
[200ms, 2000ms]		
42.04 Brake open torque	At start time, mechanical brake actuator output torque setting before issuing commands.	100.0%
[50.0%, 200.0%]		0.1%
42.05 Brake check rqst src	Request signal source of the brake check. The drive checks the signal before each run. When effective, drive runs the brake check procedures. When invalid, drive runs the normal operation of the crane control program.	False
P.01.00.00	User-defined pointer (01.00.00 from left to right take two digits as a set, indicates the parameter set, index, item number in turn. The actual value is determined by the current value of the parameter).	-
CONST.FALSE	Always be 0	0



42Mech brake	Mechanical brake control of lifting equipment	Def
CONST.TRUE	Always be 1	1
DI1	Digital inputDI1(02.00 DI state,position0)	2048
DI2	Digital inputDI2	2049
DI3	Digital inputDI3	2050
DI4	Digital inputDI4	2051
DI5	Digital inputDI5	2052
DI6	Digital inputDI6	2053
DI7	Digital inputDI7	2054
42.06 Brake check torque	When the mechanical brake is being checked, set the drive output torque. Once after the preset check time, drive detected motor slip will emit the fault prompt.	100.0%
[50.0%, 200.0%]		0.1%
42.07 Brake check time	Mechanical brake check, the drive torque retention time.	2.0s
[0.5s, 10.0s]		
42.08 Brake slip limit	Check brake. Determine whether the speed level slips or not	30rpm
[15rpm, 60rpm]		
42.09 Brake open trq mem	Brake completely open. Drive motor torque, used for diagnosis, read-only.	0.1%
42.10 Brake close trq mem	The brake is closing. Drive motor torque, used for diagnosis, read-only.	0.1%

43 Winder

43 Winder	For rewinding, winding, constant tension control, etc	Def
43.00 Winder mode	Winding mode	Winder = [0]
Winder		0
Unwinder		1
43.01 Gear ratio	Mechanical transmission ratio	1.000
[0.001, 30.000]		



43 Winder	For rewinding, winding, constant tension control, etc	Def
43.02 Thickness	Material thickness	0.100mm
[0.001, 30.000]		
43.03 Web width	Strip material width	1000mm
[1, 30000]		
43.04 Density	Material density	1000kg/m ³
[1, 30000]		
43.05 Line spd max	Maximum linear speed	300.0m/min
[0.1, 3000.0]		
43.06 Line spd src	Selection of line speed input signal source	AI1 scaled
43.07 Dia calc mode	Roller diameter calculation method	LINESPEED
LINE SPEED		0
ENCODER		1
ROLL_PULSE		2
EXT_FBK	Calculated by parameter 43.08	3
43.08 Roll dia src	Selection of signal source for external calculation of the roller diameter	AI1 scaled
43.09 Roll pulse src	Selection of drum pulse signal source	CONST.FALSE
43.10 Roll pulse scaling	Drum pulse rate, i.e. the number of pulses generated by the drum	1
43.11 Core diameter	Empty disc diameter	100mm
43.12 Full roll dia	Full size disc diameter	1
43.13 Dia reset rqst	Selection of the Diameter reset request signal source	CONST.FALSE
43.14 Dia preset rqst	Selection of volume diameter preset request signal source	CONST.FALSE
43.15 Dia preset data	Diameter preset value	100mm
43.16 Min spd dia calc	Maximum speed allowed for calculation of roll diameter	30rpm
43.17 Tense src	Selection of the tension given source	AI2 scaled



43 Winder	For rewinding, winding, constant tension control, etc	Def
43.18 Tmax	Maximum tension value setting	30.0N
43.19 Tape mode	Tension taper mode selection	0
43.20 Max tape	Maximum gain of tension taper control	0.0%
[0, 100.0]		

47 Multi step ctrl

47Multi step ctrl	Simple multi stage speed circle control to save PLC and other control equipments. Support 16 stage speed and time definitions.	Def
47.00 Speed out	Module speed output, read-only.The speed of a given pointer is controlled by pointing to the parameter P47.00.	-
47.01 Run enable src	Multi stage speed operation enables the signal source, the Bit pointer.The default is controlled by a motor operating signal.	P.06.00.04
47.02 Mode	Select the multi stage speed control mode.	0
Single	Single cycle, And keep the final value.	0
Repeat	Circulation mode.	1
Single & Stop	Single cycle,And automatically shut down. Restart need to issue a stop command.	2
47.03 Save mode	Shutdown or power down whether in memory status	0
Disable	Not enabled. Shut down with no nOMEMORY.	0
Enable	Storage. Stop memory operation phase.	1
47.04 Stage	At the current stage of the multi segment speed loop, user can edit as the starting phase.	0
[0, 15]		
47.05 Timer	The current cycle phase corresponds to the clock, users can edit as initial time.	0
[0.0, 6553.5]		0.1min
47.06 TimeSet 0	The zeroth section corresponds to the time setting.To set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min



47Multi step ctrl	Simple multi stage speed circle control to save PLC and other control equipments. Support 16 stage speed and time definitions.	Def
47.07 TimeSet 1	The first section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.08 TimeSet 2	The second section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.09 TimeSet 3	The third section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.10 TimeSet 4	The fourth section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.11 TimeSet5	The fifth section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.12 TimeSet 6	The sixth section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.13 TimeSet 7	The seventh section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.14 TimeSet 8	The eighth section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.15 TimeSet 9	The nineth section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.16 TimeSet 10	The tenth section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.17 TimeSet 11	The eleventh section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min



47Multi step ctrl	Simple multi stage speed circle control to save PLC and other control equipments. Support 16 stage speed and time definitions.	Def
47.18 TimeSet 12	The twelfth section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.19 TimeSet 13	The thirteenth section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.20 TimeSet 14	The fourteenth section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.21 TimeSet 15	The fifteenth section corresponds to the time setting. Set to 0 to indicate that the segment is ignored and skipped automatically.	0
[0.0, 6553.5]		0.1min
47.22 SpeedSet 0	Corresponding speed settings of the segement 0.	0
[0, 65535]		1rpm
47.23 SpeedSet 1	Corresponding speed settings of the segement 1.	0
[0, 65535]		1rpm
47.24 SpeedSet 2	Corresponding speed settings of the segement 2.	0
[0, 65535]		1rpm
47.25 SpeedSet 3	Corresponding speed settings of the segement 3.	0
[0, 65535]		1rpm
47.26 SpeedSet 4	Corresponding speed settings of the segement 4.	0
[0, 65535]		1rpm
47.27 SpeedSet 5	Corresponding speed settings of the segement 5.	0
[0, 65535]		1rpm
47.28 SpeedSet 6	Corresponding speed settings of the segement 6.	0
[0, 65535]		1rpm
47.29 SpeedSet 7	Corresponding speed settings of the segement 7.	0



47Multi step ctrl	Simple multi stage speed circle control to save PLC and other control equipments. Support 16 stage speed and time definitions.	Def
[0, 65535]		1rpm
47.30 SpeedSet 8	Corresponding speed settings of the segement 8.	0
[0, 65535]		1rpm
47.31 SpeedSet 9	Corresponding speed settings of the segement 9.	0
[0, 65535]		1rpm
47.32 SpeedSet 10	Corresponding speed settings of the segement 10.	0
[0, 65535]		1rpm
47.33 SpeedSet 11	Corresponding speed settings of the segement 11.	0
[0, 65535]		1rpm
47.34 SpeedSet 12	Corresponding speed settings of the segement 12.	0
[0, 65535]		1rpm
47.35 SpeedSet 13	Corresponding speed settings of the segement 13.	0
[0, 65535]		1rpm
47.36 SpeedSet 14	Corresponding speed settings of the segement 14.	0
[0, 65535]		1rpm
47.37 SpeedSet 15	Corresponding speed settings of the segement 15.	0
[0, 65535]		1rpm

48Switch Sync

48 Switch sync	Used for synchronous or asynchronous AC motors soft start,power frequency synchronous,etc. To achieve the impact of the motor without access to the grid.	Def
48.00 status	Status word for synchronous switching controller.	0



48 Switch sync	Used for synchronous or asynchronous AC motors soft start,power frequency synchronous,etc. To achieve the impact of the motor without access to the grid.			Def
	Position	Name	Information	
	0	Sync out	1=Switching action. 0=Switching no action.	
	1:15	Reserved		
48.01 Phase err	The phase error value of the motor and the power grid, read-only.			-
48.02 Switch enable	Enable the synchronous switching			Disable = [0]
48.03 Phase comp	The phase compensation size for synchronous switching control is used to compensate for the phase lag caused by the contactor delay and the load.			6deg
48.04 Speed comp	The phase of the motor needs to be modified to synchronize with the grid before the synchronous switching. When enable the synchronous switching, the speed compensation is automatically added to the given speed. Read-only.			0

49 Data storage

49 Data storage	16 bit data storage parameters that can be written or read using pointer settings of other parameters	Def
49.00 Data storage1	Data storage parameter 1.	0
[-32768,32767]	16 bit data.	-
49.01 Data storage2	Data storage parameter 2.	0
[-32768,32767]	16 bit data.	-
49.02 Data storage3	Data storage parameter 3.	0
[-32768,32767]	16 bit data.	-
49.03 Data storage4	Data storage parameter 4.	0
[-32768,32767]	16 bit data.	-
49.04 Data storage5	Data storage parameter 5.	0
[-32768,32767]	16 bit data.	-
49.05 Data storage6	Data storage parameter 6.	0



49 Data storage	16 bit data storage parameters that can be written or read using pointer settings of other parameters	Def
[-32768,32767]	16 bit data.	-
49.06 Data storage7	Data storage parameter 7.	0
[-32768,32767]	16 bit data.	-
49.07 Data storage8	Data storage parameter 8.	0
[-32768,32767]	16 bit data.	-

50 Fieldbus

50 Fieldbus	Field bus setting	Def
50.00 Fieldbus enable	Disable or enable the fieldbus function.	Disable = [0]
Disable	Disable	0
Enable	Enable	1
50.01 Comm loss func	Select the action to be performed when the field bus communication is lost.	No action = [0]
No action	No action	0
Fault	Report failure	1
Alarm	Report alarm	2
50.02 Comm loss time	Set the detection time of the loss of the fieldbus communication, Unit is 0.1s.	2.0 s
[0.0, 60.0]	-	-
50.03 Act1 src		
50.04 Act2 src		
50.05 Data in1	Select the data 1 transferred from the drive to the fieldbus module.	Status word = [1536]
P.01.00	User-defined pointer (01.00 from left to right take two digits as a set. In turn, said, indicates the parameter set, index in turn. The actual value is determined by the current value of the parameter).	—
Zero	Always zero	0
Status word	Refer to parameters 06.00 Status word1 (status word 1)	1536



50 Fieldbus	Field bus setting	Def
Act1		
Act2		
...
50.16 Data in12	Select the data 12 transferred from the drive to the fieldbus module.	-
50.17 Data out1	Select the data 1 transferred from the field bus module to the drive.	Control word = [1541]
P.01.00	User-defined pointer (01.00 from left to right take two digits as a set, indicates the parameter set, index in turn. The actual value is determined by the current value of the parameter).	-
Zero	Always zero	0
Fieldbus ref1	See parameters 02.15 Fieldbus ref1 (Field bus given 1)	527
Fieldbus ref2	See parameters 02.16 Fieldbus ref2 (Field bus given 2)	528
Control word	See parameters 06.05 Control word (Control word)	1541
...
50.28 Data out12	Select the data 12 transferred from the field bus module to the drive.	Zero = [0]

51 Embedded Modbus

51 Embedded Modbus	Embedded Modbus settings	Def
51.00 Modbus enable	Disable or enable the built-in Modbus communication function. When not in use, disable it can reduce the CPU load.	Enable = [1]
Disable	Disable	0
Enable	Enable	1
51.01 Node address	Set the node address of the Modbus communication, among which 0 is the broadcast address.	1
[0, 247]		-
51.02 Baudrate	Set the serial baud rate of the Modbus communication, Unit is Bps.	9600 = [1]
4800		0
9600		1
19200		2



51 Embedded Modbus	Embedded Modbus settings	Def
38400		3
57600		4
115200		5
230400		6
460800		7
921600		8
51.03 Format	Set the serial frame format of the Modbus communication.	8, N, 1= [0]
8, N, 1	8 bit data, No verification, 1stop bit	0
8, N, 2	8 bit data, No verification, 2stop bits	1
8, E, 1	8 bit data, Parity check, 1stop bit	2
8, O, 1	8 bit data, Odd parity check, 1stop bit	3
51.04 Master mode	Set Modbus to master mode. Note: the current master mode only supports 06 function code, that is to write a single register.	Disable= [0]
Disable	Disable	0
Enable	Enable	1
51.05 Reg data	When the Modbus is working on the master station, set the data source of the target register.	Zero = [0]
P.01.00	User-defined pointer (01.00 from left to right take two digits as a set, in turn, said, indicates the parameter set, index in turn. The actual value is determined by the current value of the parameter).	-
Zero	Always zero	0
51.06 Reg addr	Modbus work as the master station, set the address of the target register.	2
[0, 65535]		
51.07 Comm cycle	Modbus work as the master station, set the communication cycle. Unit is 1ms.	100 ms
[0, 65535]	-	-
51.08 Slave addr	Modbus work as the master station, set the destination node address.	0
[0, 247]		



51 Embedded Modbus	Embedded Modbus settings	Def
51.09 Diagnostics	Diagnostic information for Modbus Communications.	0
51.10 Packet recv count	Count the message frames for this node received from the Modbus bus. Note: this counter counts only the message frames sent to this node(Broadcast frame included)	
[0, 65535]		
51.11 Packet send count	Count the message frames for this node sent to the Modbus bus.	
[0, 65535]		
51.12 Bus message count	Count all the message frames detected by this node from the Modbus bus.	
[0, 65535]		
51.13 UART error count	Count the number of serial port errors when the node receives the message frame from the Modbus	
[0, 65535]	Normally the baud rate, frame format error, will therefore increase the error.	
51.14 CRC error count	Count the number of CRC verification errors for this node to receive messages from Modbus bus.	
[0, 65535]	CRC is normally prone to errors when communication is disturbed or protocol is inconsistent. Make sure that the master-slave communication GND has been connected together.	
51.15 Frame error count	Count other errors that occur when the node receives the message frame from the Modbus bus, such as frame length error, frame timeout, etc.	
[0, 65535]	Check communication agreement.	



52 CANopen

52 CANopen	CANopenBus communication setup	Def
52.00 node address	CANopen slave node address.	0
[0, 127]		
52.01 Baud rate	CANopen communication baud rate	1Mbps = [8]
10k bps		0
20k bps		1
50k bps		2
125k bps		3
250k bps		4
500k bps		5
625k bps		6
800k bps		7
1M bps		8
52.02 PDO4 cfg	PDO4 local configuration options	Disable
Disable		0
Enable		1
52.03 RPDO4 enable	RPDO4 enable	Disable
Disable		0
Enable		1
52.04 RPDO4 type	RPDO4 transmission type	255
[0, 255]		
52.05 RPDO4 obj1 index	RPDO4 Data 1 Index	0
52.06 RPDO4 obj1 subid	RPDO4 Data 1 sub index	0
52.07 RPDO4 obj2 index	RPDO4 Data 2 Index	0
52.08 RPDO4 obj2 subid	RPDO4 Data 2 sub index	0



52 CANopen	CANopenBus communication setup	Def
52.09 RPDO4 obj3 index	RPDO4 Data 3 Index	0
52.10 RPDO4 obj3 subid	RPDO4 Data 3 sub index	0
52.11 RPDO4 obj4 index	RPDO4 Data 4 Index	0
52.12 RPDO4 obj4 subid	RPDO4 Data 4 sub index	0
52.13 TPDO4 enable	TPDO4 enable	Disable
Disable		0
Enable		1
52.14 TPDO4 type	TPDO4 transmission type	255
52.15 TPDO4 event time	TPDO4 event timing	100
52.16 TPDO4 obj1 index	TPDO4 Data 1 Index	0
52.17 TPDO4 obj1 subid	TPDO4 Data 1 sub index	0
52.18 TPDO4 obj2 index	TPDO4 Data 2 Index	0
52.19 TPDO4 obj2 subid	TPDO4 Data 2 sub index	0
52.20 TPDO4 obj3 index	TPDO4 Data 3 Index	0
52.21 TPDO4 obj3 subid	TPDO4 Data 3 sub index	0
52.22 TPDO4 obj4 index	TPDO4 Data 4 Index	0
52.23 TPDO4 obj4 subid	TPDO4 Data 4 sub index	0
52.24 NMTstage	NMT status	0
Init		0
Disable		4
Enable		5
Stand by		127
52.25 CAN error	read-only.	0
52.26 CAN err counter	read-only.	0



52 CANopen	CANopenBus communication setup	Def
52.27 CAN RX msg cnt	Count the number of the data packets received by CAN.	0
52.28 CAN TX msg cnt	Count the number of the data packets sent by CAN.	0
52.29 DSP402 state machine	DSP402 state machine.	0
Not rdy swich on		0
Switch on disable		1
Ready switch on		2
Switch on		3
Operation enable		4
Device fault		5
52.30 Control word	Control word.	0
52.31 Status word	Status word.	0



60 Motor control

60 Motor control	Motor control set	Def
60.00 Carrier freq set	Carrier frequency setting of the drive. Affected by the temperature of the drive and the frequency of the motor, The actual carrier frequency may be different, refer to parameter P09.04.	Type decision
[2kHz, 812kHz]	Enhance the carrier can reduce motor noise. For long-distance transmission, if no reactor at the output side, it is necessary to reduce the carrier to reduce the reflected voltage of motor, to avoid motor insulation failure and burned.	
60.01 Slip gain	Slip compensation gain of the asynchronous motor.	1.00
[0.00, 1.00]	In open loop control, it is used to modify the speed estimation value. Closed-loop control with encoder, it is used to correct the error of the rotor time constant, so that the motor is in the best state.	
60.02 Torque boost	Manual boost capacity of the motor torque. Normally no need to set.	0.00
[0.00, 1.00]	Manual torque boost ratio, relative to the rated torque of the motor.	
60.03 SC brake time	Synchronous motor to start short circuit braking time.	0.0s
[0.0s, 100.0s]	Start short circuit braking time.	-
60.04 Res damp gain	Oscillation suppression gain.	0.50
[0.00, 3.00]	The open loop V/F control applicable for synchronous and asynchronous motors.	
60.05 Excitation time	The pre excitation time of vector control of the asynchronous motor.	0.0s
[0.0s, 5.0s]	Increasing the pre excitation time can improve the starting torque.	
60.06 Fly restart	Speed tracking enable control can only be used in open loop V/F control mode of the asynchronous motor.	Disable = [0]
Disable	Speed tracking function disabled.	0
Enable	Speed tracking function enabled.	1
60.07 Vdc max control	Activate or disable the overvoltage stall function by this parameter.	Enable = [1]
Disable	Disable over voltage stall function.	0
Enable	Enable over voltage stall function.	1
Enable at equal	Activation of the overvoltage stall, but is invalid in the deceleration. Used for periodic load equipment.	2
60.08 Vdc min control	Activate or disable the under-voltage stall function by this parameter.	Disable = [0]
Disable	Disable under voltage stall function.	0



60 Motor control	Motor control set	Def
Enable	Enable under voltage stall function.	1
60.09 Auto phase mode	Search mode for initial phase of the synchronous motor. Auto = [0]	
Auto	Enable automatically. Normally performs after power up and coast stop.	0
Always	Always enable the phase search function.	1
Disable	Always disable the phase search function.	2
60.10 PM type	The rotor type of the synchronous motor. The change of the search mode caused by the structure of the rotor. Type 1 non standard Type 2 standard	[1]
Type 1 non standard	Special phase search mode, suitable for partially embedded motor, such as squirrel cage motor.	0
Type 2 standard	Standard phase search method , Suitable for surface mount motors and most embedded motors	1
60.11 Cur inject	Synchronous motor phase to find the size of the injected current. For the case of a synchronous motor with squirrel cage, as well as big rating drive control small rating motor, needs to be slightly increased.	30%
[0, 100]		
60.12 Phase comp	The phase compensation value of the synchronous motor. For quick start application 90° is the best, while ordinary start 30° is the best. Normally set in the range of 0 to 90° .	30deg
[-180, 180]		
60.13 Over modu gain	Over modulation output intensity.	15%
[0, 15]		
60.14 PWM mode	PWM modulation mode.	THD = [0]
AUTO THD	The PWM mode is automatically adjusted to minimize the output voltage harmonics.	0
AUTO SL	The PWM mode is automatically adjusted to minimize the IGBT switching loss.	1
SVPWM	SVPWM represents a continuous PWM mode, DPWM means intermittent PWM mode.	2
DPWM MIN	DPWM MIN mode, micro drive series driver does not support DPWM mode.	3
DPWM MAX	DPWM MAX mode	4
DPWM3	DPWM3 mode	5
DPWM2	DPWM2 mode	6



60 Motor control	Motor control set	Def
DPWM1	DPWM1 mode	7
DPWM0	DPWM0 mode	8
60.15 Flux brake gain [0, 100]	Magnetic flux braking gain	0%
60.16 Energy opt gain [0, 50]	Energy-saving control gain of the asynchronous motor.	0%
60.17 FOC spd max [0, 32767]	Maximum allowable speed for closed loop control. If exceeds the maximum will switch to the open loop control.	30000rpm

61 Encoder config

61Encoder config	Encoder config	Def
61.00 Pulse per rev [100, 65535]	Define the resolution of the encoder, i.e. the number of pulses per revolution. Encoder resolution. Without octaves.	2048 -
61.01 Electric offset [0° , 360°]	Define the offset angle of the encoder Z pulse relative to the dq coordinate system. Only applicable to synchronous motor.	0 1°
61.02 Encoder phase Normal Invert	Define the phase of the encoder signal. Normal phase, i.e. A is ahead of B the speed is positive. Inverse phase, i.e. A is ahead of B the speed is negative.	Normal = [0] 0 1
61.03 Enc counter mode Quadrature Direction	Define the encoder count mode. Count the way of quadrature counting, automatically 4 octave. Pulse plus direction count, automatically 2 octave.	Quadrature= [0] 0 1
61.04 Pulse cnt mode	Define the count mode of the pulse inputs used for the location given. Refer to parameters 61.03 Enc counter mode(Encoder count mode)for relevant available options.	Quadrature= [0]
61.05 Gear den [1, 65535]	The electronic gear denominator of the position pulse input. Pulse input used for the given position.	1000 -



61Encoder config	Encoder config	Def
61.06 Gear num	The electronic gear molecule of the position pulse input.	1000
[1, 65535]	Pulse input used for the given position.	-
61.07 Encoder enable	The enable encoder module, can only be used for small micro series driver.	Disable = [0]
Disable	Disable encoder function.	0
Enable	Enable encoder function.	1

62 Motor parameter

62 Motor parameter	Motor parameter setting	Def
62.00 Pole pairs	The pole number of the motor. Calculate automatically before drive running. The correct setting of the rated speed and rated frequency is the premise of correct calculation.	Model correlation
[1, 30]	The pole number of the motor. Applicable to all types of AC motors.	-
62.01 No-load current	No-load current of the asynchronous motor. When using the synchronous motor, this parameter is retained.	Model correlation
[0A, 400.0A]	This parameter is usually obtained by auto tuning. You can also manually set.	
62.02 Stator resist	Stator phase resistance of motor. Applicable to all types of AC motors.	Model correlation
[0 Ω , 65.535 Ω]	This parameter is usually obtained by auto tuning, You can also manually set.	
62.03 Rotor resist	Rotor phase resistance of motor. Only for induction motors.	Model correlation
[0 Ω , 65.535 Ω]	This parameter is usually obtained by auto tuning, You can also manually set.	
62.04 Stator induct	Stator phase inductance of electric machine.	Model correlation
[0mH, 3000.0mH]	This parameter is usually obtained by auto tuning, You can also manually set.	
62.05 Leak induct coef	Leakage inductance coefficient of electric machine. Only for induction motors.	Model correlation
[0%, 20.0%]	This parameter is usually obtained by auto tuning. You can also manually set.	
62.06 d-axis induct	D axis inductance. Only applicable to synchronous motor.	Model correlation
[0.00mH, 300.00mH]	This parameter is usually obtained by auto tuning. You can also manually set.	
62.07 q-axis induct	q axis inductance. Only applicable to synchronous motor.	Model correlation
[0.00mH, 300.00mH]	This parameter is usually obtained by auto tuning. You can also manually set.	



62 Motor parameter	Motor parameter setting	Def
62.08 Back EMF coef	Back EMF coefficient of synchronous motor, only applicable to synchronous motor. Automatic correction during drive operation.	Model correlation
[0.0mV, 3000.0mV]	This parameter is usually obtained by auto tuning. You can also manually set.	0.1mV/rpm
62.09 Core sat coef	Iron core saturation coefficient of electric machine.	80%
[50, 100]	This parameter is usually obtained by auto tuning. You can also manually set.	
62.10 PM with squirrel	Synchronous motor with a squirrel cage for 1, auto tuning can be obtained.	0
[50, 100]	This parameter is usually obtained by auto tuning. You can also manually set.	

63 Startup parameter

63 Startup parameter	Start Related Parameter Settings	Def
63.00 Motor nom power	Define motor rated power. This setting must be consistent with the motor nameplate value. If one drive control the multi motors, input motor total power. Be careful: When the drive is running, this parameter cannot be changed.	Default values depend on Models
[0.00kW, 630.00 kW]		-
63.01 Motor nom volt	The rated motor voltage is defined as the root mean square voltage between the basic lines supplied to the motor at the rated operating point. This setting must be consistent with the motor nameplate value. Be careful: <ul style="list-style-type: none">For permanent magnet motors, means the rated speed of the back EMF. Do not need very accurate, because the drive automatic recognition of back EMF in operation.When the drive is running, the parameter cannot be changed.	Default values depend on Models
[0 V, 1000 V]		
63.02 Motor nom current	Define motor rated current. The value must be equal to the motor nameplate. If the drive control multi motors, input motor total current. Be careful: <ul style="list-style-type: none">The correct operation of the motor requires no more than ninety percent of the rated current of the drive.When the drive is running, This parameter cannot be changed.	Default values depend on Models
[0.0 A, 1200.0 A]		
63.03 Motor nom speed	Define motor rated speed. This setting must be consistent with the motor nameplate value. Be careful : When the drive is running, this parameter cannot be changed.	Default values depend on Models



63 Startup parameter	Start Related Parameter Settings	Def
[0 RPM, 30000 RPM]		
63.04 Motor nom freq	Define motor rated frequency. Be careful : When the drive is running, the parameter cannot be changed.	50Hz
[0 Hz, 1000 Hz]		
63.05 Motor type	Select motor type. Be careful: When the drive is running, the parameter cannot be changed.	ACIM = [0]
ACIM	Asynchronous motor, three phase AC induction motor, Squirrel cage rotor.	0
PMSM	Permanent magnet motor.Three phase AC synchronous motor, Permanent magnet rotor and sinusoidal back EMF voltage.	1
SynRM	Synchronous reluctance motor.Three phase AC synchronous motor with non permanent salient pole rotor.	2
63.06 ID run request	Select the drive at the next startup motor to identify the type of operation. After completion of the auto tuning of motor, drive will stop. Notice: When the drive is running, this parameter cannot be changed. Once activated the auto tuning, you must stop the drive first, and then stop auto tuning. Notice: <ul style="list-style-type: none">The auto tuning can only be performed in local control mode (The drive is controlled by a PC tool or control panel)Must be identified in the auto tuning process, Safety torque interrupt and emergency stop circuit must be closed.	No request = [0]
No request	No motor auto tuning operation required.	0
Normal	Normal operation of auto tuning. Ensure that in all cases have good control accuracy. Auto tuning run for continued 90 seconds. Under normal circumstances, this mode should be selected. Notice: <ul style="list-style-type: none">In the following two cases to perform routine auto tuning. Must disconnect the mechanical connection between motor and driven equipment: If the load torque is higher than 20%; If the mechanical device driven by the motor is not able to withstand the rated speed transients during the normal auto tuning operation.Before starting auto tuning, please check the motor turn. During auto tuning, motor will be forward. Warning ! Motor in the running speed can reach about 50... 100% of rated speed. Before the start auto tuning operation, please confirm whether can ensure safety.	1
Standstill	Static auto tuning operation. Motor power into the dc or ac current. For asynchronous motors, the motor will not turn(For permanent magnet motor and synchronous reluctance motor, motor rotation travel less than half turn). Notice : Only by the influence of the connected mechanical parts, can not conduct Normal auto tuning run time, select the mode(For example, the rising edge of activation or lift applications) .	2



63 Startup parameter	Start Related Parameter Settings	Def
Auto-phasing	Only applicable to synchronous motor, Used to identify initial Angle encoder under stationary state.	3
63.07 Drive mode	Select motor control mode.	Enhanced V/F= [0]
Openloop vector	Open loop vector control model is suitable for most applications.	0
Close loopVectorvector	Closed loop vector control.This model is used for occasions with strict requirements for speed and torque accuracy and response speed. You must install the PG card plus encoder to obtain the speed feedback to a closed-loop control. It can reduce the dependence on motor parameters degree.	1
63.08 Phase inversion	Change the motor's turn.If the motor rotates in the wrong direction(For example, the power line of the motor is connected wrong), And unable to re wiring, You can use this parameter. Notice: After changing this parameter, Encoder feedback signal must be checked>If there). Refer to parameter 01.14Motorspeedest(Motor speed estimation)Signal and 01.08Encoder1speed (Encoder 1 speed)(or 01.10 Encoder 2 speed) Signal compared to conduct Check.If these signals are in conflict, the wiring of the encoder must be corrected or auto tuning.	Normal, UVW = [0]
Normal, UVW	Motor phase sequence is normal.	0
Invert, UWV	Motor phase inverting,V and W exchange.	1
63.09 Macro sel	Select the drive application macro.	Factory = [0]
Factory	Default factory application macros.	0
Retain		1



■ 6. Field Bus data set

Address	Name
0001	Fieldbus control word (corresponding to monitoring parameter address 6.05)
0002	Field bus given 1(corresponding to monitoring parameter address02.15)
0003	Field bus given 2(corresponding to monitoring parameter address02.16)
0004	Field bus status word
0005	Field bus actual value1
0006	Field bus actual value2
0007-0018	Field bus module input1-12(parameter50.05-50.16)
0019-0030	Field bus module output1-12(parameter50.17-50.28)

Fieldbus control word can be viewed by parameter 6.05, Please refer to this manual before.

【Field bus status word format】

No.	Name	Meaning
0	Ready	1: Operationalreadiness
1	Enabled	1: Run enable
2	Modulating	1: PWM signal output
3	Following ref	1:
4	Em OFF2	1: Free parking mode
5	Em OFF3	1: Emergency stop mode
6	Start inhibit	1: Start inhibit
7	Alarm	1: Alarm
8	At setpoint	1: The output is consistent with the set (speed arrival or torque arrival)
9	Torque limited	1: Torque limited
10	Speed limited	1: Speed limited
11	EXT2 active	1: Control ground 2 effective
12	Local ctrl	1: Local ctrl
13	Zero speed	1: Zero speed
14	Direction reverse	1: Direction reverse
15	Fault	1: Fault

【Related parameters】

parameter address	parameter name	parameter values
51.00	Modbus enable	Enable = [1]
51.01	Node address	-
51.02	Baudrate	-
51.03	Format	-

【Sample】

The following is an example of node address equal to 1,The last CRC check code is only applicable to this case,To change any data should be recalculated after CRC check code,Can use the software automatically generated.

1、 Read drive status

Request frame: 01 03 06 00 00 01 84 82

Response frame: 01 03 02 B4 81 0F 24



- 2、Modify drive given speed(First, the signal source for the given speed is field bus)
- 3、given 1)

Request frame: 01 06 00 02 03 E8 28 B4
Response frame
- 4、boot drive(Modify the external control to start first、Stop command signal source for fieldbus communication)
Request frame: 01 06 00 01 08 82 5F AB
(Where 0x0882 for startup command, Note that bit 7 and bit 11 must always be maintained at a level of 1)
Response frame slightly
- 5、Stop driver
Request frame: 01 06 00 01 08 81 1F AA
(Where 0x0881 is a shutdown command, Note that bit 7 and bit 11 must always be maintained at a level of 1)
Response frame slightly
- 6、Read parameter 22.00Acc time1(Acceleration time 1)Attribute
Request frame: 01 42 0000 1600 77 A5
Response frame: 01 42 00 0008 AC 7E 78
- 7、Read parameter 22.00Acc time1(Acceleration time 1)Default value
Request frame: 01 42 0001 1600 26 65
Response frame: 01 42 000101 F4 28 12
- 8、Read parameter 22.01 Dec time1(Deceleration time 1)Minimum value
Request frame: 01 42 00 02 16 01 17 A5
Response frame: 01 42 00 02 00 01 19 C5
- 9、Read parameter 22.01 Dec time1(Deceleration time 1)Maximum value of
Request frame: 01 42 00 03 16 01 46 65
Response frame: 01 42 00 03 EA 60 C6 8D
- 10、Read parameter 01 Actual values(actual value)Contained number of parameters
Request frame: 01 42 00 04 16 01 F7 A4
Response frame: 01 42 00 04 00 0D F9 C1

Address	Name
0001	Field bus control word(Corresponding monitoring parameter address 06.05)
0002	Field bus given1(Corresponding monitoring parameter address 02.15)
0003	Field bus given2(Corresponding monitoring parameter address 02.16)
0004	Field bus status word
0005	Field bus actual value1
0006	Field bus actual value2

Field bus control word

No.	Name	Meaning
0	Stop	1: Stop
1	Start	0->1: start-up
2	Em OFF2	1: Select the free parking mode(The bit 0 must be set to 1)
3	Em OFF3	1: Select emergency stop mode(The bit 0 must be set to 1)
4	Loc ctrl req	1: Local control request
5	Ramp stop	1: Select deceleration stop mode(The bit 0 must be set to 1)
6	Coast stop	1: Free parking mode(The bit 0 must be set to 1)
7	Run enable	1: Run enable



8	Reset	0->1: Reset fault
9	JOG1	0->1: Move 1
10	JOG2	0->1: Move 2
11	Remote	1: Remote control
12		
13		
14		
15	EXT2 sel	1: Selective control 2

Field bus status word

No.	Name	Meaning
0	Ready	1: Operational readiness
1	Enabled	1: Run enable
2	Modulating	1: PWM signal output
3	Following ref	1:
4	Em OFF2	1: Free parking mode
5	Em OFF3	1: Emergency stop mode
6	Start inhibit	1: Start inhibit
7	Alarm	1: Alarm
8	At setpoint	1: The output is consistent with the set (speed arrival or torque arrival)
9	Torque limited	1: Torque limiter
10	Speed limited	1: Speed limiting
11	EXT2 active	1: Control ground 2 effective
12	Local ctrl	1: Local control
13	Zero speed	1: Zero speed
14	Direction reverse	1: Reversal
15	Fault	1: Fault



8	Reset	0->1: Reset fault
9	JOG1	0->1: Move 1
10	JOG2	0->1: Move 2
11	Remote	1: Remote control
12		
13		
14		
15	EXT2 sel	1: Selective control 2

Field bus status word

No.	Name	Meaning
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9	Torque limited	1: Torque limiter
10	Speed limited	1: Speed limiting
11	EXT2 active	1: Control ground 2 effective
12	Local ctrl	1: Local control
13	Zero speed	1: Zero speed
14	Direction reverse	1: Reversal
15	Fault	1: Fault



10H Request frame (The number of bytes is equal to 2 times the number of registers)

Node address	10	Register start address		Number of registers		Number of bytes	Register data 1		...
		High 8 bit	Low 8 bit	High 8 bit	Low 8 bit		High 8 bit	Low 8 bit	

10H Response frame (Returns the first 6 bytes of the request frame)**42H Request frame**

Node address	42	Sub function code		Parameter address	
		High 8 bit	Low 8 bit	High 8 bit	Low 8 bit

42H Response frame

Node address	42	Sub function code		Parameter information	
		High 8 bit	Low 8 bit	High 8 bit	Low 8 bit

Parameter address

Parameter address is 16 bits, High 8 bit parameter group number, Low 8 bit is within the group index.

GROUP	INDEX	Address	
		Hexadecimal	Decimal system
00 Communication data	01-30 Data set	0001-001E	0001-0030
01 Parameter group 01	00- 255 Parameter 01.00-01.255	0100-01FF	256-511
02 Parameter group 02	00- 255 Parameter 02.00-02.255	0200-02FF	512-767
...
63 Parameter group 63	00- 255 Parameter 63.00-63.255	3F00-3FFF	16128-16383

Notice:

- For each actual parameter, please refer to this manual.
- The use of PLC as the main station parameter address need to add 40000, If the communication address of parameter 01.00 is 40256.

Notice: For more instructions please refer to *Modbus_Application_Protocol_V1_1b3.pdf*, User can be from www.modbus.org Download this document.

Function code list

Function code	Name	Describe
0x03	Read hold register	Read one or more parameters
0x06	Write a single register	Write a single parameter
0x08	Diagnosis	For testing, check the communication between the master station and the slave station, only support the following sub function code: 0x01 reset communication Initialize and restart the serial port of the slave device, clear all communication event counters. 0x04 Force to listen only mode. Forcing the specified slave to listen only mode, the slave will not respond to this message.
0x10	Write multiple registers	Write continuous multiple parameters
0x42	Read parameter related information	The information used to read the drive parameters is currently only supported by the following sub function code: 0x01 Read the attributes of the specified parameters 0x02 Read the default values for the specified parameters 0x03 Read the minimum value of the specified parameter 0x04 Read the maximum value of the specified parameter 0x05 Read the number of parameters for the specified parameter group 0x06 Read the visibility of the specified parameter group



Related parameters

Parameter address	Parameter name	parameter values
51.00	Modbus enable	Enable = [1]
51.01	Node address	-
51.02	Baudrate	-
51.03	Format	-

Sample description (sixteen decimal)

11、 Read drive status

Request frame format: 01 03 06 00 00 01 84 82

(Among 0x0600 Namely representation parameter 06.00 Status word1(Status word 1))

Response frame format: 01 03 02 B4 81 0F 24

(Among 0xB481 Current status for the drive)

Modify the given speed of the drive (first modify the speed of the given signal source for the fieldbus given 1)

Request frame format: 01 06 00 0203E8 28 B4

(Among 0x0002 It indicates that the fieldbus given 1,0x03E8 Express 1000RPM)

Response frame slightly

12、 Boot drive(Start by modifying the external control、 Stop command signal source for fieldbus communication)

Request frame format: 01 06 00 01 08 82 5F AB

(Among 0x0001 Namely representation fieldbus control word, 0x0882 Start command, Note that bit 7 and bit 11 must always be maintained at a level of 1)

Response frame slightly

13、 Stop driver

Request frame format: 01 06 00 01 08 81 1F AA

(Among 0x0001 Namely representation fieldbus control word, 0x0881 Stop command, Note that bit 7 and bit 11 must always be maintained at a level of 1)

Response frame slightly

14、 Read parameter 22.01 Dec time1(Deceleration time 1)Maximum value of

Request frame format: 01 42 00 04 16 01 F7 A4

(Among 0x0004 Represents the maximum value of the specified parameter, 0x1601 Specified parameter 22.01 Dec time1(Deceleration time 1))

Response frame format: 01 42 00 04 FF FF39B4

(Among 0xFFFFThe maximum value of the deceleration time 1, Here for 655.35s)

15、 Read parameter set 01 Actual values(actual value)Number of parameters

Request frame format: 01 42 00 05 01 00 68 54(The underlined 00 representation can be any value)

(Among 0x0005 The number of parameters to read the specified parameter group, 0x01 Specified parameter group 01 Actual values(actual value))

Response frame format: 01 42 00 05001F28 0C

(Among 0x001F Parametric array 01 Actual valuesContain
number of parameters, Here for 31)



CANopen

CANopen Protocol introduction

CANopen Protocol based on CAN protocol, The CAN protocol defines the first layer of the OSI reference model in the seven layer(physical layer)And the second layer(data link layer)Norm, CANopenDefines the seventh layer (application layer) specification.CANopenProtocols can be applied to multiple industries,This manual only describes the CANopen protocol used in the drive control industry information.

A detailed description of the CAN,Please refer to the documentBOSCH Controller Area Network(CAN) Specification V2.0.

A detailed description of the CANopen,Please refer to the following documents:

- 1、DS 301 Application Layer and Communication Profile(The application layer and the communication rules)
- 2、DSP 402 Device Profile for Drives and Motion Control(Drive and motion control equipment industry)
- 3、DS 306 Electronic Data Sheet Specification for CANopen(EDS file specification)

Communication object

【Communication identifier】

When using the CAN2.0A protocol,Communication identifier COB-ID is 11 bits,The CAN device filters the message through this identifier.The encoding format is as follows (Notes: Node address valid Value range 1~127):

b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Function code				Node address						

Communication object	Function code(Binary)	COB-ID(Hexadecimal)
NMT	0000	000
SYNC	0001	080
EMERGENCY	0001	081~0FF
TIME STAMP	0010	100
TPDO1	0011	181~1FF
RPDO1	0100	201~27F
TPDO2	0101	280~2FF
RPDO2	0110	301~37F
TPDO3	0111	381~3FF
RPDO3	1000	401~47F
TPDO4	1001	481~4FF
RPDO4	1010	501~57F
Download SDO	1011	581~5FF
Upload SDO	1100	601~67F
NMTE	1110	701~77F

【frame format】

CAN2.0 standard up to 8 bytes of data transmission,First bytes before the most,Eighth bytes at last.Therefore,CANopen Message frame format is as follows:

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte

Notes: CAN device uses a high priority way to transmit a single byte,First transmission bit 7,Last transmission bit 0.



CANopenMessage frame header contains communication identifier、Remote request bit and data length,The encoding format is as follows:

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Communication identifier												RTR	Data length		

Notes: RTRRemote request bit,0 Express data frame,1 Express remote frame.

【SDO Service data object】

SDO service data objects based on object index and the index,Found in the object dictionary object and execute the command,Read or overwrite objects.Because the object type is diverse,Unequal in size(See object dictionary section),So SDO supports faster transmission and ordinary general transmission.The first byte of the SDO message frame contains the transport type e、Command selector CS and other fields,Determines the mode of transmission.

Only when the node is enabled or standby mode,Ability to access SDO.

SDO server and client based model,Drive as a server,Other CANopen devices as clients.Communication initiated by client request,The server receives the request and responds.The client and server command definitions are not the same,The code is as follows:

Command selector	The server	Client
0	Segmented upload	Segmented Download
1	Segmented Download	Start download
2	Start uploading	Start uploading
3	Start download	Segmented upload
4	Give up transmission	Give up transmission

Download SDO

The client can rewrite the object in the server (or drive) object dictionary through the SDO download service

Speed up transmission

When the number of bytes of the object is less than or equal to 4,Used to speed up transmission.here,Data field stores object data.

client request

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
B028	Command	Object index		Sub index	Data domain			

Command code is as follows:

Position	Name	Explain	Value
0	s	Size indicator,1 indicates that the N field indicates the size of the data field,0 indicates that the n field is reserved	0 or 1
1	e	Transport type,1 to speed up the transfer,0 indicates normal transmission	1
2-3	n	s=1 time,This field is only valid.	0-3
4	x	Retain	0
5-7	ccs	Client command selector	1

Server response

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
C024	Command	Object index		Sub index	Retain			

Command code is as follows:

Position	Name	Explain	Value
0-4	x	Retain	0
5-7	scs	Server command selector	3



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Ordinary transmission

【Start download】

When the number of bytes exceeds 4 bytes, The client uses the common transmission, Notification will be downloaded to the server(Namely drive)Number of bytes of the object。here, The number of bytes stored in the data field.

Client request

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
B028	Command	Object index	Sub index	Data domain				

Command code is as follows:

Position	Name	Explain	Value
0	s	Size indicator,1 indicates that the N field indicates the size of the data field,0 indicates that the n field is reserved	0 Or1
1	e	Transport type,1 to speed up the transfer,0 indicates normal transmission	0
2-3	n	s=1 time,This field is only valid.	0-3
4	x	Retain.	0
5-7	ccs	Client command selector.	1

The server response and speed up the transfer the same.

【Subsection Download】

After the server (Namely drive) correctly receives the number of bytes in the object,The client is in a byte order from low to high,Using segmented transmission in turn up to 7 bytes of data segment.

client request

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
B028	Command	Segment data						

Command code is as follows:

Position	Name	Explain	Value
0	c	End indicator,1 said the end of the segmented Download.	0 Or 1
1-3	n	The nonzero n value indicates that the last n bytes of the message frame do not contain data.	0-7
4	t	Turning and turning,The first segment message frame will clear this bit 0,After each segmented message frame will this turn.	
5-7	ccs	Client command selector	0

Server response

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
C021	Command	Retain						

Command code is as follows:

Position	Name	Explain	Value
0-3	x	Retain	0
4	t	Turning and turning	
5-7	scs	Server command selector	1



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Upload SDO

The client can read the server through the SDO upload service (Namely drive) Object in the object dictionary.

【Speed up transmission】

When the number of bytes of the object is less than or equal to 4,Used to speed up transmission.here,Data field stores object data.

client request

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
C024	Command	Indexes		Sub Indexes	Retain			

Command code is as follows:

Position	Name	Explain	Value
0-4	x	Retain	0
5-7	ccs	Client command selector	2

Server response

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
B028	Command	Indexes		Sub Indexes	Data domain			

Command code is as follows:

Position	Name	Explain	Value
0	s	Size indicator,1 indicates that the N field indicates the size of the data field,0 indicates that the n field is reserved	0 or 1
1	e	Transport type,1 to speed up the transfer,0 indicates normal transmission	1
2-3	n	s=1 time,This field is only valid.	0-3
4	x	Retain	0
5-7	scs	Server command selector	2

【Ordinary transmission】

【Start uploading】

When the number of bytes exceeds 4 bytes,The client uses the common transmission,Gets the number of bytes to be uploaded from the server (Namely drive).here,The data field stores the number of bytes in the object.

Client requests are the same as speeding up the transfer.

Server response

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
C028	Command	Object index		Sub Indexes	Data domain			

Command code is as follows:

Position	Name	Explain	Value
0	s	Size indicator,1 indicates that the N field indicates the size of the data field,0 indicates that the n field is reserved	0 or 1
1	e	Transport type,1 to speed up the transfer,0 indicates normal	0



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Position	Name	Explain	Value
		transmission	
2-3	n	s=1 time, This field is only valid.	0-3
4	x	Retain	0
5-7	scs	Server command selector	2

【Segmented upload】

After the client correctly receives the number of bytes, The server (Namely drive) follows the byte order from low to high, Using segmented transmission in turn up to 7 bytes of data segment.

client request

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
C021	Command	Retain						

Command code is as follows:

Position	Name	Explain	Value
0-3	x	Retain	0
4	t	Turning and turning	
5-7	ccs	Client command selector	3

Server response

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
B028	Command	Segment data						

Command code is as follows:

Position	Name	Explain	Value
0	c	End indicator, 1 said the end of the segmented Download.	0 or 1
1-3	n	The nonzero n value indicates that the last n bytes of the message frame do not contain data.	0-7
4	t	Turning and turning, The first segment message frame will clear this bit 0, After each segmented message frame will this turn.	
5-7	scs	Server command selector.	1

SDO Abort transmission

By SDO rewrite or while reading object, If there is an error, The server (Namely drive) terminates the current transfer(cs = 4), And return to the end of the code, The format is as follows:

Frame head	1 st byte	2 nd byte	3 rd byte	4 th byte	5 th byte	6 th byte	7 th byte	8 th byte
	80	Object index		Sub Indexes	Stop code			

Stop code

Stop code (sixteen decimal)		Describe
High 16 bit	Low 16 bit	
0503	0000	The two consecutive transmission does not reverse the flip bit
0504	0000	A timeout occurs when an ordinary transmission segment uploads or downloads
	0001	Invalid or illegal command selector
	0005	Out of storage space
0601	0000	Unsupported object access
	0001	Attempt to read only write objects
	0002	Attempt to rewrite read-only objects



Object properties RO: read-only, RW: Read-write, CONST: constant(read-only)

Communication profile parameters DS 301

Index	Sub-Index	Name	Type	Attr	Explain
1000	0	Equipment type	U32	RO	
1001	0	Fault register	U8	RO	
1003	0	Cumulative failure number	U8	RW	
	1	Recently the first failure	U32	RO	
	2	The recent second failure	U32	RO	
	
	4	The recent fourth failure	U32	RO	
1005	0	SYNC message identifier	U32	RW	Default value 80H
1008	0	Device name	VSTR	CONST	
1009	0	Hardware version	VSTR	CONST	
100A	0	Software version	VSTR	CONST	
100C	0	Guard time	U16	RW	Life guardingThe life time of life Guardian agreement= guard time(ms)* Life time factor
100D	0	Life time factor	U8	RW	
1010	0	Storage parameter	U8	RO	
	1	Store all parameters	U32	RW	
	2	Storage communication parameters	U32	RW	
	3	Storage application parameters	U32	RW	
	4	Storage driver parameters	U32	RW	
1011	0	Restore default parameters	U8	RO	
	1		U32	RW	
	2		U32	RW	
	3		U32	RW	
	4		U32	RW	
1014	0	EMCY message identifier	U32	RW	Default value 80H+Node ID
1016	0		U8	RO	Heartbeat heartbeat protocol
	1	Consumer heartbeat time	U32	RW	
1017	0	Producer heartbeat time	U16	RW	
1018	0	Identification object	U8		
	1	Vendor identification	U32	RO	
	2	Product code	U32	RO	
	3		U32	RO	
	4		U32	RO	
1400	0	RPDO1 communication parameters	U8	RO	
	1	RPDO1 message identifier	U32	RW	Default value 200H+Node ID
	2	RPDO1 transport type	U8	RW	Default value 255(Asynchronous transfer)
	3	RPDO1 ban time	U16	RW	
	5	RPDO1 event timer	U16	RW	
1401	0	RPDO2 communication parameters	U8	RO	
	1	RPDO2 message identifier	U32	RW	Default value 300H+Node ID
	2	RPDO2 transport type	U8	RW	Default value 255(Asynchronous transfer)
	3	RPDO2 ban time	U16	RW	
	5	RPDO2 event timer	U16	RW	
1402	0	RPDO3 communication parameters	U8	RO	



Index	Sub-Index	Name	Type	Attr	Explain
1403	1	RPDO3 message identifier	U32	RW	Default value 400H+Node ID
	2	RPDO3 transport type	U8	RW	Default value 255(Asynchronous transfer)
	3	RPDO3 ban time	U16	RW	
	5	RPDO3 event timer	U16	RW	
	0	RPDO4 communication parameters	U8	RO	
1403	1	RPDO4 message identifier	U32	RW	Default value 500H+Node ID
	2	RPDO4 transport type	U8	RW	Default value 255(Asynchronous transfer)
	3	RPDO4 ban time	U16	RW	
	5	RPDO4 event timer	U16	RW	
	0	RPDO1 mapping parameters	U8	RO	Default 1, Only 1 map entry.
1600	1	RPDO1 map entry 1	U32	RO	Default value 60400010H (6040H Control word)
	0	RPDO2 mapping parameters	U8	RO	Default value 2, Only 2 map entry.
	1	RPDO2 map entry 1	U32	RO	Default value 60400010H (6040H Control word)
1601	2	RPDO2 map entry 2	U32	RO	Default value 60420010H (6042H Given speed)
	0	RPDO3 mapping parameters	U8	RO	Default value 1, Only 1 map entry.
	1	RPDO3 map entry 1	U32	RW	Default value 401C0210H (parameter 28.02 Local speed setting)
	2	RPDO3 map entry 2	U32	RW	Default value 0
	3	RPDO3 map entry 3	U32	RW	Default value 0
1602	4	RPDO3 map entry 4	U32	RW	Default value 0
	0	RPDO4 mapping parameters	U8	RO	Default value 0
	1	RPDO4 map entry 1	U32	RW	Default value 0
	2	RPDO4 map entry 2	U32	RW	Default value 0
	3	RPDO4 map entry 3	U32	RW	Default value 0
1603	4	RPDO4 map entry 4	U32	RW	Default value 0
	0	TPDO1 communication parameters	U8	RO	
	1	TPDO1 message identifier	U32	RW	Default value 180H+Node ID
	2	TPDO1 transport type	U8	RW	Default value 255(Asynchronous transfer)
	3	TPDO1 ban time	U16	RW	Default value 0
1800	5	TPDO1 event timer	U16	RW	Default value 0
	0	TPDO2 communication parameters	U8	RO	
	1	TPDO2 message identifier	U32	RW	Default value 280H+Node ID
	2	TPDO2 transport type	U8	RW	Default value 255(Asynchronous transfer)
	3	TPDO2 ban time	U16	RW	Default value 0
1801	5	TPDO2 event timer	U16	RW	Default value 0
	0	TPDO3 communication parameters	U8	RO	
	1	TPDO3 message identifier	U32	RW	Default value 380H+Node ID
	2	TPDO3 transport type	U8	RW	Default value 255(Asynchronous transfer)
	0	TPDO3 communication parameters	U8	RO	



	2				
6049	0				
	1				
	2				
604A	0				
	1				
	2				
60FD	0	Switch input status			



Manufacturer specific parameters

Index	Sub-Index	Name	Type	Attr	Explain
4000	1	empty	U16	RW	
	2	Field bus control word	U16	RW	
	3	Field bus given 1	U16	RW	
	4	Field bus given 2	U16	RW	
	5	Field bus status word	U16	RO	
	6	Field bus actual value 1	U16	RO	
	7	Field bus actual value 2	U16	RO	
	8	Field bus module input 1	U16	RW	
	9	Field bus module input 2	U16	RW	
	...				
	19	Field bus module input 12	U16	RW	
	20	Field bus module output 1	U16	RO	
	21	Field bus module output 2	U16	RO	
	...				
	31	Field bus module output 12	U16	RO	

Parameter address	Index	Sub-Index	Type	Attr
1.00	4001	1	U16 or S16	RO
1.01	4001	2	U16 or S16	RO
...				
1.10	4001	11	U16 or S16	RO
...				
2.00	4002	1	U16 or S16	RO
...				
10.00	400A	1	U16 or S16	RW
...				
63.00	403F	1	U16 or S16	RW

Drive control

configuration parameter

10.00	Control ground 1 start function	5, field bus	5
10.11	Fault clearing input	P.06.05.08(Fieldbus control word, bit 8, reset)	P.06.05.08
21.00	Speed given 1	P.02.15(Field bus given 1)	P.02.15
50.00	Field bus enable	0,Prohibit 1,Enable	1
52.00	Node address	0-127	1
52.01	Baud rate	0, 10kbit/s 1, 20kbit/s 2, 50kbit/s 3, 125kbit/s 4, 250kbit/s 5, 500kbit/s 6, 625kbit/s 7, 800kbit/s 8, 1000kbit/s	8
52.02	PDO4 Local	0,Prohibit	0



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	configuration	1,Enable	
52.03	RPDO4 Enable	0,Prohibit 1,Enable	0
52.04	RPDO4 Transport type	0-255	255
52.05	RPDO4 Data 1 Indexes	0-65535	
52.06	RPDO4 Data 1 Sub index	0-255	
52.07	RPDO4 Data 2 Indexes	0-65535	
52.08	RPDO4 Data 2 Sub index	0-255	
52.09	RPDO4 Data 3 Indexes	0-65535	
52.10	RPDO4 Data 3 Sub index	0-255	
52.11	RPDO4 Data 4 Indexes	0-65535	
52.12	RPDO4 Data 4 Sub index	0-255	
52.13	TPDO4 Enable	0,Prohibit 1,Enable	0
52.14	TPDO4 Transport type	0-255	255
52.15	TPDO4 Event timing	0-65535	100
52.16	TPDO4 Data 1 Indexes	0-65535	
52.17	TPDO4 Data 1 Sub index	0-255	
52.18	TPDO4 Data 2 Indexes	0-65535	
52.19	TPDO4 Data 2 Sub index	0-255	
52.20	TPDO4 Data 3 Indexes	0-65535	
52.21	TPDO4 Data 3 Sub index	0-255	
52.22	TPDO4 Data 4 Indexes	0-65535	
52.23	TPDO4 Data 4 Sub index	0-255	
52.24	NMT state	0, Initialization 4, Disable 5, Enable 127,Standby	
52.25	CAN Error flag	0-65535	0
52.26	CAN Error count	0-65535	0
52.27	CANReceiving count	0-65535	0
52.28	CANSending count	0-65535	0
52.29	DSP402 state machine	0,Boot not ready 1,Ban start 2,Boot ready 3,Already started 4,Operation permission 5,Fault	1



52.30	Control word		
52.31	Status word		

Control word

No.	Name	Explain
0	Switch On	1: start-up,0: Stop according to the set mode
1	Disable Voltage	1: Keep the current state,0: Free stop .
2	Quick Stop	1: Keep the current state,0: Emergency stop.
3	Enable Operation	1: Allow work,0: Prohibition of work.
4	Ramp Out 0	1: RFG(Ramp function generator)Output force 0
5	Ramp Hold	1: RFG(Ramp function generator)Output hold
6	Ramp In 0	1: RFG(Ramp function generator)Output force_0
7	Reset Fault	0->1: Fault reset
8	Halt	1: Suspend
9	Inching 1	1: Point move command 1
10	Inching 2	1: Point move command 2
11	Remote	1: Remote control
12	Ext2	0: Select external control1, 1: Select external control 2
13-15	Retain	

Status word

No.	Name	Explain
0	Ready to Switch On	1: Boot ready
1	Switched On	1: Already started
2	Operation Enabled	1: Have been allowed to work
3	Fault	1: Fault
4	Voltage Disabled	1: Free stop
5	Quick Stop	1: Emergency stop
6	Switch On Disabled	1: Start inhibit
7	Warning	1: Warning
8	Ref Inverted	1: Set to negative
9	Remote	1: Remote control
10	Target Reached	1: Set speed has been reached
11	Internal Limit Active	1: Internal limit
12-15	Retain	

☞ Reminder:

Other fieldbus communication control such as Profibus-DP Match (set up)the instructions, please refer to the accessories of descriptions or consult relevant technical personnel



■ 7. Fault tracking and processing

Contents of this chapter

This chapter lists all of the alarm (warning) and fault information, including possible causes and corrective actions. Alarm / fault code is displayed on the driver's control keyboard (LED Version display in the form of E-XX). Alarm or fault information is used to indicate that the driver is in an abnormal state. Most alarms and faults can be identified and corrected using the information in this chapter. If you can not rule out the fault, Please contact our representative office. In this chapter, Alarm and fault sort according to the code.

Security



Warning! Only have the qualification of the electrical engineer is allowed to drive conduct for maintenance. Before starting to drive conduct operation, Must read the safety instructions in front of the relevant hardware manual.

How to reset

Can be controlled by pressing the keyboard (RESET key), Or cut off the power supply for a period of time to reset the fault. After troubleshooting, Motor can start again.

Fault code and interpretation

Code	Fault name	Possible causes	Terms of settlement
01	SC(Output short circuit)	Output phase to phase short circuit、Or output to earth short circuit、Or output to the bus short circuit.	Check whether the motor is short circuit、Check wiring and cable short circuit. Check whether there is a power factor compensation capacitor or surge absorber in the motor cable.
02	OC(Motor over current)	Motor current exceeds the maximum permissible level of hardware.	Check the motor rated parameters is consistent with the nameplate、Check the acceleration and deceleration time is too fast.
03	OV(Bus overvoltage)	Bus voltage exceeds the maximum permissible level.	Check whether the overpressure stall enable. Check whether the brake resistance is within the recommended range.
04	OH(Drive over heat)	Drive within the radiator temperature is too high、Or the internal cavity temperature is too high、Or module chip temperature is too high.	Check cooling fan、Ventilation cooling system is normal、Radiator is dust clogging、Check if the ambient temperature is within the allowable range.
05	GF(Earth leakage)	The sum of the output current is not zero, And greater than the allowable value.	Check wiring is loose、Check whether the motor cable leakage. Or the motor output line is too long and there is no additional output reactor.
06	ADC(ADC Fault)	Motor current sensor fault、Analog to digital converter fault or control panel.	Contact local agents or vendors.



Code	Fault name	Possible causes	Terms of settlement
07	NTC LOSS(Temperature sensor break)	Drive internal temperature sensor disconnection.	Contact local agents or vendors.
08	ENC INIT	The encoder is found to be faulty during initialization.	Check the encoder wiring is correct, Check the encoder wiring is correct.
09	ENC ZMARK	The number of pulses between the two Z pulses captured by the encoder is different from that of the encoder.	Check encoder resolution settings are correct. Check whether the encoder cable is disturbed.
10	EEPROM	Memory failure, Failed write parameter.	Contact local agents or vendors.
11	CPU OVERLOAD	CPU load over 100%, Failure to complete real-time task. Or stack overflow.	Contact local agents or vendors.
12	PARA ERROR	The parameters of the motor are conflicting with each other.	Check motor parameters are set correctly.
13	MOTOR OH	The temperature of the motor exceeds the set fault point.	Check whether the motor is overloaded. Check motor overheating protection settings are correct.
14	AI LOSS	Analog input out of range.	Check whether analog input is broken or short.
15	EXT FAULT	External user defined fault.	Check external fault signal.
16	SUPPLY LOSS	Abnormal power supply. Or lack of phase, Or unbalanced three-phase input, or insufficient capacity.	Check whether the lack of phase. Check whether the capacitance value is normal.
17	OUTPUT LOSS	Output current anomaly Or the output phase, or IGBT and peripheral anomalies can not be controlled.	Check whether the motor is short of phase. Check whether the motor vibration. Or contact local agents or vendors.
18	ID RUN	Motor self identification fault.	Check whether the motor has been connected. Check the motor nameplate parameters are set correctly.
19	MODBUS FAULT	MODBUS Communication failure.	Check MODBUS communication.
20	CANOPEN FAULT	CAN Communication failure.	Check CAN communication.
21	PROFIBUS FAULT	PROFIBUS Communication failure.	Check PROFIBUS communication.
22	PAR SET ERR	Backup parameter set error in memory.	Parameter set not backup.
23	UNDER VOLTAGE	Drive operation, Power supply under pressure.	Check whether the power supply is normal. Check whether the soft start is normal.



Code	Fault name	Possible causes	Terms of settlement
24	SPEED FEEDBACK	Speed feedback fault.	Speed feedback speed feedback phase disconnection or positive feedback.
25	OVER SPEED	Overspeed.	Motor speed, Check encoder settings are correct, Check whether the feedback is positive feedback.
26	OPTCARD CHANGED	Hot swap card options.	Do not allow the hot swap option card, Otherwise it may cause permanent damage to the driver.
27	RUNTIME LIMITTED	Run time is limited.	Contact local agents.
28	PID FBK LOSS	Process PID feedback break.	Check whether the PID disconnection detection is correct, Check whether the external wire break.
29	BR ERR	The brake resistance is less than allowable resistance drive.	Check the brake resistance is reasonable.
30	BR OVERLOAD	Regenerative braking resistor.	Check the brake resistor overload detection settings are correct, Check whether the power of resistance is reasonable.
31	BRAKE SLIP	The brake during the inspection, Motor slip.	Check whether the need to replace the brake, Check the brake check settings are correct.
32	BRAKE FLT	Open the front brake, Start moment can not be reached.	Check whether the normal brake.
33	BRAKE SAFE CLOSE	Open loop control, The motor works in the low speed dangerous area, Brake force close.	Check whether speed given is too low.
34	BRAKE OL	After the brake open, Actual compliance exceeds the maximum allowable torque of the drive.	Check whether the load is too high, Check the brake control circuit is normal.
35	BRAKE ACK FLT	After the brake open, Non response signal.	Check the brake response signal is normal.
36	BRAKE SYNC FLT	Lifting control, Motor speed and the given estimated deviation is too large, Magnetic flux anomaly.	Check motor parameters are set correctly.
40	PM SYNC LOSS	Multiple step out of step in the starting process of synchronous motor.	Check whether the initial angle identification parameter is set correctly
41	MOTOR STALL	Motor blocking fault, The rotor is almost impossible to rotate, The moment has reached the maximum torque.	Check if the machine is locked

