

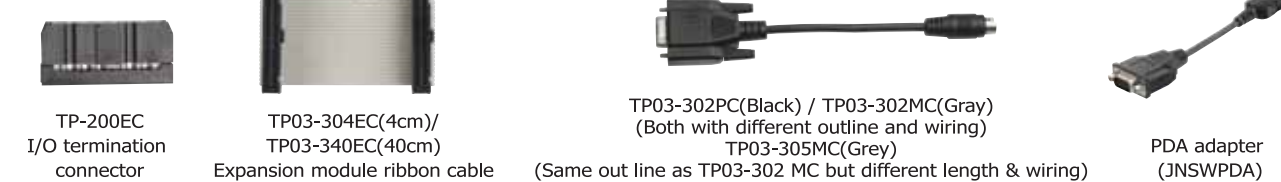
Unique Feature

1. Main units: 14/20/26/30/36/40/60 I/O's expandable to 256 digital I/O's and 60/10 (12 bit)analog I/O's.
2. The three programming languages: Ladder, IL(Instruction List) and SFC are all available for TP03.
3. Program memory: 4 to 16k size, including basic and application instructions, such as : ADD/SUB/MUL/DIV, trigonometry as SIN/COS/TAN...,matrix input and 7-segment LED display output and PID control with floating-point calculations.
4. Three communication ports on the main unit , can be used to establish Networks up to a maximum distance of 1.2 Km as follows:
 - (1)Computer link: One PC as master can control as many as 255 TP03's as slaves.
 - (2)Data Link: One TP03 as master can control up to 15 other TP03's.
 - (3)Remote I/O: One TP03 as master can control up to four TP03's as slaves, each with max 36/24 I/O's.
5. PC/PDA port can be used for networking to other equipment or operator panels OP07/OP8.
6. Internal high speed pulse output (Max 100KHZ) can be interface with servo controllers.
7. Internal high speed counter (Max 100KHZ) can be interfaced to encoders with precise pulses.
8. User program is stored in flash memory (PLC type M) and EEPROM (PLC type H).Battery back up for user data and RTC is included as standard.
9. TP03 series product have a standard height of 90mm.
10. Plugable terminals (PLC type H) and DIN rail mounting enables simple installation and maintenance.
11. Profibus, Devicenet and Ethernet (TCP/IP) communication Facility with option cards.
12. PLC software (Ladder, IL, SFC) and PDA editing Software using (IL) instruction list.
13. TP02 expansion modules are suitable for use with TP03.
14. ALL TP03 Series have CE/UL certification.

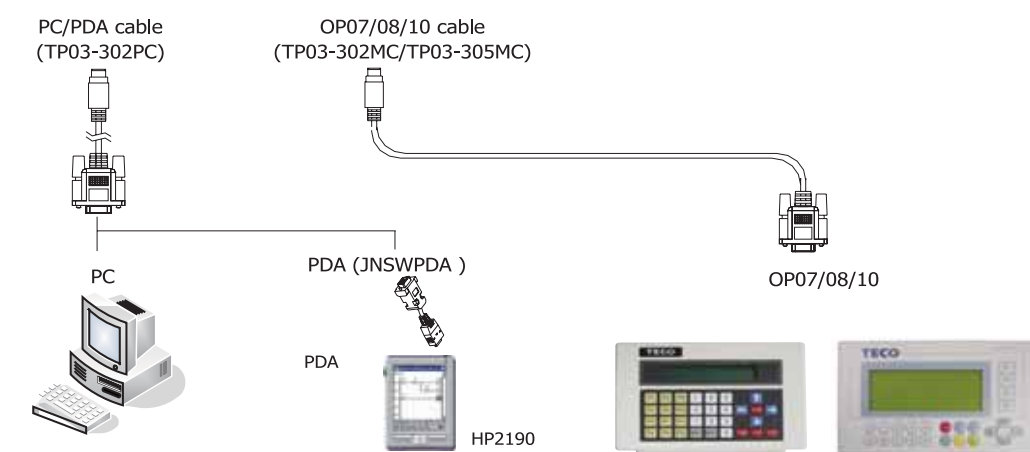
Interface & accessory list

Model	Accessory	Description	Type No.	Remark
Main module	included as standard	I/O termination connector	TP-200EC	install TP-200EC into the connector in the last expansion module in order to form a I/O loop
		Battery (for 5 years)		
		RS485 Built-in(H type only)		
		Standard cover for expansion card	TP03-0CV	
PC06	included as standard	Installation manual		Instruction /Operation manuals for TP03-PC and TP03-PDA are in PDF format
		1.8M cable(black)	TP03-302PC	
OP07/OP08/OP10	included as standard	Compact Disk	TP03-PC06	
TP03 Expansion module	included as standard	1.8M cable(grey)	TP03-302MC	26 pins • only for TP03 expansion module
		4cm cable for expansion module	TP03-304EC	
	Option	PDA adapter	JNSWPDA	Only for OP08/OP10
		5M cable(grey)	TP03-305MC	
TP03 Expansion module	Option	40cm cable for expansion module	TP03-340EC	26 pins • only for TP03 expansion module

Profile

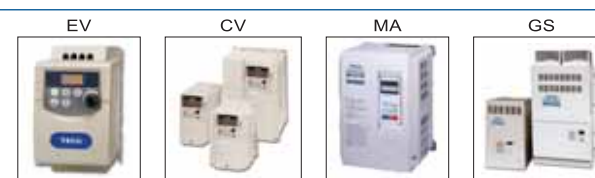


System configuration



TECO INVERTER

- EV series : 0.25~1HP(110V),0.25~3HP(220V),1~3HP(440V)
- CV series : 0.5~40HP(220V),1~75HP(440V)
- MA series : 1~40HP(220V),1~75HP(440V)
- GS series : 25~100HP(220V),25~400HP(440V)



TECO PLC

- TP03 series : 14/20/26/30/36/40/60 I/O MAX256points
- SG2 series : 10/12/20points



TECO SERVO

- JSDA series : 100W~15KW(220V)
- JSDE series : 50W~2KW(220V)



Distributor

TECO TECO ELECTRIC & MACHINERY CO., LTD.

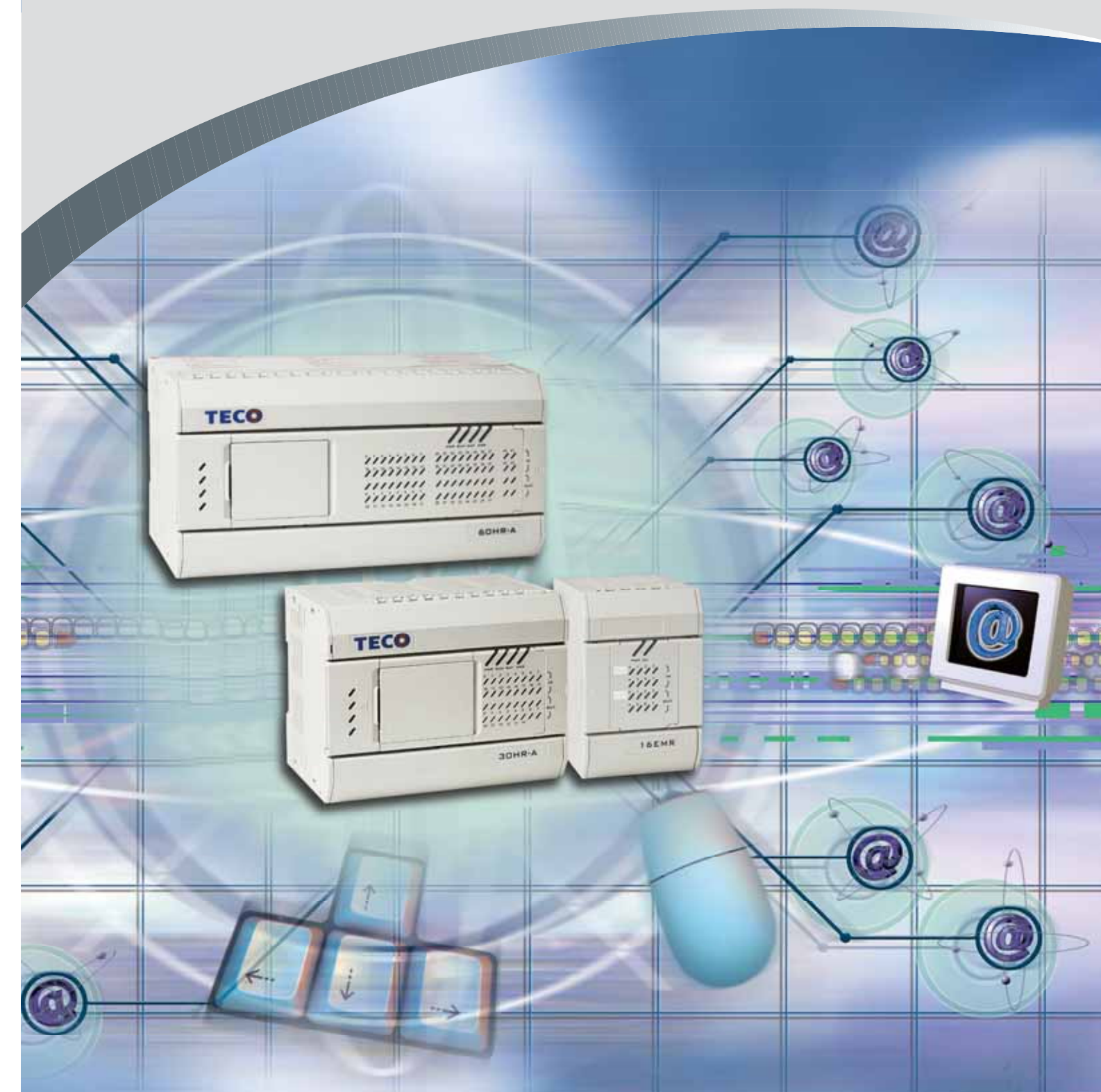
10F, No.3-1, Yuan Cyu St., Nan-Kang District, Taipei 115, Taiwan TEL:886-2-66159111Ext.1724 FAX:886-2-66151033

<http://www.teco.com.tw>
GJ-38-03 2009-07-31

Programmable Logic Controller

TECO

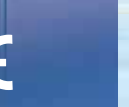
TP03 Series



TP03 Series

TP03 is the latest generation of PLC developed by TECO. The high-speed and high quality programmable logic controller has following features:

- Easy to install, maintain and program.
- Basic instructions scan time: 0.31 us /step (ANDB), 0.45 us/step (LD).
- High speed counters:(5-100KHZ) Single/Dual channel with Up/down, Set/Reset and Interrupt features.
- High speed communication ports.
- 1ms/10ms interrupt timer.
- Built in RTC (Real Time Clock).(H type PLC only).
- PWM & two transistor type pulse outputs.
- RUN / STOP Switch.
- Two integrated external potentiometers on main unit.
- Various expansion modules such as A/D, D/A, Communication, etc.



General specification

Item		Type		14S	20S	26S	36S	20M	30M	20H	30H	40H	60H		
Basic unit outline				Brick type											
Operation control				Cyclic scanning of user program											
Input/ output				Cyclic scanning of user program and input and output											
Program language				Ladder /IL(Instruction List)/SFC											
Digital I/O	Digital input	8	12	16	20	12	16	12	16	24	36				
	Digital output	6	8	10	16	8	14	8	14	16	24				
Expansion module	Digital module	Expandable to 80 points				Expandable to 128 points						Expandable to 256 points			
	Analog module	2x4AD+ & 1x2DA+ or 1x8AD &1x2DA										1x4AD+ & 1x2DA+ & 7x8AD & 4x2DA			
Max Analog I/O				8 input channels /2 output channels								60 input channels /10 output channels			
Scan time	Basic instruction	32										ANB/ORB ...etc.: 0.31 μs/ step			
		ANB/ORB ...etc.: 0.62 μs/ step										LD/AND/OR...etc.: 0.36 ~0.45 μs/ step			
		LD/AND/OR...etc.: 0.9 μs/ step													
	Application instruction	121				134				140					
Relay and register	Digital I/O relay	X000~X377(256 points) / Y000~Y377(256 points)													
	Auxiliary relay	General auxiliary relay: M0~M1535 (1536 points)					General auxiliary relay: M0~M7679 (7680 points) Data Link:M2000~M3023 Remote I/O:M4200~M4355,M4600~M4695 OP07/OP08:M1600~M1615								
		Special auxiliary relay: M8000~M8511 (512points) S0~S1023 (1024 points)					S0~S4095 (4096 points)								
	Timer	100 points (100ms:44 points : 10ms: 46 points : 1ms with accumulating function: 4 points : 100 ms with accumulating function: 6 points : 1ms: 256 points) . Analog potentiometer timer: 2 points					512 points (100ms: 200 points : 10ms: 46 points : 1ms with accumulating function: 4 points : 100 ms with accumulating function: 6 points : 1ms: 256 points) . Analog potentiometer timer: 2 points								
		136 points (16 bit:100 points, 32bit: 36 points) General register:					256 points (16 bit: 200 points, 32bit: 56 points) General register:D0000~D7999(8000points); File register:D2000~D3299 (1300 points) OP07/OP08: D3300								
	Data register	D0~D511(512points)					File register:D2000~D3299 (1300 points) OP07/OP08: D3300								
	Index register	Special register: D8000~D8511 (512points) 32points: V000~V0015 / Z000~Z0015													
		Stack pointer	Mark: N0~N7 (8points), pointerP0~P127(128points), input interruption pointer: I00~I30(4points), timer interruption pointer: 16**~I8** (3points),counter interruption pointer I010~I060 (6points)					Mark: N0~N7 (8points), pointer P0~P255 (256 points), input interruption pointer: I00~I50 (6points), timer interruption pointer: 16**~I8** (3points), counter interruption pointer I010~I060 (6points)							
Constant	decimal (K)		16 Bit : -32,768~32,768 ; 32 Bit : -2,147,483,648~2,147,483,648												
	Hex (H)	16 Bit : 0~FFFFH ; 32 Bit : 0~FFFFFFFFH													
RTC				N.A								Built-in: Second (D8013), Minute (D8014), Hour (D8015), Day(D8016), Month (D8017),Year (D8018), week(D8019) And with 30s offset			
Run/stop Switch				Built-in											
Potentiometer				N.A					2 points built-in and 6 points expansible (TP03-6AV optional)						
High speed input (X0~X5)	High speed counter	Single channel:4 points 10KHz max					Single channel : 4points 10KHz and 2 points 5KHz max.			Single channel : 4points 100KHz and 2 points 5KHz max.					
		Dual Channel: 2 points 10KHz													
High speed input (X0~X5)	Interrupt input	4points (corresponding to I00~I30): Minimum pulse width 50 μs					6points (corresponding to I00~I50): Minimum pulse width 50 μs			6points (corresponding to I00~I50): Minimum pulse width 5 μs					
		Pulse output					2 points: Y0/Y1 with acceleration/ deceleration			2 points: Y0/Y1					
Pulse output	PWM output	N.A					1KHz max.			100KHz max.					
	Frequency	N.A													
Communication port	PC/PDA	RS232, for upload/download program to/from TP03													
	RS485 Communication	Built-in 1 communication port for Data Link, Remote I/O or Computer Link, max. 307.2k bps					N.A			Built-in 1 communication port for Data Link, Remote I/O or Computer Link,max. 307.2k bps					
	Expansion card	N.A					Either RS485 or RS232 communication card is available for the port and both have Modbus communication protocol, max. 307.2k bps.								
Self-diagnosis				Input/output inspection, system processing time out inspection, illegal instruction inspection, program language syntax inspection and password setting											
Supervise/ Troubleshoot				Display processing time, byte/bit character or device set											
Terminal block				Fixed, unremovable					Removable						
Dimension				116 x 90 x 64 mm					116 x 90 x 83 mm			177 x 90 x 83 mm			

Main modules

Type	Rated Voltage	User 24Vdc	Input point			Output point			Dimension
			point	type	Input current	point	type	Max output current	
TP03-14SR-A	100~240 VAC	250mA	8	Relay	24VDC	6	2A/point	116×90×64mm See Fig1	116×90×64mm See Fig2
TP03-20SR-A			12			8			
TP03-26SR-A			16			10			
TP03-36SR-A			20			16			
TP03-20MR-A			12			8			
TP03-30MR-A			16			14			
TP03-20HR-A			12			8			
TP03-30HR-A			16			14			
TP03-40HR-A			24			16			
TP03-60HR-A			36			24			
TP03-40HR-D	24VDC	N. A	24	Transistor	7mA	16	0.3A/point	116×90×83mm See Fig4	177×90×83mm See Fig4
TP03-60HR-D			36			24			
TP03-20MT-A			12			8			
TP03-30MT-A			16			14			
TP03-20HT-A			12			8			
TP03-30HT-A			16			14			
TP03-40HT-A			24			16			
TP03-60HT-A			36			24			

Profile



Fig 1



Fig 2



Fig 3

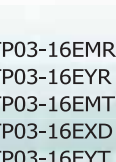
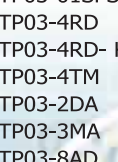


Fig 4

Expansion module

Type No.	Power	In/Out point	Description	Dimension	Remark
TP03-01SPS-A	100~240VAC	N.A	Power source for expansion modules	57 x 90 x 83 mm	
TP03-4RD		4 / 0	PT-100 temperature input * 4 channel		
TP03-4RD-K		4 / 0	PT-1000 temperature input * 4 channel		
TP03-4TM		4 / 0	J/K temperature input * 4 channel		
TP03-3MA	24Vdc	2 / 1	0~10V/0~20mA analog input * 2 channel	57 x 90 x 83 mm	
TP03-2DA		0 / 2	0~10V/0~20mA analog output * 2 channel		
TP03-8AD		8 / 0	0~10V/0~20mA analog input * 8 channel		
TP03-16EMR		8 / 8	8 points DC input & 8 points relay output		
TP03-16MT	N.A	8 / 8	8 points input & 8 points Tr. output	57 x 90 x 83 mm	
TP03-16EXD		16 / 0	16 points Digital input		
TP03-16EYR		0 / 16	16 points Digital relay output		
TP03-16EYT		0 / 16	16 points Tr. outputs		

Profile



Expansion Cards

Type No.		Description	Remark
TP03-0CV	Built-in	Standard cover	
TP03-485RS	Optional	RS485 Multi-function communication port	
TP03-2AI		0~10V analog input port*2(10bit)	
TP03-2TI		Timer(0~30s)input port*2	
TP03-6AV		Analog potential meter input port*6	
TP03-1ME		EEPROM memory	

Profile



TP03-0CV



TP03-485RS



TP03-2AI



TP03-2TI



TP03-6AV



TP03-1ME

Expansion peripheral equipment

Type No.	Power	Description	Remark
OP07	N.A	2 line LCD ,timer and counter setting device	See Fig5
OP08	24Vdc	2 line LCD ,timer and counter setting device	See Fig5
OP10	24Vdc	4 line LCD ,timer and counter setting device	See Fig6
PC06	N.A	TP03 PLC PC software	See Fig7
TP03-PDA06	N.A	TP03 PLC PDA software	See Fig7

Profile

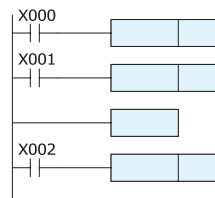
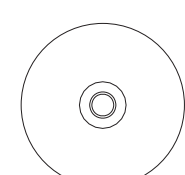
OP07/OP08 Fig 5



OP10 Fig 6



PC06/PDA06 Fig 7



PLC software

Communication module

Type No.	Power	Description	Dimension	Remark
TP03-DNet	24Vdc	DeviceNet slave	38 x 90 x 59mm	
TP03-PBus		Profibus - DP slave		
EN01		TCP/IP		

Profile



TP03-DNET



TP03-PBUS



EN01

Basic programming instruction list

Basic instruction list		
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