Programmable logic relays

- *10, 12 and 20 Input-Output base units*
- *Expansion modules with 4 Inputs and 4 Outputs*
- *Maximum configuration: 44 Inputs/Outputs*
- *RS232 serial interface port for PC or program backup memory connection*
- *On-board programming languages: Italian, English, Spanish, French, German, Portuguese and Chinese*
- *PC programming languages: Italian, English and Spanish.*

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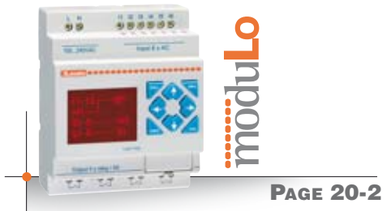

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RELAYS
- 10 Inputs/Outputs (LRD1D...)
  12 Inputs/Outputs (LRD12...)
  10 Inputs/Outputs (LRD20...)
- 24VDC, 24VAC or 100-240VAC power supply
- Relay or transistor outputs.

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EXPANSION AND COMMUNICATION MODULES
- 8 Inputs/Outputs
- 24VDC, 24VAC or 100-240VAC
- Relay or transistor outputs
- Modbus® protocol communication unit.

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ACCESSORIES
- Program backup memory
- Programming and supervision software
- Power supply unit.

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STARTER KITS
- Complete kit to begin using the programmable relays
- Each equipped with LRD relay, programming-supervision software and connecting cable.

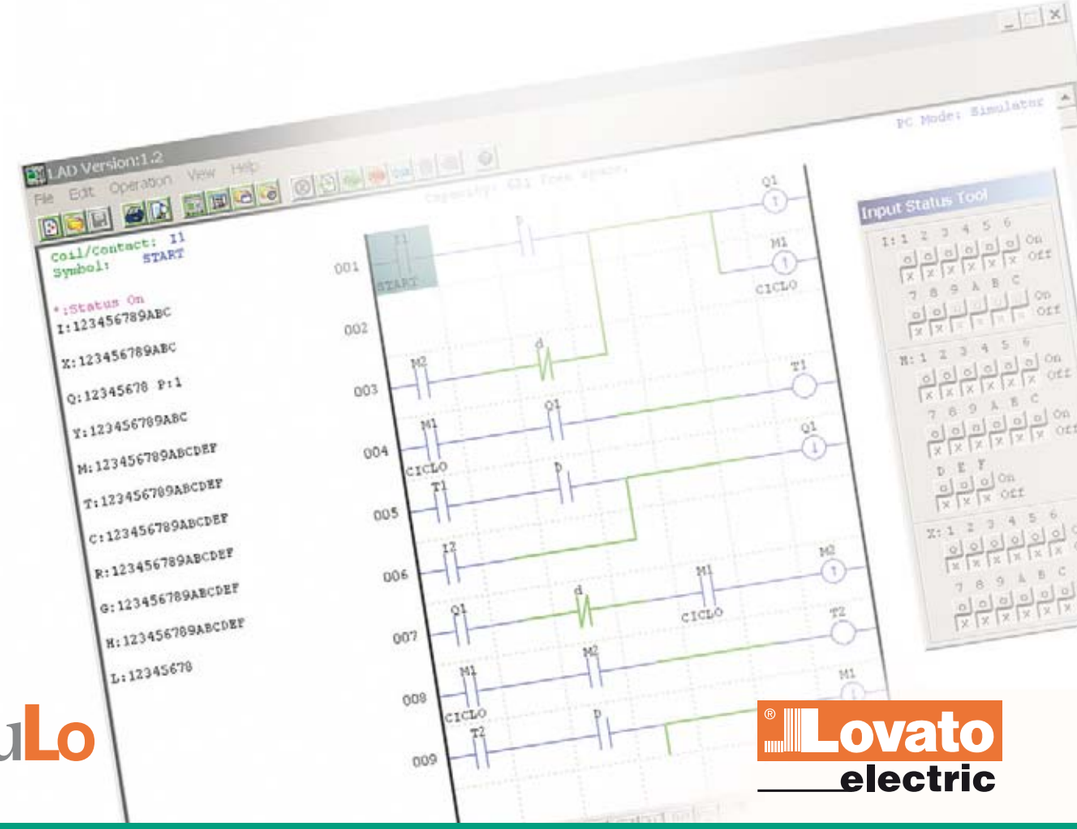
LOGIC FUNCTIONS
10 different operating modes:
- AND - Consent simultaneity (series connection of contact)
- AND ⇧ - Consent simultaneity with edge evaluation
- NAND - No simultaneity (parallel connection of contact)
- NAND ⇩ - Simultaneity loss with edge evaluation
- OR - At least one consent (parallel connection of contact)
- NOR - No consents (series connection of contact)
- XOR - 2 signals of diverse state (dual changeover contact)
- NOT - State inverter
- Pulse - Pulse output
- SR - Two distinct signals for permanent enable and disable.

TIMERS (15 maximum)
7 different operating modes:
- ON delay - standard
- ON delay - sum of time at enable and reset signals
- OFF delay - output enable on up time, off on down time
- OFF delay - output enable and off on down input
- Recycle - input signal always enabled (equal timing)
- Recycle - output enable on input and enable resets up time (equal timing)
- Recycle - on-off intervals with independent timing.

RTC - REAL TIME CLOCK (15 maximum)
3 different operating modes:
- Daily - choice of days of the week (from ... to) and daily hours (from ... to)
- Weekly - choice of week day and hours to begin and end of week day
- Yearly - choice of date to begin and end.

COUNTERS (15 maximum)
8 different operating modes (up and down):
- Without over-counting and no retain at power loss
- With over-counting function and no retain at power loss
- Without over-counting and retain function at power loss
- With over-counting and retain function at power loss
- With over-counting and no retain at power loss and reset to 0
- With over-counting and retain function at power loss and reset to 0
- High speed counter
- Frequency comparison.

ANALOG COMPARATORS (15 maximum)
5 different operating modes:
- Comparators for analog inputs
- Comparators for analog inputs and constants



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Lovato electric

Programmable logic relays

LRD10...
LRD12...

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LRD20...

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LRE08...

Order code	Auxiliary supply voltage	In/Out❶	Qty per pkg	Wt.
			n°	[kg]
Base relay unit.				
LRD12R D024	24VDC	8/4 relay	1	0.174
LRD12T D024	24VDC	8/4 transistor	1	0.174
LRD20R D024	24VDC	12/8 relay	1	0.252
LRD20T D024	24VDC	12/8 transistor	1	0.252
LRD12R A024	24VAC	8/4 relay	1	0.193
LRD20R A024	24VAC	12/8 relay	1	0.252
LRD10R A240	100-240VAC	6/4 relay	1	0.193
LRD20R A240	100-240VAC	12/8 relay	1	0.252
Expansion and communication modules❷.				
LRE08R D024	24VDC	4/4 relay	1	0.125
LRE08T D024	24VDC	4/4 transistor	1	0.125
LRE08R A024	24VAC	4/4 relay	1	0.125
LRE08R A240	100-240VAC	4/4 relay	1	0.125
LRE P00	Modbus® protocol communication unit		1	0.090

❶ Inputs/Outputs.
❷ The expansion modules are supplied with connector for base relay module.

Kinco can be easily adapted to every type of need. The number of inputs and outputs of the base relay unit can be directly increased by using the expansion modules.
Supplied in three base units with 10, 12 or 20 inputs/outputs, Kinco can be expanded, mounting up to 3 expansion modules, to obtain a maximum configuration of 44 inputs/outputs.
Expansion modules with 4 inputs and 4 outputs are available with 24VDC relay output, 24VDC transistor output and 24VAC or 100-240VAC relay output version.

LRD10...
LRD12...

LRD20...

LRE08...

Kinco	Expansions	Inputs/Outputs
LRD10...	—	10 (6 In + 4 Out)
	+ 1 LRE08	18 (10 In + 8 Out)
	+ 2 LRE08	26 (14 In + 12 Out)
	+ 3 LRE08	34 (18 In + 16 Out)
LRD12...	—	12 (8 In + 4 Out)
	+ 1 LRE08	20 (12 In + 8 Out)
	+ 2 LRE08	28 (16 In + 12 Out)
	+ 3 LRE08	36 (20 In + 16 Out)
LRD20...	—	20 (12 In + 8 Out)
	+ 1 LRE08	28 (16 In + 12 Out)
	+ 2 LRE08	36 (20 In + 16 Out)
	+ 3 LRE08	44 (24 In + 20 Out)

Type	INPUT		OUTPUT	
	Digital	Digital/ analog (0...10VDC)❸	Digital	
	n°	n°	Type	n°
LRD12R D024	6	2	Relay	4
LRD12T D024	6	2	Trans.	4
LRD20R D024	8	4	Relay	8
LRD20T D024	8	4	Trans.	8
LRD12R A024	8	0	Relay	4
LRD20R A024	12	0	Relay	8
LRD10R A240	6	0	Relay	4
LRD20R A240	12	0	Relay	8
LRE08R D024	4	0	Relay	4
LRE08T D024	4	0	Trans.	4
LRE08R A024	4	0	Relay	4
LRE08R A240	4	0	Relay	4

❸ Digital inputs can be used as analog inputs.

General characteristics
- 10, 12 and 20 input-output base units
- Expansion models with 4 inputs and 4 outputs
- Maximum configuration: 44 inputs/outputs
- Standard-supplied Real Time Clock (RTC)
- RS232 serial interface port for PC or program backup memory connection
- 4-line 12-character display with backlight
- Programming language logics: Ladder (200 lines maximum) or FBD (99 blocks maximum)
- On-board programming languages: Italian, English, Spanish, French, German, Portuguese and Chinese
- PC programming languages: Italian, English and Spanish

Operational characteristics
- 8A Ith current relay outputs for AC and DC versions
- 0.3A 24VDC transistor outputs for DC version
- 0-10V analog inputs for DC version
- Sampling time: 5-20ms (LADDER)
  2-10ms (FDB)
- Version: modular for mounting on 35mm DIN rail (IEC/EN 60715) or M4x15mm screw fixing
- Type of terminal: Screw
- Degree of protection: IP20.

Certfication and compliance
Certifications obtained: cULus.
Compliant with standards: IEC/EN 61131-2.

Accessories

LRX 1V3 D024

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LRX C00

new

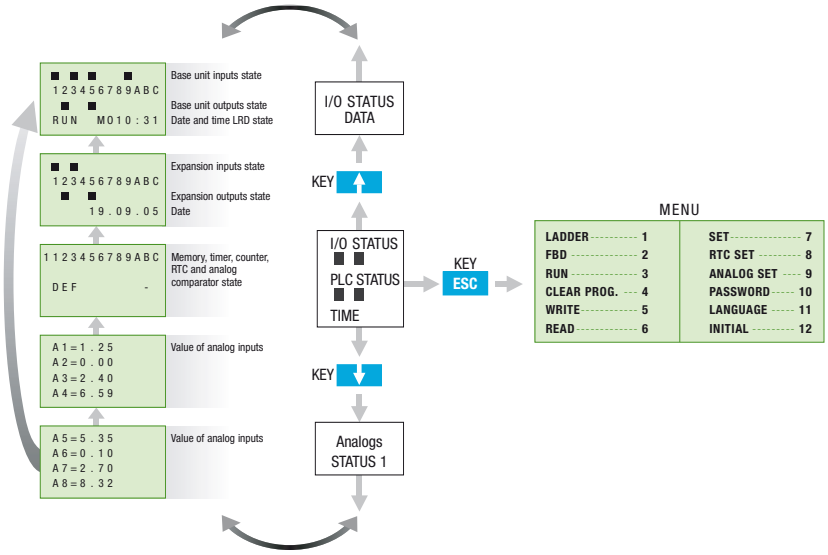
Order code	Description	Qty per pkg	Wt.
		n°	[kg]
Accessories.			
LRX M00	Program backup memory	1	0.002
LRX C00	PC-LRD connecting cable, 1.5m long	1	0.060
LRX SW	Programming and supervision software (CD-ROM)	1	0.004
LRX 1V3 D024	Power supply unit, 100-240VAC/24VDC, 1.3A	1	0.188
LRX D00	User's manual Italian edition (paper)	1	0.397
LRX D01	User's manual English edition (paper)	1	0.397
LRX D02	User's manual Spanish edition (paper)	1	0.397
LRX D03	User's manual French edition (paper)	1	0.397

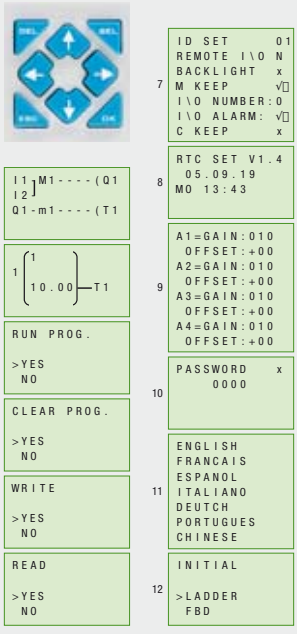
General characteristics

- The LRX 1V3 D024 power supply produces a direct-current voltage to power the Kinco base and expansion modules in circumstances when 24VDC is not available in the application. The power supply can also be used to power eventual 24VDC auxiliary circuits.
- The LRX M00 backup memory consents to save the user's program and to simply and quickly transfer it to other Kinco base modules.
- The LRE P00 expansion implements communications using Modbus® protocol.

Programming

At any time and with extreme simplicity, Kinco can be set up and reprogrammed to satisfy new requirements and improve the operation of a system.
Programming is simple and intuitive and can be done directly on the relay keypad or by personal computer, connected by LRX C00 interface and using the relative LRX SW software.
Programming Kinco with the keypad is quite simple and straight forward, without particular programming knowledge. There are 8 function keys on the relay front, dedicated to on-board adjustment, control and supervision of digital input and output status, analog input values, time and date entry and the operation status of the relay itself.
Programming sequences are shown on a backlit 4-line 12-character display.
When using a Personal Computer (PC), two common language logics are available for programming: Function Block Diagram (FBD) and LADDER (contact scheme).
Using the Simulator option, the user can control the exactness of the implemented program in off-line simulation, directly on the PC, before the ON-LINE testing and the system setup.





Starter kits

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Starter kits.

LRDKIT 12R D024	LRD starter kit complete with LRD12R D024 relay, LRX SW software and LRX C00 cable	1	0.344
LRDKIT 12R A024	LRD starter kit complete with LRD12R A024 relay, LRX SW software and LRX C00 cable	1	0.257
LRDKIT 10R A240	LRD starter kit complete with LRD10R A240 relay, LRX SW software and LRX C00 cable	1	0.344

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