

EASY



xLogic .Small & Ingenious!

Beyond your expectation :

Latest Micro PLC - with Ethernet&GSM, Modbus RTU/ASCII
supported , Modbus Master/Slave!

Micro Automation

Version:2.1

xLogic Micro PLC

In infrastructure ...



Heating / ventilation / air-conditioning

- Energy management
- Heating
- Cooling systems
- Ventilation systems
- Air-conditioning systems



Building management systems

- Light control (outdoor and indoor lighting)
- Door/gate control
- Roller blind and awning control
- Irrigation and sprinkler systems



Monitoring equipment

- Access controls
- Monitoring of drive controls
- Alarm systems
- Limit value checks
- Traffic light controllers
- Luggage inspection

Profitable switching and controlling

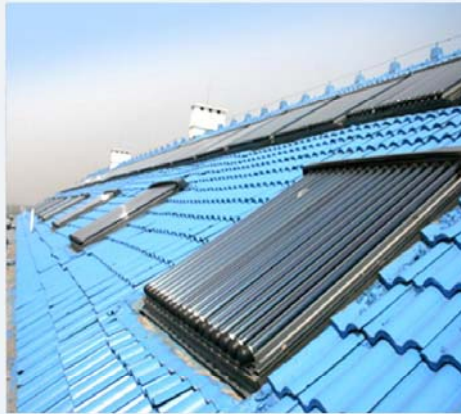
In automation, all of the potential means of savings must be consistently used – from planning and commissioning to operation. What is needed are systems that allow the constantly increasing requirements to be quickly and economically fulfilled : Intelligent solutions that stand out due to maximum flexibility, reliability, and user-friendliness. The best example of innovative technology that completely fulfills these high requirements is xLogic – the world's leading logic module for switching and controlling.

Intelligent technology with a vision

xLogic is ideally suited for implementing simple automation tasks in industry and building management systems.

The intelligent logic module is characterized by maximum user-friendliness and it leaves little to be desired in terms of functionality, thanks in no small part to the high memory capacity and efficient use of memory. With the use of expansion modules, xLogic can control even the most complex plants without any problems.

...and industry



Transport equipment

- Conveyor belts
- Lifting platforms
- Lifts
- Silo systems
- Automatic feeders

Special solutions

- Solar plants
- Use on ships
- Use in extreme ambient conditions
- Display panels and traffic signboards

Machine controls

- Motors, pump and valve controls
- Air compressors
- Extraction and filtering installations
- Sewage plants
- Sawing and planing machines
- Etching and cleaning equipment

**Tried and tested millions of times –
in numerous applications**

In combination with the xLogic software ,
the handling of our logic module is child's play:
Creating programs, project simulating with an LCD
panel diagram and documentation are quite easy
using drag & drop – for maximum userfriendliness.
All of this is the reason why xLogic has proven itself
over the wide acclaim and recognition from the use
effect in multiple applications around the world

Multiple applications made possible

To ensure diverse applications can be
accomplished, xLogic Micro PLC also
provides a wide selection of expansion
modules along with its powerful CPU units,
with the need of your industrial process
control applications, various expansion
units enhance the basic to provide additional
capabilities , such as :

A range of Digital and Analogue I/O
RS485 connectivity
SMS communication
Ethernet connectivity

**Whether in infrastructure
or industry – a quick and
cost-effective solution**



- Detachable LCD
- Rugged, low cost model.
- DIN Rail or Wall mounted.
- Connect optional Ethernet module.
- Connect HMI / Operator Panel using Modbus.
- 4 routes High Speed Counting on all DC-type units

xLogic –small,simple, reliable



xLogic in assemblies with the function modules



Simplest connection:
Bridge/cable available

ELC-12 range is advanced level model, incorporating a good mix of digital & analogue IO , Integrated High Speed inputs and PWM output, counters, timers, real time clock and time switch functions, removable keypad LCD, 3 built-in communication ports including expansion one. Available in 120V/240VAC or 12V/24VDC versions ; Easy to configure with drag-and-drop function blocks or ladder using FREE xLogicSoft software.



Outstanding performance and overview

With xLogic (ELC-12) four of the eight digital inputs that are available on the hardware can be used as analog inputs and four as high-speed counter inputs up to a frequency of 14 kHz (I5,I6) ,60kHz(I7,I8). With a program memory for 512 function blocks, the 12/24 V DC devices provide sufficient capacity for many stand-alone applications. Up to 64 four-line message texts with a maximum of 10 per line ensure user friendliness in practice and clearly display all of the relevant machine parameters. Function blocks for arithmetic and pulse width modulation open up further usage options.



Remote keypad program & modify parameter

Faceplate (ELC-HMI's installation unit), making it possible for ELC-HMI to be externally installed in the front door of switch cabinet for easy observation and operation while ELC-12 CPU is required to be separately installed inside.

Highlights of xLogic(ELC-12)

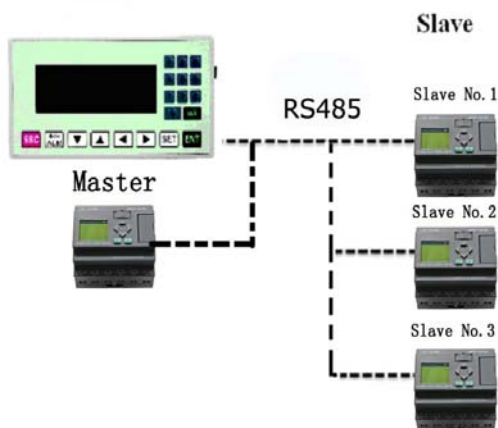
- Can be modularly expanded up to 76 I/Os
- 230 V units can be expanded with analog modules
- Detachable LCD
- Data Logging-Data from the production process can be saved in SD card of the external accessory called ELC-MEMORY to either read it with a PC or evaluate it from the SD card at the workstation.
- Extremely simple software
- Manual programming via keypad feature (optional)
- Display of up to 64 messages
- Ethernet capability available
- Modbus RTU/ASCII protocol supported
- Retentive memory capability standard feature on the ELC-12 model Display
- Password protection
- It's optional for xLogic to act as slave or master in certain Modbus RTU communication network.
- Customizable Start-up page / screen
- Powerful communication capability(1 RS232 port and 2 RS485 ports built-in)



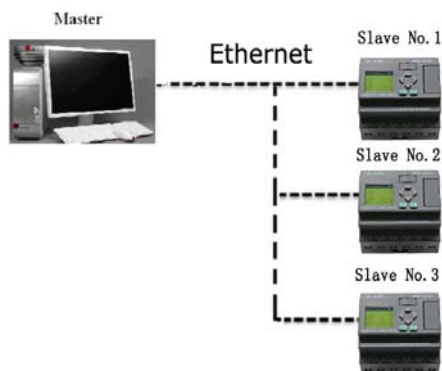
xLogic - Powerful communication capability



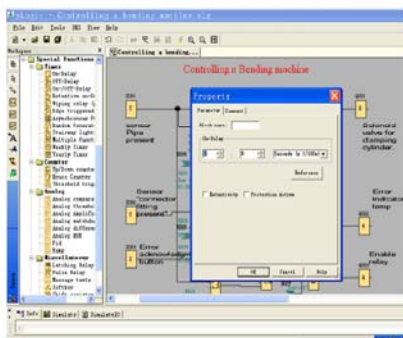
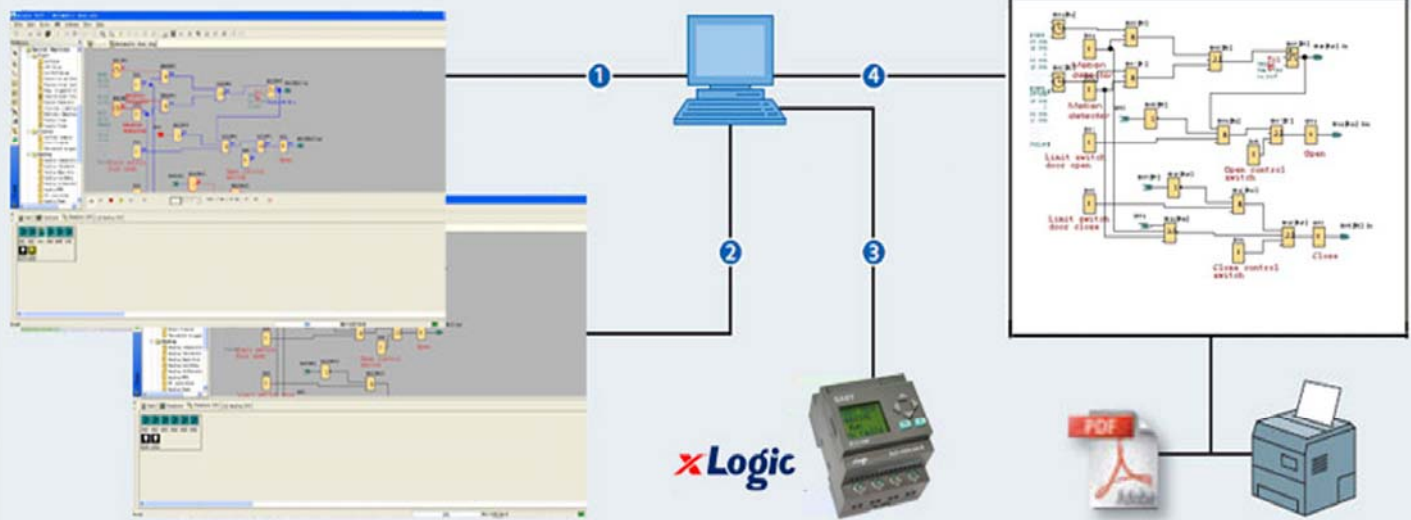
A. RS232 port/communicate with third party device like HMI etc.



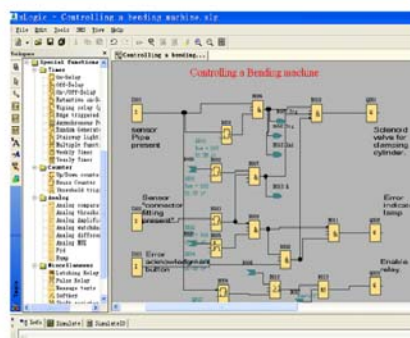
B. RS485 port/communication between xLogic and xLogic/third party device like HMI etc.



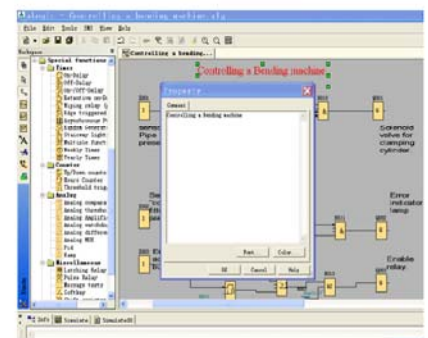
C. Ethernet LAN interface/ communication between PC and xLogic CPUs



Using the dialog boxes, function block parameter setup and modification is a quick and easy task to complete.



Link function blocks to complete your program. Set up as many as 512(ELC-12) or 256(ELC-18) function blocks in one circuit program.



Use the "label tool" to write a comment, instruction or help note on the xLogic circuit program screen.

Vivid off-line simulation LCD panel display: available



Analog IO value : available

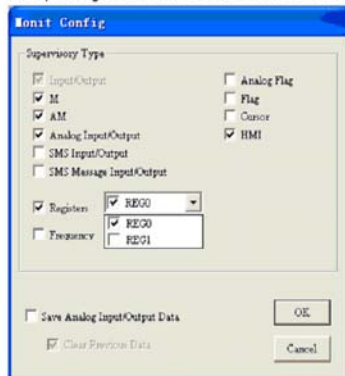
311	0	521		
AI001	AI002	AI003		
			311	0
			AQ011	AQ012
				521
				AQ021

Digital IO status : available



On-line monitor/test

Multiple registers can be accessed individually.



Remote control the
ELC-18CPU via SMS.

Remote monitoring
via SMS messages
(Alarms, IO Status,
counters, analog
values etc).

Easy configuration
with free of charge
xLogicSoft software.



Incorporating the ELC-SMS-D-R module into a system allows the user full remote monitoring as well as remote control of the application via SMS (Short Message Service) on any GSM phone or PDA.

Worldwide availability, low operating cost, easy installation and integration in combination with high reliability makes SMS remote control and monitoring a desirable option in hard to reach, distant or hazardous environments.

GSM Network support:

The ELC-SMS-D-R is equipped with a Quad-band GSM module offering seamless functionality on 850Mhz, 900Mhz, 1800Mhz, 1900Mhz.





xLogic Software – simply professional

xLogicsoft – stands for sensationally easy and quick configuration. This allows the creation of function block diagrams by selecting the respective functions and their connection via drag & drop. In addition, the entire switching program and the menu of LCD can be simulated and tested offline on the PC. Also possible: an online test in both program displays during operation. Last but not least, xLogicsoft provides professional documentation with all of the necessary project information such as switching programs, comments, and parameter settings. Free of charge !

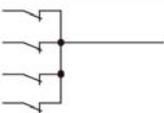
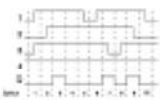
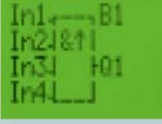
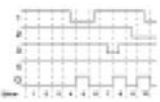
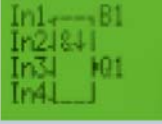
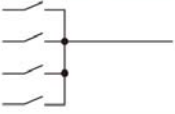
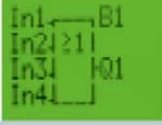
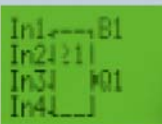
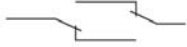
A decisive argument for xLogic

xLogicsoft is appealing in every respect. The user-friendliness of our software is unequalled on the market. The preferential configuration in the function block diagram is more manageable than in the contact diagram, especially for programs with many special functions. The standard simulation function makes program development easy. You can immediately simulate, optimize and then group individual program sections for total functionality. The outstanding functionality of our software is rounded out by professional tools for creating the user documentation. A context-sensitive help function brings additional advantages: It puts an end to the tiresome business of paging through manuals and reduces the weight of your luggage when making service calls. Last but not least, an integrated tutorial and numerous examples facilitate your entry into modern automation technology.

xLogic functions

With the eight basic functions and 36 special functions, simple switching programs can be created quickly – either directly on the device or via PC

The eight basic functions

	AND (and) series connection NO contact	
	NAND (and not) parallel connection NC contact	
	AND with edge evaluation (pos. edge)	
	NAND (and not) with edge evaluation (neg. edge)	
	OR (or) parallel connection NO contact	
	NOR (or not) series connection NC contact	
	XOR (exclusive or) 2-way changeover	
	NOT (not) inverter	

xLogic pays off

Up to 50% cost savings

- Replaces many conventional switching devices
- Requires less space in the control cabinet
- Fewer accessories
- Less storage space
- Saves on servicing costs because it is free of wear

Up to 70% time savings

- Simply snap it onto a standard mounting rail
- Low wiring overhead
- Simple programming using xLogicsoft
- Use ready-to-use sample programs at no cost or create and test them on the PC and quickly transfer them free of errors
- Automatic daylight-saving adjustment
- Documentation

Up to 70% space savings

- 4/6 modular widths suffice as a replacement for many relays, time switches, and contactor relays
- 8 basic and 36 special functions replace many conventional switching devices

The special functions

ON delay



OFF delay



ON/OFF delay



Retentive on-delay



Wiping relay (pulse output)



Edge triggered wiping relay



Asynchronous pulse Generator



*Binary inputs of function blocks can be negated directly



xLogic Micro PLC family- ELC-18 Series

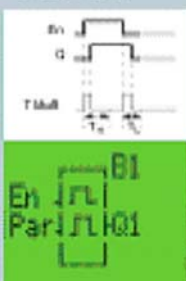
- 49 ready-to-use functions integrated – no additional devices such as operating hours counter required
- Extremely large program capacity : up to 256 functions possible
- 8 digital inputs (optional 8 AI with 12/24 V DC) and 6 digital outputs on board(ELC-18)
- Flexibly expandable up to 84 DI, 78 DO, 26 AI, and 18 AO(ELC-18)
- Display of message texts, actual and setpoint values and direct modification of the values on the display .
- Integrated data retentivity – ensures backup of the current values in the event of a power failure



xLogic .

Small & Ingenious!

Random Generator



Stairway lighting switch



Multiple function switch



Weekly timer



Yearly timer



Up/Down counter



Hours counter



xLogic special functions..

Threshold trigger



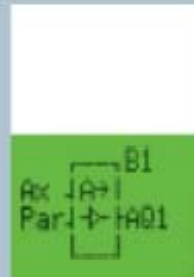
Analog comparator



Analog threshold switch



Analog amplifier



Analog watchdog



Analog difference threshold switch



Analog MUX



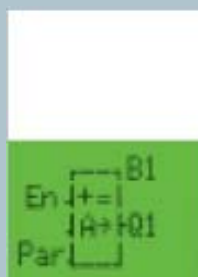
PI controller



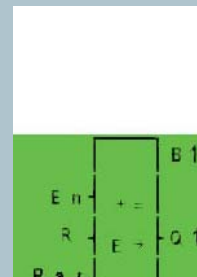
Analog Ramp



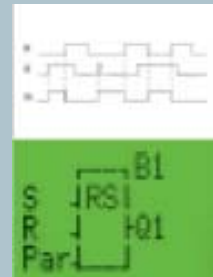
Analog math



Analog math error detection



Latching relay



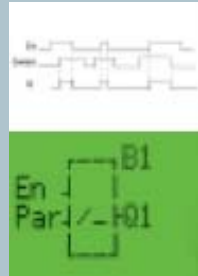
Pulse Relay



Message text



Softkey (soft switch)



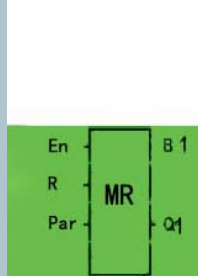
Shift register



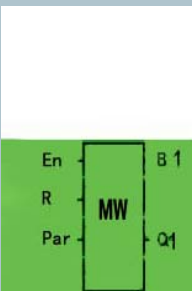
PWM(Pulse width modulation)



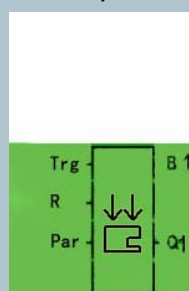
Modbus read



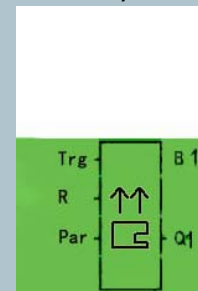
Modbus write



Memory write



Memory read





Expansion modules for ELC-18 CPU

xLogic Text panel

ELC-MD204L is a Human-Machine Interface that is used with many kinds of PLC (or the other intelligent controllers with communication ports). With ELC-MD204L, both the values of the PLC inner registers and the relays status of PLC can be monitored or changed through texts or LEDs. So the operation of the machines or the devices is more easy and convenient.

- The windows are made with the editor TP200 on PC. The windows are downloaded with serial port.
- The PLC communication protocols are downloaded to the ELC-MD204L with the data of the windows, so the engineer needn't program of communication.
- It can work with most popular PLC, including SIEMENS, Mitsubishi, OMRON and etc. It supports some general protocols like Modbus RTU(xLogic Micro-plc using), Free communication and ECOSTEP protocol applied in KINCO servo motor driver.
- Password protecting function
- Alarm List function. The current alarm information is displayed one by one.
- STN LCD with background lights. 4 rows (24 western or 12 Chinese characters in every row) of characters can be displayed at the same time.
- The front panel of the ELC-MD204L accords with IP65 standard. It is waterproof and greaseproof.



Expansion of the digital inputs and outputs:

- ELC-E-16AC-R
- ELC-E-16DC-D-R
- ELC-E-16DC-DA-R
- ELC-E-16DC-D-TN
- ELC-E-16DC-DA-TN

Analog expansion modules for standard ELC-12 series*

- Expansion of the analog inputs:
 - ELC-E-16DC-DA...for 0-10 V signals
 - ELC-E-PT100 for Pt100
 - ELC-E-AI(I) for 0/4 ... 20 mA signals
 - ELC-E-AQ-V for 0-10 V signals

Communication modules*

- ELC-RS485
 - Connect standard ELC-18 CPU into RS485 BUS
- ELC-Ethernet-DC/AC
 - Ethernet capacity for standard ELC-18 CPU, 12/24DC , 110-240VAC optional.
- ELC-SMS-D-R
 - GSM/SMS capacity for standard ELC-18 CPU.

* If more than one expansion modules involved in a certain system, then those expansion modules shall be respectively assigned with individual address. The address of expansion is supposed to be set physically via digital switch in the expansion module. In addition, there is no restriction on voltage class for the connection between CPU and expansion, namely, It is possible for DC type expansion to be connected with AC type CPU, vice versa. Only one expansion module shall connect to CPU when you set expansion module address via panel key of CPU



xLogic Micro PLC family- ELC-12 Series



- 45 ready-to-use functions integrated – no additional devices such as operating hours counter required
- Extremely large program capacity : up to 512 functions possible
- 8 digital inputs (incl. 4 AI with 12/24 V DC) and 4 digital outputs on board(ELC-12)
- Flexibly expandable up to 40 DI, 36 DO, 36 AI, and 16 AO(ELC-12)
- Display of message texts, actual and setpoint values and direct modification of the values on the display (not on Pure variants)
- Integrated data retentivity – ensures backup of the current values in the event of a power failure



ELC-HMI

Remote keypad program & modify parameter Faceplate (ELC-HMI's installation unit), making it possible for ELC-HMI to be externally installed in the front door of switch cabinet for easy observation and operation while ELC-12 CPU is required to be separately installed inside.

- Display of up to 64 messages
- Display of up to 4-line X10-character and up to 4 I/O status parameters per message
- Manual program and modify parameters via keypad
- Modify CPU's address communication parameter such as baud rates.
- Password protection setting
- RUN/STOP mode switch



Expansion modules for ELC-12 CPU

■ Expansion of the digital inputs and outputs:

- ELC12-E-8AC-R
- ELC12-E-8DC-DA-R
- ELC12-E-8DC-DA-TN(PNP)
- ELC12-E-8DC-DA-TP(NPN)
- ELC12-E-8AC-DI(pure Input ,without output)
- ELC12-E-8DC-DI(pure Input ,without output)

Analog expansion modules*

- Expansion of the analog inputs:
- ELC12-E-8DC-DA.... 0-10 V signals
- ELC12-E-AI(I)..... 0/4 ... 20 mA signals
- ELC12-E-PT100 for Pt100
- ELC12-E-AQ-V for 0-10 V or signals
- ELC12-E-AQ-I for 0 ... 20 mA signals

Communication modules*

- ELC12-E-RS485
- Connect standard ELC-12 CPU into RS485 BUS
- ELC12-E-Ethernet
- Ethernet capacity for standard ELC-12 CPU, 12/24DC , 110-240VAC optional.

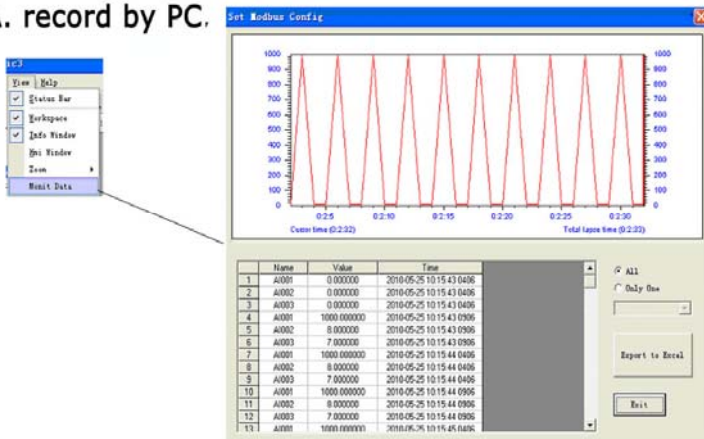
* If more than one expansion modules involved in a certain system, then those expansion modules shall be respectively assigned with individual address. The address of expansion is supposed to be set physically via digital switch in the expansion module. In addition, there is no restriction on voltage class for the connection between CPU and expansion, namely, It is possible for DC type expansion to be connected with AC type CPU, vice versa.





Record function

A. record by PC.



The analog values of analog inputs and analog outputs are transferred to the PC via ELC-RS232 ,ELC-USB cable or the Ethernet module and are further documented there in an Excel table

	A	B	C	D	E	F	G
1	Value_Inc	IO_Name	IO_Value	Value_Time			
2	1	AI001	0	2010-05-25 10:00:34 0234			
3	2	AI002	0	2010-05-25 10:00:34 0234			
4	3	AI003	0	2010-05-25 10:00:34 0234			
5	4	AI001	1000	2010-05-25 10:00:34 0734			
6	5	AI002	7	2010-05-25 10:00:34 0734			
7	6	AI003	6	2010-05-25 10:00:34 0734			
8	7	AI001	1000	2010-05-25 10:00:35 0234			
9	8	AI002	7	2010-05-25 10:00:35 0234			
10	9	AI003	6	2010-05-25 10:00:35 0234			
11	10	AI001	1000	2010-05-25 10:00:35 0734			
12	11	AI002	7	2010-05-25 10:00:35 0734			
13	12	AI003	6	2010-05-25 10:00:35 0734			
14	13	AI001	1000	2010-05-25 10:00:36 0234			
15	14	AI002	7	2010-05-25 10:00:36 0234			
16	15	AI003	6	2010-05-25 10:00:36 0234			
17	16	AI001	1000	2010-05-25 10:00:36 0734			
18	17	AI002	7	2010-05-25 10:00:36 0734			
19	18	AI003	6	2010-05-25 10:00:36 0734			
20	19	AI001	1000	2010-05-25 10:00:37 0234			
21	20	AI002	7	2010-05-25 10:00:37 0234			
22	21	AI003	6	2010-05-25 10:00:37 0234			
23	22	AI001	1000	2010-05-25 10:00:37 0734			
24	23	AI002	7	2010-05-25 10:00:37 0734			
25	24	AI003	6	2010-05-25 10:00:37 0734			
26	25	AI001	1000	2010-05-25 10:00:38 0234			
27	26	AI002	7	2010-05-25 10:00:38 0234			
28	27	AI003	6	2010-05-25 10:00:38 0234			
29	28	AI001	1000	2010-05-25 10:00:38 0734			
30	29	AI002	7	2010-05-25 10:00:38 0734			
31	30	AI003	6	2010-05-25 10:00:38 0734			
32	31	AI001	1000	2010-05-25 10:00:39 0234			
33	32	AI002	7	2010-05-25 10:00:39 0234			

B. New usage options thanks to data logging : ELC-MEMORY

Thanks to data logging, you can now save specific production or process data(such as I/O status ,analog values,register values etc) in SD card of the external accessory called ELC-MEMORY to either read it with a PC or evaluate it from the SD card at the workstation.

SD card up to 2 GB(expandable). This is advantageous if xLogic is used for controlling temperatures or monitoring levels, for example. Corresponding characteristics can be easily documented and evaluated. In the program, the user can define the time intervals in which or the event by which the temperature data or levels are to be recorded.

file in SD card of
ELC-MEMORY



2011-01-30 13:52:25 Q1--Q11=11110000100000000000
2011-01-30 13:52:31 Q1--Q11=11110000100000000000
2011-01-30 13:52:37 Q1--Q11=11110000100000000000



ELC-6 Series Overview

ELC-6 Series(Super Relay) is the entry level model of xLogic Micro PLC family, able to process up to 64 function blocks in a single program, also is the perfect maintenance product, and yet can adequately control a new process from the start. ELC-6 Series is capable of replacing many of the discrete components(such as multiple timers, relays, contactors and counters etc) used in conventional systems, opening up a whole new range of possibilities for economical simple control solutions. ELC-6 Series exclude expansion feature , NO keypad panel , NO PWM output & High Speed pulse counting capabilities, merely incorporating digital IO, clock with calendar, counters , timers, and available in 120/240VAC or 12V/24VDC versions.

Easy to configure with drag-and-drop function blocks using FREE xLogicSoft software

Note: The following function block cannot be used in ELC-6 series

Constant (Cursor key, Sms input/output,Sms message input/output)

Analog (Analog MUX, PI Controller,Analog Ramp,Analog Math,Analog Math error detection)

Miscellaneous(Message texts, Pwm,Modbus Read,Modbus Write)



- *Mini-size,light Weight.*
- *High efficiency ,good reliability.*
- *UPS function optional.*
- *Remote control function optional*

- EMI filter condenser.
- Input frequency:47-63Hz.
- Output voltage stability:±0.5%
- DIN rail mounting
- Wide range voltage input
(110-240VAC/140-340VDC).
- Ripple voltage tolerance range
(85-264VAC/120-370VDC).
- Output voltage fine adjustment range
(-5%--+10%,adjusting potentiometer V)
- Have the function of soft-start(to limit
the peak current of start and the pressure
of the voltage to the components).
- With the remote control function(By the
switch control the having and non-having
of the output voltage).
- With the over heat protection function(the
main control CMOS chip stops output when
the temperature is beyond 135℃and the
output will renew automatically when the
temperature reduces).

Switch Power Supply

Remote control and UPS function

- The current of the load can be roughly
adjusted(Means the maximum protective
mcurrent of the load ,adjusting
potentionmeter A).
- Effective:>75%.
- Insulation voltage endurance:>15kV.
- Power supply output with the LED Indicator.
- Ripple:≤150mVp-p.
- Have the short circuit and over-load
protection(short circuit protection means
miss-connect the output voltage in short ,
after disconnect, the output will be renew.
- Overload protection:105%-135%).
- With the UPS function. (External-connected
battery, provide with the UPS by the power
supply and the battery)

xLogic accessories



xLogic PC cables/USB PC cables

For the simple transfer of xLogic switching programs to and from PCs

ELC-RS232 cable also can be used as connection cable between xLogic CPU and HMI with RS232 port.



xLogic Programme copier

ELC-COPIER can be used to save user program and download program into xLogics.(Applied to whole xLogic family)



xLogic Data logging device: ELC-MEMORY

ELC-MEMORY is a data logging device with a mini-SD card for xLogic CPUs, specific production or process data(such as I/O status , analog values, register values etc)can be saved in SD card of ELC-Memory to either read it with a PC or evaluate it from the SD card at the workstation. It's good for data analysis. SD card capacity up to 2 GB(expandable)(merely applied to ELC-6/12& Upgraded ELC-18 CPUs)



HMI panel and ELC-COVER

HMI panel :ELC-HMI ,displaying and program

-making keypad panel for ELC-12 series CPU.

ELC-COVER, CPU'S cover with 13 LED

indicators indicating IO status, if LCD not required.



ELC-COVER-CABLE and ELC-HMI-FP

ELC-COVER-CABLE, connection cable between ELC-12 CPU and ELC12-HMI-FP (Faceplate) for long-distance application purpose, one and half meters standard length

ELC-HMI-FP, Faceplate (ELC12-HMI's installation unit), making it possible for ELC12-HMI to be externally installed in the front door of cabinet for easy observation and operation while ELC-12 CPU is required to be installed inside.



Connection bridge&cable

ELC-CB-A, connection bridge between ELC-12 CPU & Extension module. Free of charge!

ELC-CB-B,connection cable between ELC-12 CPU & Extension module, it can be used to remotely connect ELC-12 CPU to its extension units, 3-meter standard length

xLogic Mirco-PLC – the technical details

Standard CPU Units(ELC-6 series)	ELC-6AC-R	ELC-6DC-D-R	ELC-6DC-D-TN
Inputs	4 digital	4 digital	4 digital
of which can be used in analog mode	none	none	none
Input/supply voltage	110-240V AC	12-24V DC	12-24V DC
Permissible range	85 ... 265 V AC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC
with signal "0"	100 ... 253 V DC	max. 3 V DC,1mA	max. 3 V DC, 1mA
with signal "1"	max. 40 V AC 0.03 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA
Input current	min. 79 V AC, 0.08 mA		
Outputs	2 relays	2 relays	2 transistors(PNP)
Continuous current	10 A with resistive load; 2 A with inductive load	10 A with resistive load; 2 A with inductive load	0.3 A
Short-circuit protection	External fuse required	External fuse required	External fuse required
Switching frequency	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz with resistive load; 0.5 Hz with inductive load	10 Hz
Cycle time	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function
Integrated time switches/ power reserve	Yes / typ. 72 h	Yes / typ. 72 h	Yes / typ. 72 h
Connection cables	2 x 1.5 mm ² or 1 x 2.5 mm ²		
Ambient temperature	0 to + 55 °C		
Storage temperature	– 40 °C to + 70 °C		
Degree of protection	IP20		
Certification	CE		
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting		
Dimensions	W x H x D (48*90*64 mm)		
Programming cable	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)
xLogic <=> xLogic communication (RS485)	No	No	No
xLogic <=> network (Ethernet)	No	No	No
Third party device(HMI) <=> xLogic	Yes (modbus)	Yes (modbus)	Yes (modbus)
Maximum program memory	64 blocks	64 blocks	64 blocks
External memory module	No	No	No
Data logging	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)
Extensions	No	No	No
High speed input	No	No	No
RTC	Yes	Yes	Yes
HMI	No	No	No

Note: The following function block cannot be used in ELC-6 series

Constant (Cursor key, Sms input/output,Sms message input/output) ,Analog (Analog MUX, PI Controller,Analog Ramp,Analog Math,Analog Math error detection)

Miscellaneous(Message texts, Pwm,Modbus Read,Modbus Write,Memory Write,Memory Read)

Standard CPU Units(ELC-12 series)	ELC-12AC-R	ELC-12DC-DA-R	ELC-12DC-DA-TN	ELC-12DC-DA-TP
Inputs	8 digital	8 digital	8 digital	8 digital
of which can be used in analog mode	4 (0 to 10V)	4 (0 to 10V)	4 (0 to 10V)	4 (0 to 10V)
Input/supply voltage	110-240V AC	12-24V DC	12-24V DC	12-24V DC
Permissible range	85 ... 265 V AC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC
with signal "0"	100 ... 253 V DC	max. 3 V DC,1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA
with signal "1"	max. 40 V AC 0.03 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA
Input current	min. 79 V AC, 0.08 mA			
Outputs	4 relays	4 relays	4 transistors(PNP)	4 transistors(NPN)
Continuous current	10 A with resistive load; 2 A with inductive load	10 A with resistive load; 2 A with inductive load	0.3 A	0.3 A
Short-circuit protection	External fuse required	External fuse required	External fuse required	External fuse required
Switching frequency	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz with resistive load; 0.5 Hz with inductive load	10 Hz	10 Hz
Cycle time	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function
Integrated time switches/ power reserve	Yes / typ. 100 h	Yes / typ. 100 h	Yes / typ. 100 h	Yes / typ. 100 h
Connection cables	2 x 1.5 mm ² or 1 x 2.5 mm ²			
Ambient temperature	0 to + 55 °C			
Storage temperature	– 40 °C to + 70 °C			
Degree of protection	IP20			
Certification	CE			
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting			
Dimensions	W x H x D (72 x 90 x 68 mm)			
Programming cable	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)
xLogic <=> xLogic communication (RS485)	Yes	Yes	Yes	Yes
xLogic <=> network (Ethernet)	Yes	Yes	Yes	Yes
Third party device(HMI) <=> xLogic	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)
Maximum program memory	512 blocks	512 blocks	512 blocks	512 blocks
Data logging	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)
Extensions	Yes	Yes	Yes	Yes
High speed input	No	I5,I6(14KHZ) I7,I8(60KHZ)	I5,I6(14KHZ) I7,I8(60KHZ)	I5,I6(14KHZ) I7,I8(60KHZ)
High speed output(PWM)	No	No	No	Q3,Q4(333Hz)
HMI	optional	optional	optional	optional

Note:

Model instruction

ELC-12AC-R-HMI = ELC-12AC-R+ELC-HMI , ELC-12AC-R-CAP = ELC-12AC-R+ELC-COVER

ELC-12DC-DA-R-HMI = ELC-12DC-DA-R+ELC-HMI , ELC-12DC-DA-R-CAP = ELC-12DC-DA-R+ELC-COVER

ELC-12DC-DA-TN-HMI = ELC-12DC-DA-TN+ELC-HMI, ELC-12DC-DA-TN-CAP = ELC-12DC-DA-TN+ELC-COVER

ELC-12DC-DA-TP-HMI = ELC-12DC-DA-TP+ELC-HMI, ELC-12DC-DA-TP-CAP = ELC-12DC-DA-TP+ELC-COVER

Ecnoy CPU Units(ELC-12 series)	ELC-12AC-R-E	ELC-12DC-D-R-E	ELC-12DC-D-TN-E	ELC-12DC-D-TP-E
Inputs	8 digital	8 digital	8 digital	8 digital
of which can be used in analog mode	none	none	none	none
Input/supply voltage	110-240V AC	12-24V DC	12-24V DC	12-24V DC
Permissible range	85 ... 265 V AC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC
with signal "0"	100 ... 253 V DC	max. 3 V DC,1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA
with signal "1"	max. 40 V AC 0.03 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA
Input current	min. 79 V AC, 0.08 mA			
Outputs	4 relays	4 relays	4 transistors(PNP)	4 transistors(NPN)
Continuous current	10 A with resistive load; 2 A with inductive load	10 A with resistive load; 2 A with inductive load	0.3 A	0.3 A
Short-circuit protection	External fuse required	External fuse required	External fuse required	External fuse required
Switching frequency	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz with resistive load; 0.5 Hz with inductive load	10 Hz	10 Hz
Cycle time	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function
Integrated time switches/ power reserve	Yes / typ. 72 h	Yes / typ. 72 h	Yes / typ. 72 h	Yes / typ. 72 h
Connection cables	2 x 1.5 mm' or 1 x 2.5 mm'			
Ambient temperature	0 to + 55 °C			
Storage temperature	– 40 °C to + 70 °C			
Degree of protection	IP20			
Certification	CE			
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting			
Dimensions	W x H x D (72 x 90 x 68 mm)			
Programming cable	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)
xLogic <=> xLogic communication (RS485)	No	No	No	No
xLogic <=> network (Ethernet)	No	No	No	No
Third party device(HMI) <=> xLogic	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)
Maximum program memory	64 blocks	64 blocks	64 blocks	64 blocks
Data logging	No	No	No	No
Extensions	No	No	No	No
High speed input	No	No	No	No
PWM	No	No	No	No
HMI	No	No	No	No

Note:

1.The following function block cannot be used in Ecnoy ELC-12 CPUS

Constant (Cursor key, Sms input/output,Sms message input/output) ,Analog (Analog MUX, PI Controller,Analog Ramp,Analog Math,Analog Math error detection)

Miscellaneous(Message texts, Pwm,Modbus Read,Modbus Write,Memory Write,Memory Read)

- 2.Model instruction
- ELC-12AC-R-E-CAP = ELC-12AC-R-E+ELC-COVER
- ELC-12DC-D-R-E-CAP = ELC-12DC-D-R-E+ELC-COVER
- ELC-12DC-D-TN-E-CAP = ELC-12DC-D-TN-E+ELC-COVER
- ELC-12DC-D-TP-E-CAP = ELC-12DC-D-TP-E+ELC-COVER

Extensions Units(10) for ELC-12 CPU	ELC12-8AC-R	ELC12-8DC-DA-R	ELC12-8DC-DA-TN	ELC12-8DC-DA-TP	ELC12-8AC-DI	ELC12-8DC-DI
Inputs	4 digital	4 digital	4 digital	4 digital	8 digital	8 digital
of which can be used in analog mode	none	4 (0 to 10V)	4 (0 to 10V)	4 (0 to 10V)	none	none
Input/supply voltage	110-240V AC	12-24V DC	12-24V DC	12-24V DC	110-240V AC	12-24V DC
Permissible range	85 ... 265 V AC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	85 ... 265 V AC	10.8 V ... 28.8 V DC
with signal "0"	100 ... 253 V DC	max. 3 V DC,1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA	100 ... 253 V DC	max. 3 V DC, 1mA
with signal "1"	max. 40 V AC 0.03 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	max. 40 V AC 0.03 mA	min. 8 V DC,1.5 mA
Input current	min. 79 V AC, 0.08 mA				min. 79 V AC, 0.08 mA	
Outputs	4 relays	4 relays	4 transistors(PNP)	4 transistors(NPN)	none	none
Continuous current	10 A with resistive load; 2 A with inductive load	10 A with resistive load; 2 A with inductive load	0.3 A	0.3 A		
Short-circuit protection	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required
Switching frequency	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz	2 Hz	none	none
Connection cables	2 x 1.5 mm² or 1 x 2.5 mm²					
Ambient temperature	0 to + 55 °C					
Storage temperature	– 40 °C to + 70 °C					
Degree of protection	IP20					
Certification	CE					
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting					
Dimensions	(W X H X D) 48 x 90 x 64 mm					

Extensions Units(Analog) for ELC-12 CPU	ELC12-E-PT100	ELC12-E-AI(I)	ELC12-E-AQ-V	ELC12-E-AQ-I
Inputs	2 pt100 (–50 °C ... +200 °C)	4 (0/4....20mA)	No	No
Input/supply voltage	12-24V DC	12-24V DC	15-24V DC	12-24V DC
Outputs	No	No	2 (0 to 10V)	2 (0 to 20mA)
Resolution	0.25 °C	10 bit standardized to 0 – 1000	10 bit standardized to 0 – 1000	10 bit standardized to 0 – 1000
Connection cables	2 x 1.5 mm² or 1 x 2.5 mm²			
Ambient temperature	0 to + 55 °C			
Storage temperature	– 40 °C to + 70 °C			
Degree of protection	IP20			
Certification	CE			
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting			
Dimensions	(W X H X D) 48 x 90 x 64 mm			

Communication module for ELC-12 CPU	ELC12-E-RS485	ELC12-E-Ethernet-DC	ELC12-E-Ethernet-AC
Input/supply voltage	12-24V DC	12-24V DC	110-240V AC
Description	isolated 485 converter,used to bring out the terminals of RS485 port built-in ELC-12 series CPU for connection with third party devices.	Ethernet module connecting to ELC-12 CPU units. DC type.	Ethernet module connecting to ELC-12 CPU units. AC type.
Short-circuit protection	External fuse required	External fuse required	External fuse required
Connection cables	2 x 1.5 mm² or 1 x 2.5 mm²		
Ambient temperature	0 to + 55 °C		
Storage temperature	– 40 °C to + 70 °C		
Degree of protection	IP20		
Certification	CE		
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting		
Dimensions	(W X H X D) 48 x 90 x 64 mm		

Standard CPU Units(ELC-18 series)	ELC-18AC-R	ELC-18DC-D-R	ELC-18DC-DA-R	ELC-18DC-D-TN	ELC-18DC-DA-TN	ELC-18DC-D-TP	ELC-18DC-DA-TP
Inputs	12 digital	12 digital	12 digital	12 digital	12 digital	12 digital	12 digital
of which can be used in analog mode	none	none	8(0 to 10V)	none	8(0 to 10V)	none	8(0 to 10V)
Input/supply voltage	110-240V AC	12-24V DC	12-24V DC	12-24V DC	12-24V DC	12-24V DC	12-24V DC
Permissible range with signal "0"	85 ... 265 V AC	10.8 V ... 28.8 V	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC
with signal "1"	100 ... 253 V DC	DC	max. 3 V DC, 1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA
Input current	max. 40 V AC 0.03 mA	max. 3 V DC,1mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA
	min. 79 V AC, 0.08 mA	min. 8 V DC,1.5 mA					
Outputs	6 relays	6 relays	6 relays	6 transistors(PNP)	6 transistors(PNP)	6 transistors(NPN)	6 transistors(NPN)
Continuous current	10 A with resistive load;	10 A with resistive load;	10 A with resistive load;	0.3 A	0.3 A	0.3 A	0.3 A
	2 A with inductive load	2 A with inductive load	2 A with inductive load				
Short-circuit protection	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required
Switching frequency	2 Hz with resistive load;	2 Hz with resistive load;	2 Hz with resistive load;	10Hz	10Hz	10Hz	10Hz
	0.5 Hz with inductive load	0.5 Hz with inductive load	0.5 Hz with inductive load				
Cycle time	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function
Integrated time switches/power reserve	Yes / typ. 10 h	Yes / typ. 10 h	Yes / typ. 10 h	Yes / typ. 10 h	Yes / typ. 10 h	Yes / typ. 10 h	Yes / typ. 10 h
Connection cables	2 x 1.5 mm ² or 1 x 2.5 mm ²						
Ambient temperature	0 to + 55 °C						
Storage temperature	– 40 °C to + 70 °C						
Degree of protection	IP20						
Certification	CE						
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting						
Dimensions	(W X H X D) 95 x 90 x 55 mm						
Programming cable	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)
xLogic <=> xLogic communication (RS485)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
xLogic <=> network (Ethernet)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Third party device(HMI) <=> xLogic	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)
Maximum program memory	256 blocks	256 blocks	256 blocks	256 blocks	256 blocks	256 blocks	256 blocks
Data logging	No	No	No	No	No	No	No
Extensions	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High speed input	No	IB,IC(14KHZ)	IB,IC(14KHZ)	IB,IC(14KHZ)	IB,IC(14KHZ)	IB,IC(14KHZ)	IB,IC(14KHZ)
RTC	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HMI	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Economy CPU Units(ELC-18 series)	ELC-18AC-R-E	ELC-18DC-D-R-E	ELC-18DC-DA-R-E	ELC-18DC-D-TN-E	ELC-18DC-DA-TN-E	ELC-18DC-D-TP-E	ELC-18DC-DA-TP-E
Inputs	12 digital	12 digital	12 digital	12 digital	12 digital	12 digital	12 digital
of which can be used in analog mode	none	none	8(0 to 10V)	none	8(0 to 10V)	none	8(0 to 10V)
Input/supply voltage	110-240V AC	12-24V DC	12-24V DC	12-24V DC	12-24V DC	12-24V DC	12-24V DC
Permissible range	85 ... 265 V AC	10.8 V ... 28.8 V	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC
with signal "0"	100 ... 253 V DC	DC	max. 3 V DC, 1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA
with signal "1"	max. 40 V AC 0.03	max. 3 V DC,1mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA
Input current	mA min. 79 V AC, 0.08 mA	min. 8 V DC,1.5 mA					
Outputs	6 relays	6 relays	6 relays	6 transistors(PNP)	6 transistors(PNP)	6 transistors(NPN)	6 transistors(NPN)
Continuous current	10 A with resistive load; 2 A with inductive load	10 A with resistive load; 2 A with inductive load	10 A with resistive load; 2 A with inductive load	0.3 A	0.3 A	0.3 A	0.3 A
Short-circuit protection	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required
Switching frequency	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz with resistive load; 0.5 Hz with inductive load	10Hz	10Hz	10Hz	
Cycle time	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function
Integrated time switches/ power reserve	Yes / typ. 10 h	Yes / typ. 10 h	Yes / typ. 10 h	Yes / typ. 10 h	Yes / typ. 10 h	Yes / typ. 10 h	Yes / typ. 10 h
Connection cables	2 x 1.5 mm' or 1 x 2.5 mm'						
Ambient temperature	0 to + 55 °C						
Storage temperature	– 40 °C to + 70 °C						
Degree of protection	IP20						
Certification	CE						
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting						
Dimensions	(W X H X D) 95 x 90 x 55 mm						
Programming cable	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)
xLogic <=> xLogic communication (RS485)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
xLogic <=> network (Ethernet)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Third party device(HMI) <=> xLogic	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)
Maximum program memory	256 blocks	256 blocks	256 blocks	256 blocks	256 blocks	256 blocks	256 blocks
Data logging	No	No	No	No	No	No	No
Extensions	No	No	No	No	No	No	No
High speed input	No	IB,IC(14KHZ)	IB,IC(14KHZ)	IB,IC(14KHZ)	IB,IC(14KHZ)	IB,IC(14KHZ)	IB,IC(14KHZ)
RTC	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HMI	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PWM	No	No	No	No	No	No	No

Upgraded CPU Units(ELC-18 series)	ELC-18AC-R-U	ELC-18DC-D-R-U	ELC-18DC-DA-R-U	ELC-18DC-D-TN-U	ELC-18DC-DA-TN-U	ELC-18DC-D-TP-U	ELC-18DC-DA-TP-U
Inputs	12 digital	12 digital	12 digital	12 digital	12 digital	12 digital	12 digital
of which can be used in analog mode	none	none	8(0 to 10V)	none	8(0 to 10V)	none	8(0 to 10V)
Input/supply voltage	110-240V AC	12-24V DC	12-24V DC	12-24V DC	12-24V DC	12-24V DC	12-24V DC
Permissible range	85 ... 265 V AC	10.8 V ... 28.8 V	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC
with signal "0"	100 ... 253 V DC	DC	max. 3 V DC, 1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA
with signal "1"	max. 40 V AC 0.03	max. 3 V	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA
Input current	mA	DC,1mA					
	min. 79 V AC, 0.08 mA	min. 8 V DC,1.5 mA					
Outputs	6 relays	6 relays	6 relays	6 transistors(PNP)	6 transistors(PNP)	6 transistors(NPN)	6 transistors(NPN)
Continuous current	10 A with resistive load; 2 A with inductive load	10 A with resistive load; 2 A with inductive load	10 A with resistive load; 2 A with inductive load	0.3 A	0.3 A	0.3 A	0.3 A
Short-circuit protection	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required
Switching frequency	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz with resistive load; 0.5 Hz with inductive load	10Hz	10Hz	10Hz	10Hz
Cycle time	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function	< 0.1 ms/function
Integrated time switches/ power reserve	Yes / typ. 100 h	Yes / typ. 100 h	Yes / typ. 100 h	Yes / typ. 100 h	Yes / typ. 100 h	Yes / typ. 100 h	Yes / typ. 100 h
Connection cables	2 x 1.5 mm ² or 1 x 2.5 mm ²						
Ambient temperature	0 to + 55 °C						
Storage temperature	- 40 °C to + 70 °C						
Degree of protection	IP20						
Certification	CE						
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting						
Dimensions	(W X H X D) 95 x 90 x 55 mm						
Programming cable	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)	PC cable, (RS232 or USB)
xLogic <=> xLogic communication (RS485)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
xLogic <=> network (Ethernet)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Third party device(HMI) <=> xLogic	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)	Yes (modbus)
Maximum program memory	512 blocks	512 blocks	512 blocks	512 blocks	512 blocks	512 blocks	512 blocks
Data logging	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)	Yes(ELC-MEMORY)
Extensions	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High speed input	No	IB,IC(60KHZ)	IB,IC(60KHZ)	IB,IC(60KHZ)	IB,IC(60KHZ)	IB,IC(60KHZ)	IB,IC(60KHZ)
RTC	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HMI	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PWM	No	No	No	Q5,Q6(333Hz)	Q5,Q6(333Hz)	Q5,Q6(333Hz)	Q5,Q6(333Hz)

Extensions Units(10) for ELC-18 CPU	ELC-E-16AC-R	ELC-E-16DC-D-R	ELC-E-16DC-DA-R	ELC-E-16DC-D-TN	ELC-E-16DC-DA-TN
Inputs	8 digital	8 digital	8 digital	8 digital	8 digital
of which can be used in analog mode	none	none	2 (0 to 10V)	none	2 (0 to 10V)
Input/supply voltage	110-240V AC	12-24V DC	12-24V DC	12-24V DC	12-24V DC
Permissible range	85 ... 265 V AC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC	10.8 V ... 28.8 V DC
with signal "0"	100 ... 253 V DC	max. 3 V DC,1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA	max. 3 V DC, 1mA
with signal "1"	max. 40 V AC 0.03 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA	min. 8 V DC,1.5 mA
Input current	min. 79 V AC, 0.08 mA				
Outputs	8relays (Q1-Q4,3A,Q5-Q8,10A)	8 relays (Q1-Q4,3A,Q5-Q8,10A)	8relay(Q1-Q4,3A,Q5-Q8,10A)	8 transistors(NPN)	8 transistors(NPN)
Continuous current	10 A with resistive load; 2 A with inductive load	10 A with resistive load; 2 A with inductive load	10 A with resistive load; 2 A with inductive load	0.3 A	0.3 A
Short-circuit protection	External fuse required	External fuse required	External fuse required	External fuse required	External fuse required
Switching frequency	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz with resistive load; 0.5 Hz with inductive load	2 Hz	2 Hz
Connection cables	2 x 1.5 mm' or 1 x 2.5 mm'				
Ambient temperature	0 to + 55 °C				
Storage temperature	– 40 °C to + 70 °C				
Degree of protection	IP20				
Certification	CE				
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting				
Dimensions	W x H x D (72 x 90 x 53 mm)				

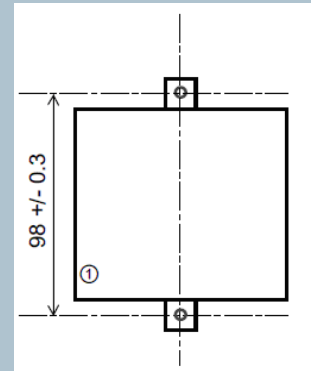
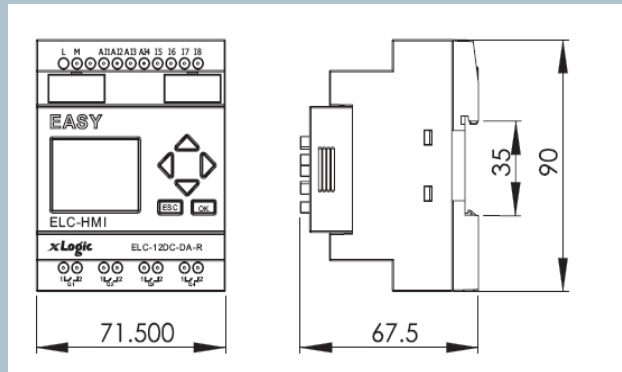
Extensions Units(Analog) for ELC-18 CPU	ELC-E-PT100	ELC-E-AI(I)	ELC-E-AQ-V
Inputs	3 pt100 (–50 °C ... +200 °C)	4 (0/4....20mA)	No
Input/supply voltage	12-24V DC	12-24V DC	15-24V DC
Outputs	No	No	2 (0 to 10V)
Resolution	0.25 °C	10 bit standardized to 0 – 1000	10 bit standardized to 0 – 1000
Connection cables	2 x 1.5 mm' or 1 x 2.5 mm'		
Ambient temperature	0 to + 55 °C		
Storage temperature	– 40 °C to + 70 °C		
Degree of protection	IP20		
Certification	CE		
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting		
Dimensions	W x H x D (72 x 90 x 53 mm)		

Communication module for ELC-18 CPU	ELC-RS485	ELC-Ethernet-DC	ELC-Ethernet-AC	ELC-SMS-D-R
Input/supply voltage	12-24V DC	12-24V DC	110-240V AC	12-24V DC
Description	isolated 485 converter,used to bring out the terminals of RS485 port built-in ELC-12 series CPU for connection with third party devices.	Ethernet module connecting to ELC-12 CPU units, DC type.	Ethernet module connecting to ELC-12 CPU units, AC type.	GSM/SMS module connecting to ELC-18 CPU units(6I/4O+ 10 message IO)
Connection cables	2 x 1.5 mm ¹ or 1 x 2.5 mm ¹			
Ambient temperature	0 to + 55 °C			
Storage temperature	– 40 °C to + 70 °C			
Degree of protection	IP20			
Certification	CE			
Mounting	On 35 mm standard mounting rail, 4 MW, or wall-mounting			
Dimensions	W x H x D (72 x 90 x 53 mm)			

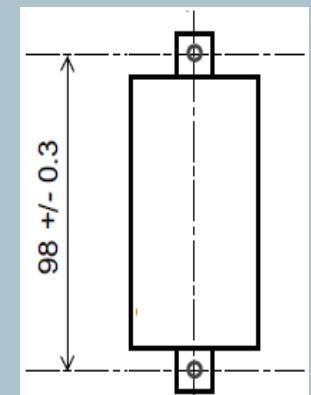
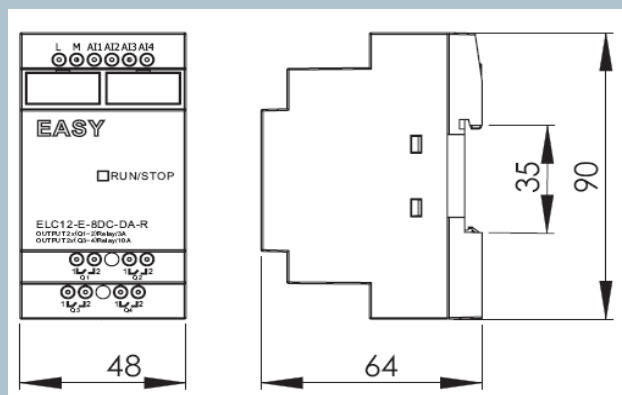
xLogic Switch Power	ELC-05AS	ELC-12AS		ELC-24AS	ELC-05AL	ELC-12AL	ELC-24AL
Output voltage	5V	12V		24V	5V	12V	24V
Output current	6A	3A		1.5A	10A	6A	3A
Dimensions (L X W X H)	71mm x 106mm x65 mm				126mm x 106mm x 65mm		
Installation	Standard 35mm DIN (EN50022-35)						
Full-range voltage input	100-240VAC/140-340VDC						
Waving voltage allowance	85-264VAC/120-370VDC						
Input frequency	47-63Hz						
Output voltage stability	≤±0.5%						
Ripple	≤150mVp-p						
Temperature	-25℃-+70℃						
Insulation and breakdown	>1.5kV						
Efficiency	>75%						

Installation Dimensions

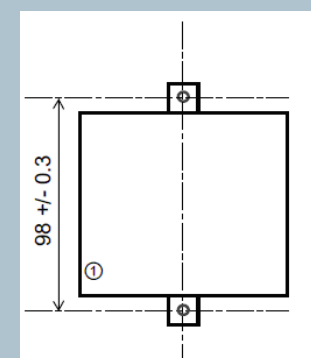
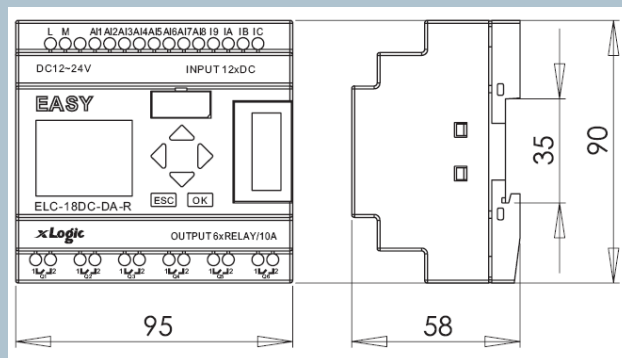
ELC-12 CPU



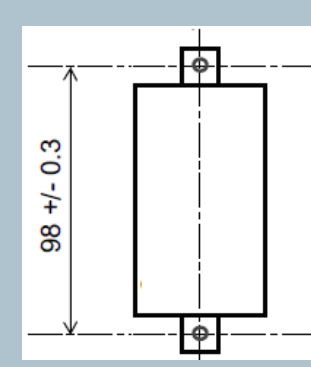
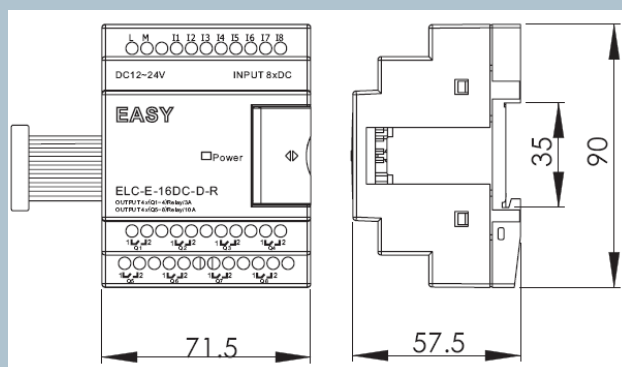
Extensions & communication module for ELC-12



ELC-18 Series CPU



Extensions & communication module for ELC-18



Model selector

xLogic model selector: ELC-12 Series

Standard ELC-12 Series CPU Units

Model	Expansion	Brief Description	Supply volt	Inputs	Outputs	High-speed count	PWM	HMI	RTC
ELC-12AC-R-CAP	YES	CPU with 13-LED-indicators COVER	AC 110~240V	8 DI	4 relays(10A)	NO	NO	optional	yes
ELC-12DC-DA-R-CAP	YES	CPU with 13-LED-indicators COVER	DC12V-DC24V	4 DI/AI(I1-I4) + 4 DI (I5-I8)	4 relays(10A)	I5,I6(14kHz),I7,I8(Max.60k Hz)	NO	optional	yes
ELC-12DC-DA-TN-CAP	YES	CPU with 13-LED-indicators COVER	DC12V-DC24V	4 DI/AI(I1-I4) + 4 DI (I5-I8)	4 transistors(PNP)	I5,I6(14kHz),I7,I8(Max.60k Hz)	2ch(Q3,Q4)	optional	yes
ELC-12DC-DA-TP-CAP	YES	CPU with 13-LED-indicators COVER	DC12V-DC24V	4 DI/AI(I1-I4) + 4 DI (I5-I8)	4 transistors(NPN)	I5,I6(14kHz),I7,I8(Max.60k Hz)	2ch(Q3,Q4)	optional	yes
ELC-12AC-R-HMI	YES	CPU with keypad panel/LCD	AC 110~240V	4 DI/AI(I1-I4) + 4 DI (I5-I8)	4 relays(10A)	NO	NO	optional	yes
ELC-12DC-DA-R-HMI	YES	CPU with keypad panel/LCD	DC12V-DC24V	4 DI/AI(I1-I4) + 4 DI (I5-I8)	4 relays(10A)	I5,I6(14kHz),I7,I8(Max.60k Hz)	NO	optional	yes
ELC-12DC-DA-TN-HMI	YES	CPU with keypad panel/LCD	DC12V-DC24V	4 DI/AI(I1-I4) + 4 DI (I5-I8)	4 transistors(PNP)	I5,I6(14kHz),I7,I8(Max.60k Hz)	2ch(Q3,Q4)	optional	yes
ELC-12DC-DA-TP-HMI	YES	CPU with keypad panel/LCD	DC12V-DC24V	4 DI/AI(I1-I4) + 4 DI (I5-I8)	4 transistors(NPN)	I5,I6(14kHz),I7,I8(Max.60k Hz)	2ch(Q3,Q4)	optional	yes

Standard ELC-12 Series Expansion Modules

Model	Supply voltage	Inputs	Outputs
ELC12-E-8AC-R	AC 110~240V	4 DI	2 Relays(3A,Q1-Q2) +2 Relays(10A,Q3-Q4)
ELC12-E-8DC-DA-R	DC12V - DC24V	4 DI / AI	2 Relays(3A,Q1-Q2) +2 Relays(10A,Q3-Q4)
ELC12-E-8DC-DA-TN	DC12V - DC24V	4 DI / AI	4 Transistors (PNP)
ELC12-E-8DC-DA-TP	DC12V - DC24V	4 DI / AI	4 Transistors (NPN)
ELC12-E-PT100	DC12V - DC24V	2 Ch PT100, 0.1°(12bits), temp range: -50℃- 200℃	none
ELC12-E-AQ-V	DC15V - DC24V	None	2 Channels (DC 0...10V), Voltage Signal
ELC12-E-AQ-I	DC15V - DC24V	None	2 Channels (0...20mA) , Current Signal
ELC12-E-AI(I)	DC12V - DC24V	4 Channels (0/4.....20 mA), Current Signal	none
ELC12-E-RS485	DC12V - DC24V	isolated 485 converter	
ELC12-ETHERNET-AC	AC 110-240V	Ethernet module,	
ELC12-ETHERNET-DC	DC12V - DC24V	Ethernet module	

Economy ELC-12 Series CPU Units

Model	Expansion	Brief Description	Supply volt	Inputs	Outputs	High-speed count	PWM	HMI	RTC
ELC-12AC-R-E-CAP	NO	CPU with 13-LED-indicators COVER	AC 110~240V	8 DI	4 relays(10A)	NO	NO	NO	yes
ELC-12DC-D-R-E-CAP	NO	CPU with 13-LED-indicators COVER	DC12V-DC24V	8 DI	4 relays(10A)	NO	NO	NO	yes
ELC-12DC-D-TN-E-CAP	NO	CPU with 13-LED-indicators COVER	DC12V-DC24V	8 DI	4 transistors(PNP)	NO	NO	NO	yes
ELC-12DC-D-TP-E-CAP	NO	CPU with 13-LED-indicators COVER	DC12V-DC24V	8 DI	4 transistors(NPN)	NO	NO	NO	yes

ELC-6 Series CPU Units

Model	Expansion	Supply volt	Inputs	Outputs	High-speed count	PWM	HMI	RTC
ELC-6AC-R	NO	AC 110~240V	4 DI	2 relays(10A)	NO	NO	NO	yes
ELC-6DC-D-R	NO	DC12V-DC24V	4 DI(I1-I4)	2 relays(10A)	NO	NO	NO	yes
ELC-6DC-D-TN	NO	DC12V-DC24V	4 DI (I1-I4)	2 transistors(PNP)	NO	NO	NO	yes

Accessories

ELC-HMI	Displaying and program-making keypad panel for ELC-12 series CPU , optional,
ELC-COVER-CABLE	Connection cable between ELC-12 CPU and ELC12-HMI-FP (Faceplate) for long-distance application purpose, one and half meters standard length
ELC-HMI-FP	Faceplate (ELC12-HMI's installation unit), making it possible for ELC12-HMI to be externally installed in the front door while ELC-12 CPU is required to be installed inside.
ELC-CB-B	connection cable between ELC-12 CPU & Extension module, it can be used to remotely connect ELC-12 CPU to its extension units, 3-meter standard length (customizable)
ELC-COVER	CPU'S cover with 13 LED indicators indicating IO status, if LCD not required, Optional
ELC-COPIER	ELC-COPIER can be used to save user program and download program into xLogics.(For ELC-12&ELC-18 series CPU)
ELC-MEMORY	ELC-MEMORY is a data logging device with a mini-SD card for ELC-12 CPUs, specific production or process data(such as I/O status , analog values, register values etc)can be saved in SD card of ELC-Memory to either read it with a PC or evaluate it from the SD card at the workstation. It's good for data analysis. SD card capacity up to 2 GB(expandable)

xLogic model selector: ELC-18 Series								
Standard ELC-18 CPU UNITS								
Model	Expansion	Supply voltage	Inputs	Outputs	High-speed count	PWM	HMI	RTC
ELC-18AC-R	available	AC 110~240V	12 digital	6 relays(10A)	None	no	yes	yes
ELC-18DC-D-R	available	DC12V-DC24V	12 digital	6 relays(10A)	2 routes(14KHZ)	no	yes	yes
ELC-18DC-D-TN	available	DC12V-DC24V	12 digital	6 transistors(PNP)	2 routes(14KHZ)	2 ch	yes	yes
ELC-18DC-D-TP	available	DC12V-DC24V	12 digital	6 transistors(NPN)	2 routes(14KHZ)	2ch	yes	yes
ELC-18DC-DA-R	available	DC12V-DC24V	8 digital/analog+ 4 digital	6 relays(10A)	2 routes(14KHZ)	no	yes	yes
ELC-18DC-DA-TN	available	DC12V-DC24V	8 digital/analog+ 4 digital	6 transistors(PNP)	2 routes(14KHZ)	2 ch	yes	yes
ELC-18DC-DA-TP	available	DC12V-DC24V	8 digital/analog+ 4 digital	6 transistor(NPN)	2 routes(14KHZ)	2 ch	yes	yes
Economic ELC-18 CPU UNITS								
ELC-18AC-R-E	without	AC 110~240V	12 digital	6 relays(10A)	NONE	no	yes	yes
ELC-18DC-D-R-E	without	DC12V-DC24V	12 digital	6 relays(10A)	NONE	no	yes	yes
ELC-18DC-D-TN-E	without	DC12V-DC24V	12 digital	6 transistors(PNP)	NONE	no	yes	yes
ELC-18DC-D-TP-E	without	DC12V-DC24V	12 digital	6 transistors(NPN)	NONE	no	yes	yes
ELC-18DC-DA-R-E	without	DC12V-DC24V	8 digital/analog+ 4 digital	6 relays(10A)	NONE	no	yes	yes
ELC-18DC-DA-TN-E	without	DC12V-DC24V	8 digital/analog+ 4 digital	6 transistors(PNP)	NONE	no	yes	yes
ELC-18DC-DA-TP-E	without	DC12V-DC24V	8 digital/analog+ 4 digital	6 transistor(NPN)	NONE	no	yes	yes
Upgraded ELC-18 CPU UNITS								
ELC-18AC-R-U	available	AC 110~240V	12 digital	6 relays(10A)	None	no	yes	yes
ELC-18DC-D-R-U	available	DC12V-DC24V	12 digital	6 relays(10A)	2 routes(60KHZ)	no	yes	yes
ELC-18DC-D-TN-U	available	DC12V-DC24V	12 digital	6 transistors(PNP)	2 routes(60KHZ)	2 ch	yes	yes
ELC-18DC-D-TP-U	available	DC12V-DC24V	12 digital	6 transistors(NPN)	2 routes(60KHZ)	2ch	yes	yes
ELC-18DC-DA-R-U	available	DC12V-DC24V	8 digital/analog+ 4 digital	6 relays(10A)	2 routes(60KHZ)	no	yes	yes
ELC-18DC-DA-TN-U	available	DC12V-DC24V	8 digital/analog+ 4 digital	6 transistors(PNP)	2 routes(60KHZ)	2 ch	yes	yes
ELC-18DC-DA-TP-U	available	DC12V-DC24V	8 digital/analog+ 4 digital	6 transistor(NPN)	2 routes(60KHZ)	2 ch	yes	yes
EXPANSION								
ELC-E-16AC-R		AC 110~240V	8 digital	4 relays(10A)+ 4relays(3A)	no	no		
ELC-E-AI (I)		DC12V-DC24V	4 points current signal input (0/4-20mA)					
ELC-E-PT100	3 routes Pt100	DC12V-DC24V	temperature range : -50°- 200°	resolution: 1°(10bits)				
ELC-E-PT100	3 routes Pt100	DC12V-DC24V	temperature range : -50°- 200°	resolution: 0.1°(12bits)				
ELC-E-AQ-V		DC15v-DC24v	0-10V signal	2 routes analog outputs				
ELC-E-16DC-D-R		DC12V-DC24V	8 digital	4 relays(10A)+ 4relays(3A)				
ELC-E-16DC-D-TN		DC12V-DC24V	8 digital	8 transistors(PNP)				
ELC-E-16DC-D-TP		DC12V-DC24V	8 digital	8 transistors(NPN)				
ELC-E-16DC-DA-R		DC12V-DC24V	8 digital/ 2 analog	4 relays(10A)+ 4relays(3A)				
ELC-E-16DC-DA-TN		DC12V-DC24V	8 digital/2 analog	8 transistors(PNP)				
ELC-E-16DC-DA-TP		DC12V-DC24V	8 digital/2 analog	8 transistors(NPN)				
ACCESSORIES								
ELC-MD204L		Programmable display, 3.7 inch , 192*64 pixels, support RS485 communication, STN LCD with background lights, 20 keys						
ELC-COPIER		ELC-COPIER allows transfer of the program and parameters, secured back up and local storage.						
ELC-RS485		isolated 485 converter						
ELC-RS232		RS232 communication module between PC and ELC units						
ELC-USB		USB communication module PC and ELC units						
ELC-Ethernet-AC		Ethernet module,AC 110-240V						
ELC-Ethernet-DC		Ethernet module, DC 24V						
ELC-05AS		switching power supply module, voltage:5 V, Current: 6A, Gamut voltage: 100-240VAC/140-340VDC						
ELC-12AS		switching power supply module, voltage:12 V, Current: 3A, Gamut voltage: 100-240VAC/140-340VDC						
ELC-24AS		switching power supply module, voltage:24 V, Current: 1.5A, Gamut voltage: 100-240VAC/140-340VDC						
ELC-05AL		switching power supply module, voltage:5 V, Current: 10A, Gamut voltage: 100-240VAC/140-340VDC						
ELC-12AL		switching power supply module, voltage:12 V, Current: 6A, Gamut voltage: 100-240VAC/140-340VDC						
ELC-24AL		switching power supply module, voltage:24 V, Current: 3A, Gamut voltage: 100-240VAC/140-						