LOGO!
Simply different – simply ingenious

micro automation

LOGO!

SIEMENS

Switching and controlling – the profitable way

Profitable companies have vision – they maintain their competitive edge by using new technologies that are always a step ahead of their time. There is constant pressure to save time and money at every stage of the process, from planning and commissioning through to operation. And the applications must offer the critical added extra in terms of options, convenience and technical refinement at all times. Switching and controlling play a central part in this process – they must be both simple and intelligent; simple in operation and intelligent in implementing the many options that are expected of an application with vision.

Transport facilities

- Conveyor systems
- Hoisting platforms
- Elevators
- Silo works
- Automatic dry feeders

House and building services management

- Lighting control (outside and inside lighting)
- Door/gate control
- Shutter, sun blind and awning control
- Watering and sprinkler system control

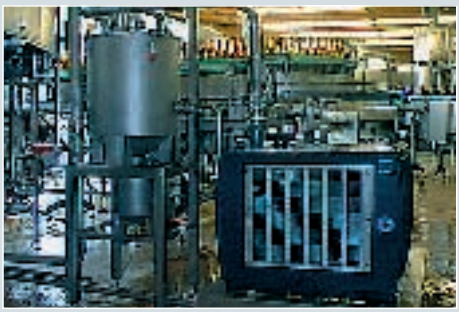
Special solutions

- Solar-electric systems
- Use on ships
- Use under extreme environmental conditions
- Display panels and traffic control signs

LOGO! – millions of applications

Heating/ventilation/ air conditioning

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



Machine controls

- Motor, pump and valve controls
- Air compressors
- Exhaust and filtering systems
- Water-treatment plants
- Sawing machines and planing machines
- Etching and purification plants

Operational monitoring systems

- Access control
- Vehicle control monitoring
- Alarm systems
- Limit-value monitoring
- Traffic light control systems
- Baggage control

LOGO! – simply more

LOGO! is already successfully used in millions of applications, offering a user-friendly interface and maximum ease of operation, combined with its typical quality features. For years LOGO! has been successfully performing simple automation tasks in trade and industry. The high storage capacity and efficient use of memory create a host of benefits and excellent functionality. Operation could not be easier, thanks to the LOGO! Soft Comfort software. Program generation, project simulation and documentation are all performed by means of drag & drop techniques for an unparalleled level of convenience. The practical use of LOGO! leaves nothing to be desired – a backlit display, optimum use of display lines and options for directly modifying message texts guarantee professional operation and satisfied users.

LOGO! is modular and flexible. With the expansion modules you can expand any LOGO! to 24 digital inputs, 16 digital outputs and 8 analog inputs at any time. Apart from the digital modules and analog modules, there are also communications modules for AS-I and *instabus EIB*.

The LOGO! hardware

LOGO! offers the widest range of applications and successful implementation of extensive applications with the option of selecting 34 integrated functions and linking them with up to 130 blocks. Operator control and monitoring is made extremely user-friendly by means of a backlit display with four lines of 12 characters, the display of setpoint and actual values in one line and the option of changing actual values and parameters directly at the device level. Flexibility guaranteed by the permanent and versatile expansion options of LOGO!

LOGO! – simply more.

LOGO! reduces costs by up to 50%

- Replaces many conventional switching devices
- Requires less space in the control cabinet
- Fewer accessories
- Less warehouse space
- Saves on service because it is wear-free

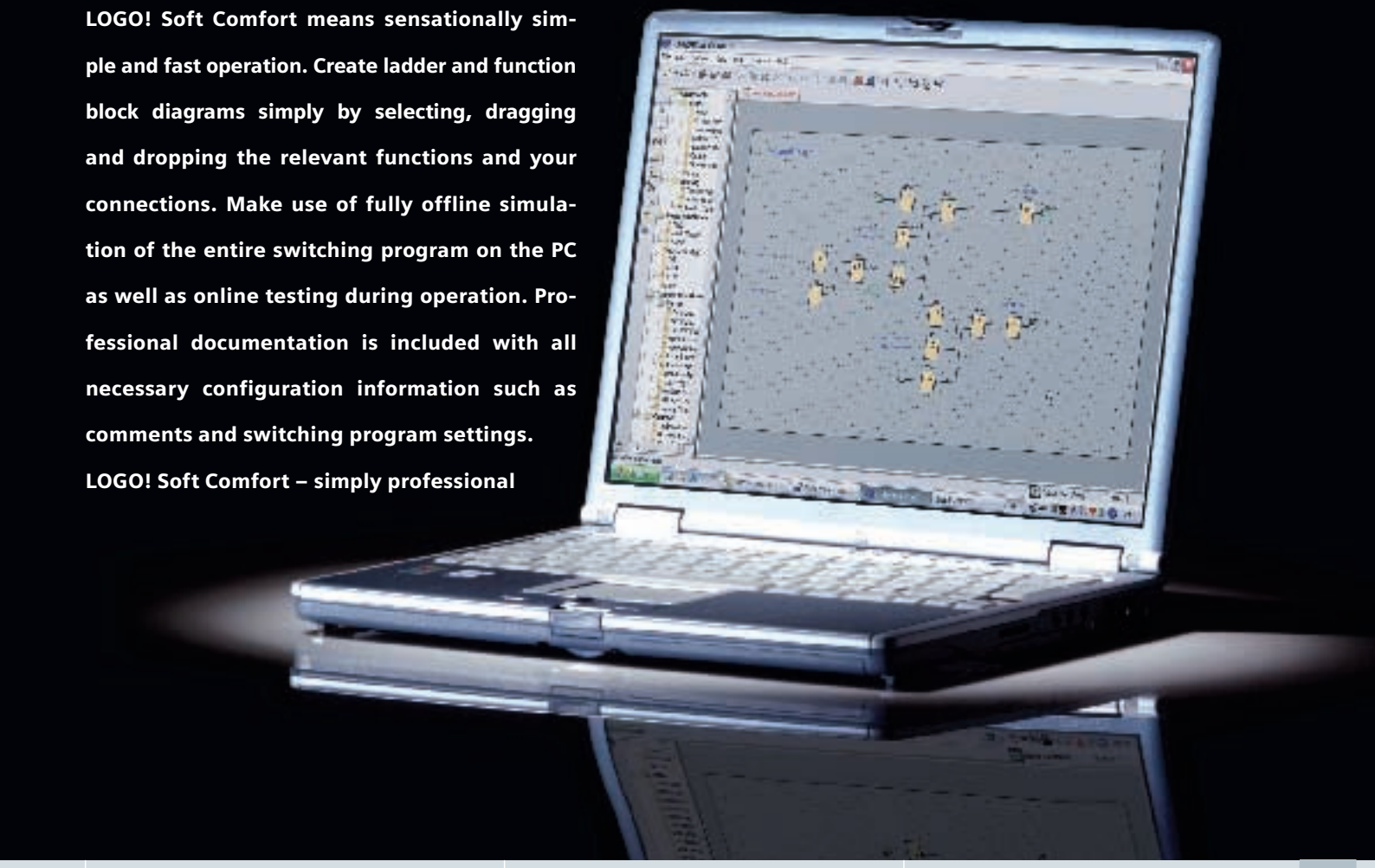
LOGO! reduces time requirements by up to 70%

- Snaps right onto the DIN rail
- Requires almost no wiring
- Can be programmed at the push of a button
- Pre tested sample programs can be used at no charge or generated on the PC, tested, and transferred quickly and without error
- User-friendly configuring
- Automatic summer/winter time change
- Documentation

The LOGO! software

LOGO! Soft Comfort means sensationally simple and fast operation. Create ladder and function block diagrams simply by selecting, dragging and dropping the relevant functions and your connections. Make use of fully offline simulation of the entire switching program on the PC as well as online testing during operation. Professional documentation is included with all necessary configuration information such as comments and switching program settings.

LOGO! Soft Comfort – simply professional



LOGO! reduces space requirements by up to 70%

- Four width modules suffice to replace a wide variety of relays, time switches and contactor relays
- 8 basic and 26 special functions replace many conventional switching devices
- Saves space on accessories and mounting fixtures

Universal application

- Vibration-resistant
- High level of electromagnetic compatibility (EMC)
- Industrial standard
- For all climatic conditions
- Radio interference suppression class B
- All necessary certifications for use anywhere in the world

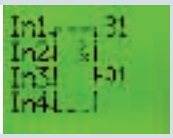
The LOGO! functions

With the eight basic functions you can create simple switching programs quickly either at the device or on the PC.

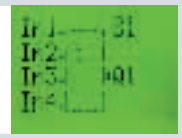
With the 26 special functions you can also create complex switching programs quickly and easily. An extensive selection of sample applications can be found at www.siemens.com/logo

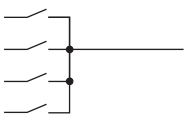
The eight basic functions

AND
Series connection
NO contact

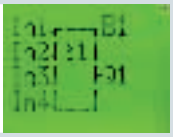


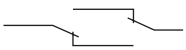
NOR (or not)
Series connection
NC contact



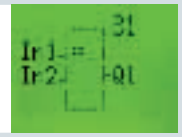


OR
Parallel connection
NO contact

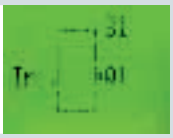


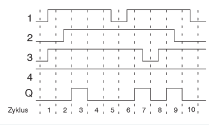


XOR (Exclusive OR)
Dual changeover
contact

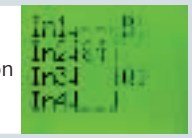


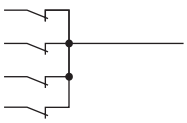
NOT
Inverter



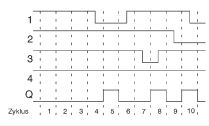


AND
with edge evaluation
(pos. edge)

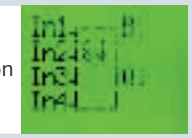




NAND (and not)
Parallel connection
NC contact

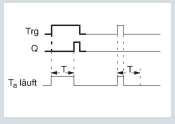


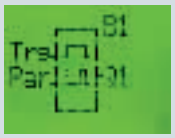
NAND
with edge evaluation
(neg. edge)



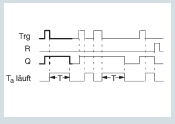
The 26 special functions

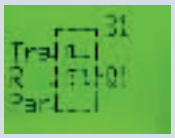
ON delay



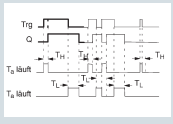


OFF delay

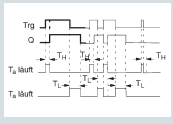


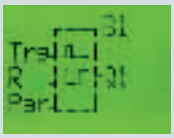


ON/OFF delay

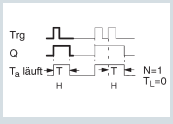


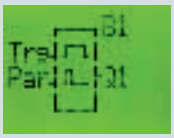
Retentive
ON delay



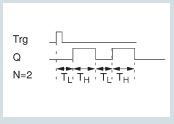


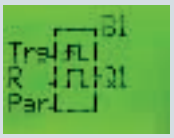
Impulse relay/
pulse output





Impulse relay/
edge triggered





LOGO! and its modules

LOGO! Basic

LOGO! Pure

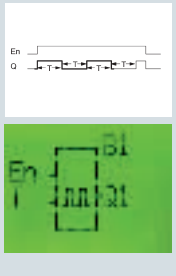
Digital expansion modules

- Different voltages, i.e. 12 V DC, 24 V AC/DC, 115/240 V AC/DC
  – Can be used for a wide range of applications
- Automatic changeover from daylight saving time to winter time
  – Reduces maintenance overhead
- Password protection
  – Protects your know-how
- 34 integrated, pre-tested functions
  – No additional devices, such as elapsed time counter, are required
- Linking of 130 functions is possible
  – extensive applications can be implemented without restrictions
- Eight digital inputs (incl. two AIs at 12/24 V DC) and four digital outputs on board
- Display of message texts, setpoint and actual values as well as direct modification of the values on the display (except for Pure versions)
  – Makes separate display unnecessary
- Integrated data latch
  – Protects current values against loss in the event of a power failure
- Flexibly expandable up to 24 DIs, 16 DOs and 8 AOs
  – Protects original investment
  – Suitable for a wide variety of applications
- Software LOGO!Soft Comfort V4 for user-friendly generation of control programs on PC; suitable for a variety of operating systems, such as WIN95/98, NT 4.0, ME, 2000 or XP, MAC OS X 10.2 with J2SE 1.4.1 and Linux with J2SE 1.4.1.

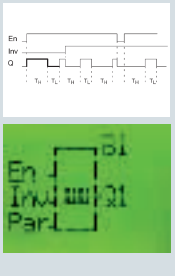
There are four versions for expanding the digital inputs and outputs:

- **DM8 230R**
  – Supply voltage 115/240 V AC/DC
  – Four 120/230 V AC/DC digital inputs
  – Four digital output relays, 5 A per relay
- **DM8 24**
  – Supply voltage 24 V DC
  – Four 24 V DC digital inputs
  – Four digital output transistors, 0.3 A
- **DM8 12/24R**
  – Supply voltage 12/24 V DC
  – Four 12/24 V digital inputs
  – Four digital output relays, 5 A per relay
- **DM8 24R**
  – Supply voltage 24 V AC/DC
  – Four 24 V AC/DC digital inputs, PNP or NPN
  – Four digital output relays, 5 A per relay

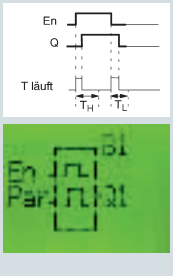
Clock-pulse generator



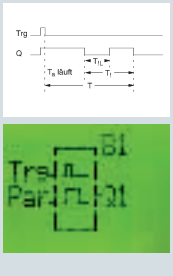
Pulse generator



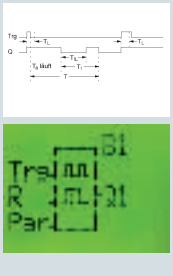
Random-check generator



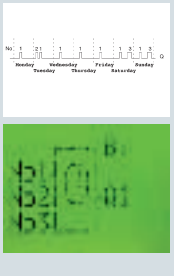
Stairlight switch



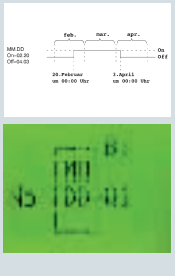
Convenience switch



One-week time switch



12-month time switch



The software

Simple – quick – professional

The LOGO! Soft Comfort software does it all – generating and testing control programs, simulating all functions and of course documentation is sensationally easy with LOGO! Soft Comfort using drag & drop on your PC. This is how it is done:

Analog expansion modules

There are two versions for expanding the analog inputs:

- **AM2**
  - Supply voltage 12/24 V DC
  - Two channels
  - 0 to 10 V or 0 to 20 mA typ.
- **AM2 PT100**
  - Supply voltage 12/24 V DC
  - Two channels
  - Type PT100
  - Measuring range –50 °C to +200 °C

Communications modules

Customized modules are also available for communication:

- CM EIB/KNX (*instabus EIB*)
  - Supply voltage 24 V AC/DC
  - max. 16 DIs, 12 DOs, 8 AIs as interface to *instabus EIB*
- CM AS-Interface slave
  - Supply voltage 12/24 V DC
  - 4 DIs/4 DOs as interface to AS-Interface master

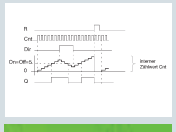
Creating control programs

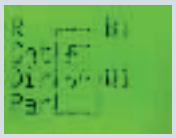
- Select function and position on the drawing surface
- Link selected functions by means of connecting lines
- Set function parameters using clear dialog window

Commissioning with LOGO!

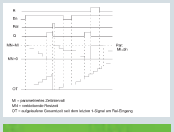
- Simulation of the entire switching process using all functions on the PC

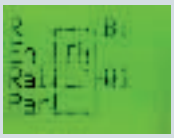
Up and down counter



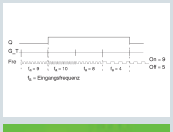


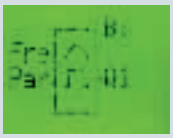
Operating hours counter



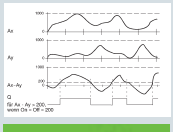


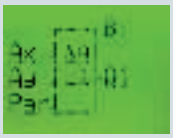
Threshold value switch



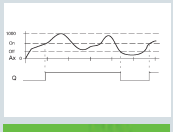


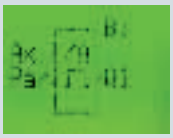
Analog comparator



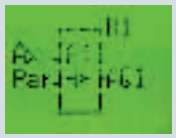


Analog threshold value switch

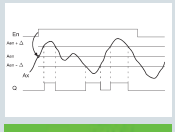


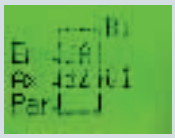


Analog amplifier



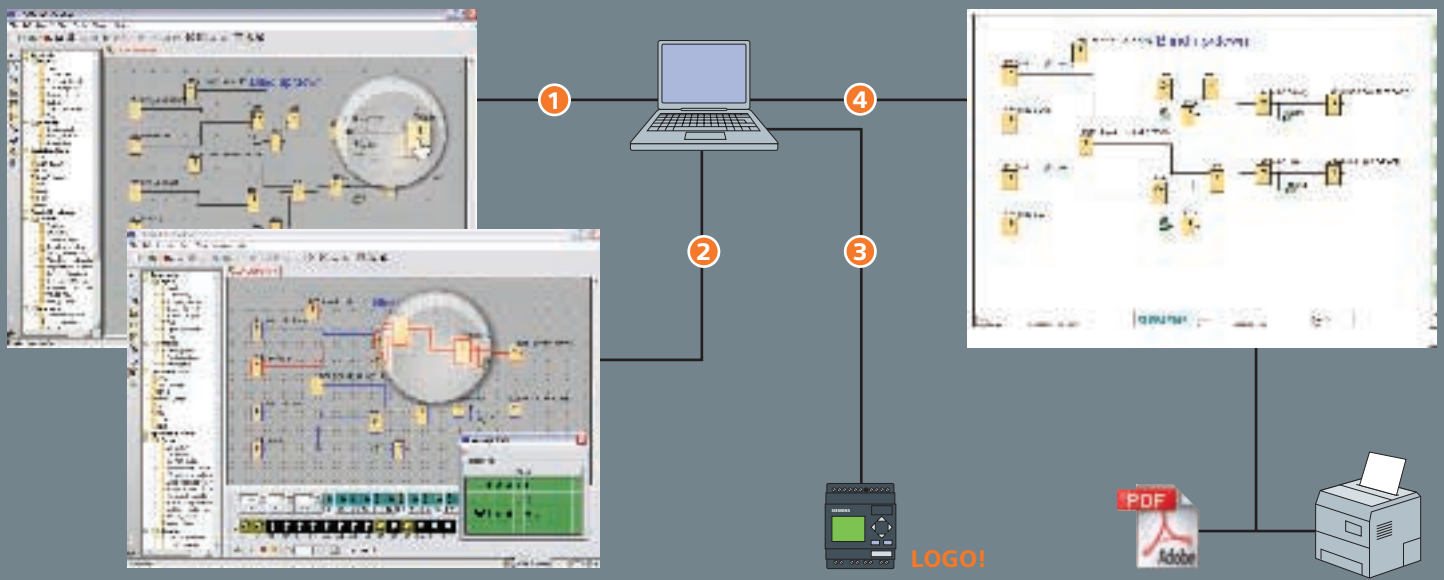
Analog monitoring





LOGO! Soft Comfort

1 Creating 2 Simulating 3 Online-testing 4 Documenting

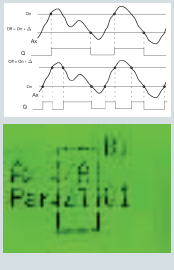


- Analog signals can be simulated with real values (e. g. temperature –20 °C to +80 °C)
- Time controlled / cyclic simulation
- Simulation of clock time
- Faithful representation of the LOGO! display in the simulation
- Status display of all functions, parameters and current values
- Online test with display of statuses and current values of LOGO! in RUN mode

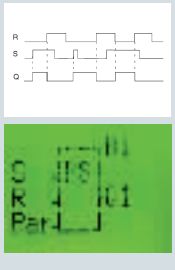
The documentation

- Each function can be provided with additional comments
- Additional assignment of names possible for inputs and outputs
- Any positioning and formatting of free text
- Clear representation of control program across several pages
- Professional printout with all necessary configuration information
- Separate printout of parameters and interface names possible
- Integration into standard Windows applications by storing as .pdf or .jpg file

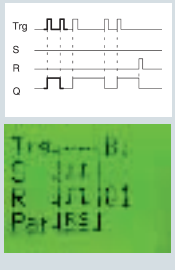
Analog differential threshold switch



Latching relay

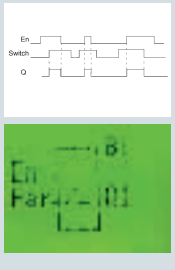


Current inrush relay

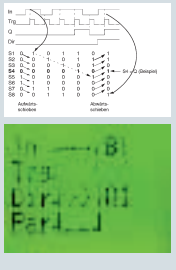


Message text

Software switch



Shift register



LOGO! modular – the technical details

Technical specifications Basic units	LOGO! 12/24RC LOGO! 12/24RCo	LOGO! 24 LOGO! 24o	LOGO! 24RC LOGO! 24RCo	LOGO! 230RC LOGO! 230RCo
Inputs, of these, usable as analog inputs	8 2 (0 to 10 V)	8 2 (0 to 10 V)	8 –	8 –
Input/ supply voltage	12/24 V DC	24 V DC	24 V AC/DC	115/240 V AC/DC
Permissible range On "0" signal On "1" signal Input current	10.8 V DC to 28.8 V DC Max. 5 V DC Min. 8 V DC 1.5 mA (I1 to I6) 0.1 mA (I7 to I8)	20.4 V DC to 28.8 V DC Max. 5 V DC Min. 8 V DC 1.5 mA (I1 to I6) 0.1 mA (I7 to I8)	20.4 to 28.8 V DC 20.4 to 26.4 V AC Max. 5 V DC Min. 12 V DC 2.5 mA	85 ... 253 V AC 100 ... 253 V DC Max. 40 V AC/30 V DC Min. 79 V AC/79 V DC 0.08 mA
Outputs	4 relays	4 transistors	4 relays	4 relays
Continuous current	10 A for resistive load; 3 A for inductive load	0.3 A	10 A for resistive load; 3 A for inductive load	10 A for resistive load; 3 A for inductive load
Short-circuit protection	External fuse required	Electronic (approx. 1 A)	External fuse required	External fuse required
Operating frequency	2 Hz for resistive load; 0.5 Hz for inductive load	10 Hz	2 Hz for resistive load; 0.5 Hz for inductive load	2 Hz for resistive load; 0.5 Hz for inductive load
Power loss	0.3 to 1.7 W (12 V) 0.4 to 1.8 W (24 V)	0.7 to 1.3 W	0.9 to 2.7 W	1.1 to 4.6 W (115 V AC) 2.4 to 6.0 W (240 V AC) 0.5 to 2.9 (115 V DC) 1.2 to 3.6 (240 V DC)
Cycle time	< 0.1 ms / function	< 0.1 ms / function	< 0.1 ms / function	< 0.1 ms / function
Integrated time switches/reserve power	Yes/typ. 80 h	––	Yes/typ. 80 h	Yes/typ. 80 h
Connecting cables	2 x 1.5 mm^2, 1 x 2.5 mm^2			
Ambient temperature	0 °C to +55 °C			
Storage temperature	–40 °C to +70 °C			
Radio interference suppression	To EN 55011 (limit-value class B)			
Degree of protection	IP 20			
Certification	To VDE 0631, IEC 1131, UL, FM, CSA, ship-building certifications			
Installation	On 35-mm DIN rail, 4 WM wide, or wall mounting			
Dimensions	72 (4 WM) x 90 x 55 mm (W x H x D)			

Technical specifications Digital modules	LOGO! DM8 12/24R	LOGO! DM8 24	LOGO! DM8 24R	LOGO! DM8 230R
Inputs	4	4	4	4
Input/ supply voltage	12/24 V DC	24 V DC	24 V AC/DC	115/240 V AC/DC
Permissible range	10.8 to 28.8 V DC	20.4 to 28.8 V DC	20.4 to 28.8 V DC 20.4 to 26.4 V AC	85 to 253 V AC 100 to 253 V DC
On "0" signal On "1" signal	Max. 5 V DC Min. 8 V DC	Max. 5 V DC Min. 8 V DC	Max. 5 V AC/DC Min. 12 V AC/DC	Max. 40 V AC Min. 79 V AC
Input current	1.5 mA	1.5 mA	1.5 mA	0.08 mA
Outputs	4 relays	4 transistors	4 relays	4 relays
Continuous current I_{th} (per terminal)	5 A for resistive load 3 A for inductive load Max. 20 A over all four relays	0.3 A	5 A for resistive load 3 A for inductive load Max. 20 A over all four relays	5 A for resistive load 3 A for inductive load Max. 20 A over all four relays
Short-circuit protection	External fuse required	Electronic (approx. 1 A)	External fuse required	External fuse required
Operating frequency	2 Hz for resistive load 0.5 Hz for inductive load	10 Hz	2 Hz for resistive load 0.5 Hz for inductive load	2 Hz for resistive load 0.5 Hz for inductive load
Power loss	0.3 to 1.7 W at 12 V DC 0.4 to 1.8 W at 24 V DC	0.8 to 1.1 W	0.4 to 1.8 W at 24 V DC 0.9 to 2.7 W at 24 V AC	1.1 to 3.5 W (115 V AC) 2.4 to 4.8 W (240 V AC) 0.5 to 1.8 W (115 V DC) 1.2 to 2.4 W (240 V DC)
Dimensions (W x H x D)	36 (2 WM) x 90 x 55 mm	36 (2 WM) x 90 x 55 mm	36 (2 WM) x 90 x 55 mm	36 (2 WM) x 90 x 55 mm

R: Relay outputs, C: Clock, o = No display

Technical specifications Analog modules	LOGO! AM2	LOGO! AM2 PT100
Supply voltage	12/24 V DC	12/24 V DC
Permissible range	10.8 to 28.8 V DC	10.8 to 28.8 V DC
Analog inputs	2	2 x PT100 2- or 3-wire
Measuring range		–50 °C to +200 °C
Input range	0 to 10 V or 0 to 20 mA	
Resolution	10 bits scaled to 0 to 1000	0.25 °C
Cable length (shielded and twisted)	10 m	10 m
Measuring current		1.1 mA
Sensor supply	None	
Power loss for 12 V DC for 24 V DC	 0.3 to 0.6 W 0.6 to 1.2 W	 0.3 to 0.6 W 0.6 to 1.2 W
Dimensions (W x H x D)	36 (2 WM) x 90 x 55 mm	36 (2 WM) x 90 x 55 mm

Technical specifications Communications modules	EIB/KNX	CM AS-Interface (Slave)
Supply voltage	24 V AC/DC	24 V DC
Permissible range	20.4 to 28.8 V DC 20.4 to 26.4 V AC	19.2 to 28.8 V DC
Digital inputs*	16	4
Analog outputs*	8	–
Digital outputs*	12	4
Dimensions (W x H x D)	2 WM 36 x 90 x 55 mm	2 WM 36 x 90 x 55 mm

* Mapped onto LOGO! inputs/outputs

LOGO! accessories

LOGO!PC cable

- The direct connection to and from LOGO!
- For easy transmission of LOGO! switching programs to and from the PC

LOGO!program module

- For duplication
- And for protecting your expertise

LOGO! manual

- Detailed operating information
- Description of all integrated functions
- Numerous practical sample applications

LOGO!Power: the power supply

For effortless conversion of the AC 100/240 V line voltage into the relevant operating voltage

- For all LOGO! 12 V DC units
- And 24 V DC units
- Two versions in each case for different output currents

LOGO! Contact

Hum-free switching module

- For switching resistive loads up to 20A
- For direct switching of motors up to 4 kW
- For high performance loads in noise-sensitive environments

LOGO! Prom

For duplicating program modules

- Copying modules
- Describing modules by means of LOGO!Soft Comfort

Front panel racks

For installation in control cabinet doors

- Front IP 65 (IP 30 without disk)
- 4 WM or 8 WM (optionally with keys)

LOGO! – simply new

Ordering data

LOGO! versions	Order number
LOGO! 24 [1]	6ED1 052-1CC00-0BA4
LOGO! 24o [1]	6ED1 052-2CC00-0BA4
LOGO! 12/24RC [1]	6ED1 052-1MD00-0BA4
LOGO! 12/24RCo [1]	6ED1 052-2MD00-0BA4
LOGO! 24RC (AC/DC) [1]	6ED1 052-1HB00-0BA4
LOGO! 24RCo (AC/DC) [1]	6ED1 052-2HB00-0BA4
LOGO! 230RC [1]	6ED1 052-1FB00-0BA4
LOGO! 230RCo [1]	6ED1 052-2FB00-0BA4

Expansion modules	Order number
LOGO! DM8 24	6ED1 055-1CB00-0BA0
LOGO! DM8 12/24R	6ED1 055-1MB00-0BA1
LOGO! DM8 24R (AC/DC)	6ED1 055-1HB00-0BA0
LOGO! DM8 230R	6ED1 055-1FB00-0BA1
LOGO! AM2	6ED1 055-1MA00-0BA0
LOGO! AM2 PT100	6ED1 055-1MD00-0BA0

Communications modules	Order number
LOGO! AS-i	3RK1 400-0CE10-0AA2
LOGO! KNX (EIB)	6BK1 700-0BA00-0AA0

Optional accessories	Order number
LOGO! Manual German	6ED1 050-1AA00-0AE5
LOGO! Manual English	6ED1 050-1AA00-0BE5
LOGO! Memory Card	6ED1 056-5CA00-0BA0
LOGO! Soft Comfort 4.0	6ED1 058-0BA00-0YA0
LOGO! Soft Comfort Upgrade	6ED1 058-0CA00-0YE0
LOGO! PC Cable	6ED1 057-1AA00-0BA0

[1] Subject to export regulations AL:N and ECCN: EAR99
R: Relay outputs, C: Clock/time switch, o: No display

www.siemens.com/logo

LOGO! on the Internet
On the Internet you can find information on products and

- Free demo software
- Software upgrades
- Preprogrammed applications
- News
- The customer magazine GO!
- and much more

You can make purchases online (such as LOGO! software, hardware or action packages), and you can go to Service and Support (on request) for personal support.

Further sample applications and configuration aids can be found at
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and of course at
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