EPC-TM1 Instruction Manual

EPC-TM1 is a terminal expansion board when the terminals at control board are not enough. This board includes one analog input, one analog output, one digital input, and one relay output.

1. Picture of the Board



Fig.1 Picture of EPC-TM1

2. Terminal Function

Terminal	Function
CN3	Analog input and output terminal
CN4	Digital input terminal
CN5	Digital output terminal

3. Specification of Wiring

Type	Terminal symbol	Terminal Name	Specification
Analog input	EAI	Analog input expansion	0~20mA: input impedance 500Ω, max. input current 25mA
			0~10V: input impedance 22kΩ, max. input voltage 12.5V
			0~20mA and 0~10V can be selected by slide switch S2. Factory default: voltage input
	GND	Analog ground	Isolated with COM interiorly
Analog output	EAO	Analog output expansion	0~20mA: impedance requirement 200Ω~500Ω
			0~10V: impedance requirement ≥10kΩ
			0~20mA and 0~10V can be selected by slide switch S1. Factory default: voltage input
	GND	Analog ground	isolated with COM interiorly
Digital input	P24	+24V	24V±10%. Isolated with GND interiorly
			Max. load 50mA
	PLC	digital input common terminal	for high/low level switchover, factory default: short-circuited with P24, namely low level enabled
			external power supply input
	COM	+24V ground	isolated with GND interiorly
	EX	digital input/pulse input	input: 24VDC, 5mA
			freq range: 0~200Hz
			voltage range: 10V~30V
			pulse input: 0.1Hz~50kHz; voltage range: 10~30V
Relay output	EA/EB/EC	relay output	EA−EB: NC
			EA−EC: NO
			Contact capacity: 250VAC/3A,30VDC/3A

4. Specification of Signal Slide Switch

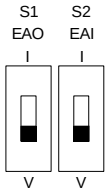


Fig.2 Slide switch

Terminal	Function	Default
EAO	I Current input (0~20mA) V Voltage input (0~10V)	0~10V
EAI	I Current output (0~20mA) V Voltage input (0~10V)	0~10V

5. Relative parameters

5.1 EAI

Below table is the parameter list for TM1 card EAI terminal function at GK620 platform.

GK820 don't support EAI terminal at TM1 board as default. Please contact us for customized firmware according to specified requirements if EAI terminal is needed for GK820 platform.

b0-01	Master FREQ set	4: Analog input EAI (on IO option-TM1)	0	×
b0-03	Auxiliary FREQ set	5: Analog input EAI (on IO option board-TM1)	0	×
b1-01	Binding of run command and frequency set	5: Analog input EAI (on IO option board)	000	×
C0-10	Function of terminal EAI (Digital enabled) (on IO option board)	Same as C0-01	0	×
C0-16	Digital input terminal enabled status setting 3	Ones place: AI1 0: Positive logic 1: Negative logic Tens place: AI2 (same as ones place) Hundreds place: EAI (on IO option board, same as ones place) Thousands place: reserved	0000	×
C0-20	Option of virtual input terminal	000~77F 0: Actual terminal in effect 1: Virtual terminal in effect Ones place: BIT0~BIT3: X1~X4 Tens place: BIT4~BIT6: X5~X6, EX Hundreds place: BIT8~BIT10: AI1~AI2, EAI (EX and EAI located at IO option board)	000	×
C2-00	Analog input curve	Ones place: AI1 input curve 0: Curve 1 (2 points) 1: Curve 2 (4 points) 2: Curve 3 (4 points) 3: Curve 2 and curve 3 switchover Tens place: AI2 input curve (same as ones place) Hundreds place: EAI input curve (same as ones place) Thousands place: reserved	0210	×
C2-23	EAI terminal filtering time (on IO option board)	0.000s~10.000s	0.1s	△
C3-02	Y2/DO output function (when used as DO)	13: EAI	0	△
C4-00	Analog correction	3:Correct EAI	0	×
C4-09	Sampling value of EAI calibration point 1	Range: 0.00V~10.00V	1.00V	◎
C4-10	Input value of EAI calibration point 1	Range: 0.00V~10.00V	1.00V	×
C4-11	Sampling value of EAI calibration point 2	Range: 0.00V~10.00V	9.00V	◎
C4-12	Input value of EAI calibration point 2	Range: 0.00V~10.00V	9.00V	×
d0-25	Temperature transducer signal input of motor 1	2: EAI (on IO optional board)	1	×
d1-12	Current limitation mode	4: Set by EAI	1	×
d1-18	Voltage setting on V/f separated pattern	3: Set by EAI	0	×
d2-12	Driven torque restriction source	3: EAI (on IO option board)	0	×

d2-13	Braking torque restriction source	3: EAI (on IO option board)	0	×
d3-25	Input channel of motor 2 temperature transducer signal	2: EAI (on IO optional board)	0	×
d4-12	Current limitation source	4: Set by EAI	1	×
d4-18	Voltage setting on V/f separated pattern	3: Set by EAI	0	△
d5-12	Driven torque restriction source	3: EAI (on IO option)	0	×
d5-13	Braking torque restriction source	3: EAI (on IO option)	0	×
F0-00	PID setting	3: EAI (on IO option)	0	×
F0-01	PID digital setting	0.0%~100.0%	50.0%	△
F0-02	PID feedback	2: EAI (on IO option)	0	×
F1-00	FREQ set source of multi-step 0	5: EAI (on IO option)	0	×
F1-01	FREQ set source of multi-step 1	5: EAI (on IO option)	0	×
F2-01	Setting of multi-step 0	Ones place: FREQ setting	000	×
L1-00	Display parameter setting 1 on run status	Hundreds place: BIT2: EAI (V) Note: when this parameter value is set to 0000, run FREQ (Hz) would be displayed as default	000F	△
L1-02	Display parameter setting on stop status	Tens place: BIT2: EAI (V) Note: when this parameter value is set to 0000, the set FREQ would be displayed as default (Hz)	0003	△
U0-07	Master FREQ set source	4: Analog input EAI	0	◎
U0-08	Auxiliary FREQ set source	5: Analog input EAI	0	◎
U0-14	EAI input voltage	0.00V~10.00V	0.00V	◎

5.2 EAO

Below table is the parameter list for TM1 card EAO terminal function at GK620 platform.

C3-01	EAO output function (on IO option)	Same as C3-00	1	△
C3-06	EAO offset	-100.0%~100.0%	0.0%	×
C3-07	EAO gain	-2.000~2.000	1.000	×
C3-08	EAO filtering time	0.0s~10.0s	0.0s	△
U0-16	EAO output	0.0%~100.0%	0.0%	◎

Below table is the parameter list for TM1 card EAO terminal function at GK820 platform.

C4-25	EAO output function	Same as C3-00	0	△
C4-26	EAO offset	-100.0%~100.0%	0.0%	×
C4-27	EAO gain	-2.000~2.000	1.000	×
C4-28	EAO filtering time	0.0s~10.0s	0.0s	△

5.3 EX

Below table is the parameter list for TM1 card EX terminal function at GK620 platform.

C0-07	Function of terminal EX (on IO option board)	Same as C0-01	0	×
C0-11	Filtering time of digital input terminal	0.000s~1.000s	0.010s	△
C0-15	Digital input terminal enabled status setting 2	Hundreds place: EX (on TM1 card) 0: Positive logic 1: Negative logic	0000	×
C0-20	Option of virtual input terminal	000~77F 0: Actual terminal in effect 1: Virtual terminal in effect	000	×

		Ones place: BIT0~BIT3: X1~X4 Tens place: BIT4~BIT6: X5~X6, EX Hundreds place: BIT8~BIT10: AI1~AI2, EAI (EX and EAI located at IO option board)		
U0-18	Digital input terminal status	00~7F	00	◎

Below table is the parameter list for TM1 card EX terminal function at GK820 platform.

C4-23	Function of terminal EX	Same as C1-00	0	×
C0-11	Filtering time of digital input terminal	0.000s~1.000s	0.010s	△
C0-15	Digital input terminal enabled status setting 2	Thousands place: EX (on TM1 card) 0: Positive logic 1: Negative logic	0000	×
U0-18	Digital input terminalstatus	00~7F	00	◎

5.4 ERO (EA/EB/EC)

Below table is the parameter list for TM1 card EA/EB/EC terminal function at GK620 platform.

C1-03	Option board relay output function (EA/EB/EC)	Same as C1-02	15	△
C1-07	Option board relay output time delay (EA/EB/EC)	0.0s~3600.0s	0.0s	△
C1-08	Enabled state of digital output EA/EB/EC	Ones place: Y1 0: Positive logic 1: Negative logic Tens place: Y2 (same as ones place) Hundreds place: control board relay output (same as ones place) Thousands place: option board relay output ERO (same as ones place)	0000	×

Below table is the parameter list for TM1 card EA/EB/EC terminal function at GK820 platform.

C4-29	Option board relay output function (EA/EB/EC)	Same as C1-00	0	△
C4-30	Option board relay output delay time (EA/EB/EC)	0.0s~3600.0s	0.0s	△
C4-32	Enabled state of digital output EA/EB/EC	0: Positive logic 1: Negative logic	0	×