IDEC

Think Automation and beyond...

IDEC SmartRelay

Smart Control - IDEC SmartRelay

Look around you. IDEC SmartRelays are everywhere! You can find them in lighting controls, ice-making machines, grocery store mist systems and more. And there's a good reason: IDEC SmartRelays meet all safety requirements, while at the same time saving you time and money.

Now our new fourth-generation SmartRelays include new advanced feaures that offer even more versatility and functions! With new features including: an analog output module, 3 new function block types, upgraded software and available expansion modules, you can get everything you need from one compact module.

When you need a product you can rely on, is easy to use, and meets safety standards, look no further than IDEC. Our SmartRelays meet all industry standard approvals including cULus, CE, C-tick and ABS (American Bureau of Shipping). Plus they are FM approved for Class 1 Div 2 hazardous locations. The bottom line is IDEC SmartRelays provide the right solution for all your control needs!

Industrial Facility Systems

- Conveyor systems
- Elevator controls
- Liquid level controls
- Motor, pump and valve controls
- Water treatment and irrigation systems

Housing and Building Management

- Lighting controls
- HVAC
- Gate and door controls
- Shutter and sun blind controls
- Water and sprinkler systems

Unique Solutions

- Solar-electric systems
- Traffic light controls
- Ventilation systems on ships
- Extreme environmental conditions

Monitoring Systems

- Access controls
- Alarm systems
- Parking lot control monitoring

The possibilities are endless

www.idec.com/smartrelay

1

Select "Program" from the main menu.

2

Create your control logic.

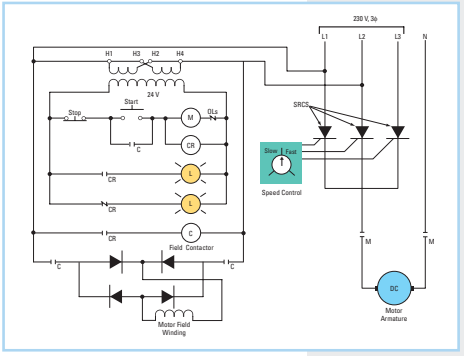
3

Select "Start," and you're done.

Why spend all that time wiring when it's as simple as 1, 2, 3?

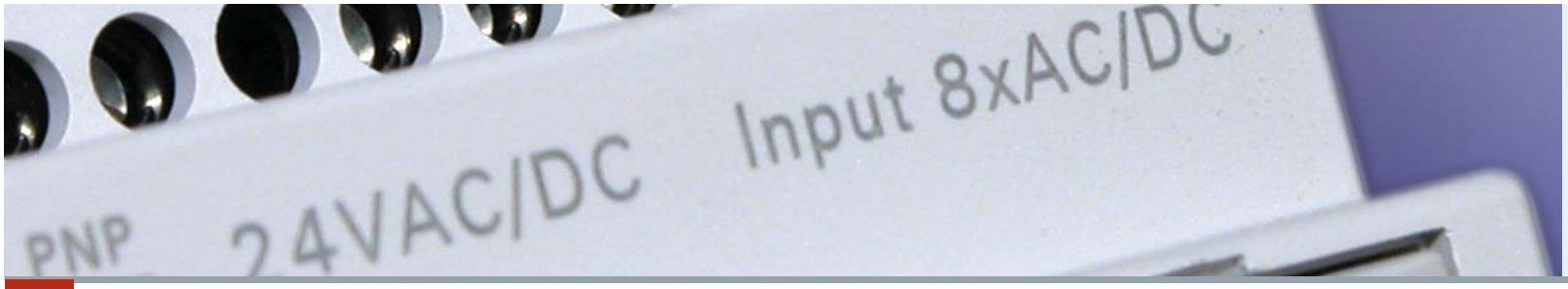
Your time is valuable and with that in mind, IDEC has created a product that will require very little of it. Using a system smaller than a PLC, with minimal wiring, mounting as simple as a quick snap on to a DIN rail, and programming as easy as one touch of a button, the user-friendly SmartRelay is the perfect solution.

Why wait? Replace your complicated system of relays, timers and counters with just one IDEC SmartRelay! It's safe to say we all want to reduce workloads while saving money, and with IDEC SmartRelays it's easy. These all-in-one controllers require less space in your control cabinet. And as you know, space in your panel is money in your pocket. Combine that with low maintenance and you've got a cost-effective product you can count on for all your control operations!



Your logic circuit can be accomplished ...

by just installing this unit.



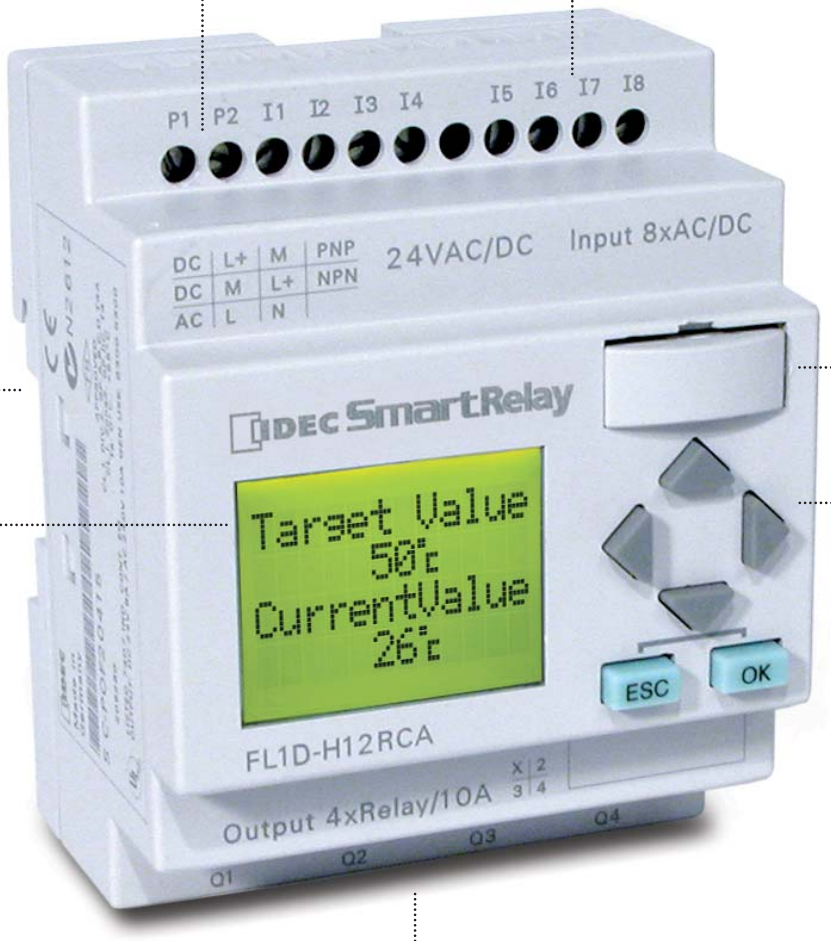
Digital/Analog Inputs

Each SmartRelay is equipped with 8 digital inputs for you to utilize in your applications. On selected models such as FL1D-H12RCE, FL1D-B12RCE and FL1D-H12SND, inputs 5 and 6 can be used as fast inputs up to 2 kHhz and inputs 7 and 8 can be configured as 0-10V analog inputs. A maximum of 24 digital inputs can be utilized with this system using digital expansion modules.

Universal Voltages

SmartRelays are available in 12/24VDC, 24VAC/DC, and 100-240VAC/DC voltages.

DIN Rail or Surface Mountable



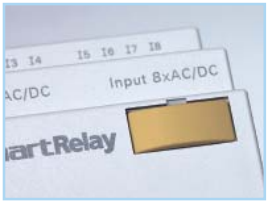
Backlit LCD Display

System status — input, output, analog values, timers and counters — can be monitored through an embedded 4x12 LCD on your SmartRelay. This allows you to display a predefined message with up to 48 characters chosen from 103 special character types. New You can now adjust the contrast on your display screen to your preference. Non-LCD versions are also available.

Digital Outputs

IDEC SmartRelays are equipped with 4 relay outputs rated at 10A/pt. A maximum of 16 outputs can be configured with this system using digital expansion modules.

Control at the push of a button



Multifunction Interface

If you prefer not to program your SmartRelay using the LCD and keypad, simply connect the interface cable to your PC and program with our WindLGC software instead. Or you can plug-in the special memory cartridge (FL1C-PM3) and have your SmartRelay operate the circuit program through the cartridge itself.

Operational Control Buttons

IDEC SmartRelays can be programmed with just the push of a button! Control buttons can be used to program, modify and change preset parameters. The four cursor keys can also be configured as inputs if needed.

EEPROM memory

Never worry about your program being lost again! With IDEC SmartRelays, your program is stored in a non-volatile EEPROM.

Password Protection

Concerned about your program being copied or altered? IDEC SmartRelays keep you safe with a unique password protection scheme allowing end users to access certain parameters without seeing or modifying the actual program.

Large Program Capacity

Running out of program space is a thing of the past. IDEC SmartRelays can handle up to 130 function blocks (2000 bytes).

Integrated Functions

8 predefined basic function blocks and 28 special function blocks ensure that almost all your conventional switching devices — timers and counters — can be replaced. Three New functions include a PI controller (e.g. for temperature control), a two-stage ramp function (e.g. for the control of frequency converters) and an analog multiplexer (e.g. for light control). See page 9.

Quality

IDEC means quality and dependability you can trust and our SmartRelays are no exception. Each model is cULus listed, CE certified, EMC compliant, FM approved for Class 1 Div 2 hazardous locations, C-tick compliant, Lloyds Registered, and ABS approved.

Expansion Modules

Just snap-on and go! No cable required. Each digital expansion module has 4 inputs and 4 outputs available in 12/24VDC, 24VAC/DC and 100-240VAC/DC. Up to 4 expansion modules can be mounted on an IDEC SmartRelay base module. Plus SmartRelay also has the capability to communicate within a LonWorks® network and AS-interface system with its LonWorks and AS-interface modules.

Analog Inputs & Outputs

Using the 2-pt analog input and 2-pt analog output expansion modules allows you to easily control and process your analog signal. IDEC SmartRelays can control and process 0-10V and 4-20mA signals with a 10-bit resolution. Up to 4 analog input and 1 analog output modules can be attached to the base module.

WindLGC 5.0 Software

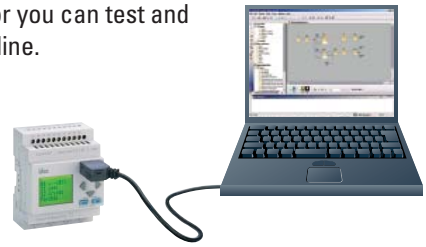
WindLGC is the exclusive programming software for the IDEC SmartRelay using Windows®.

Simplicity

Create, simulate, test and save your program in just a matter of seconds using drag and drop functions.

Control

Choose either function block or ladder programming, but keep in mind that you can always convert from one to the other with just the click of an icon. Offline program simulation (without the need for an actual unit) enables testing of the entire program from a PC, or you can test and monitor your IDEC SmartRelay online.



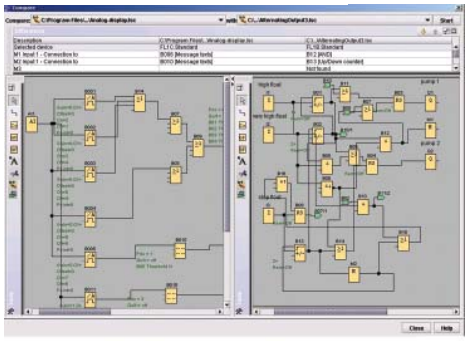
Documentation

You can create and save your WindLGC program as a .pdf or .jpg file. Professional documentation is included with all necessary configuration information such as comments and program settings.

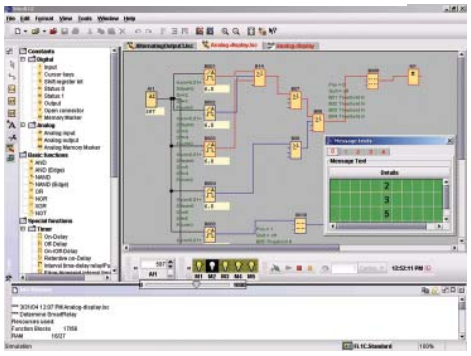
On the Web

Visit IDEC at www.idec.com/smartrelay for additional information on software upgrades, demo software, FAQs, manuals or brochures.

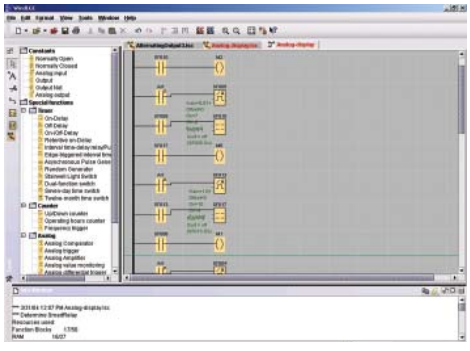
Program Comparison



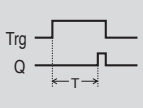
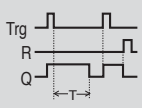
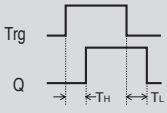
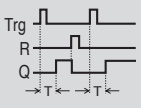
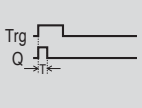
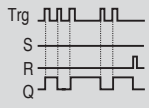
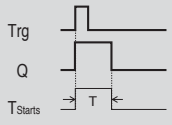
Simulation Mode/Online Monitor



Ladder Programming



Special Function Blocks

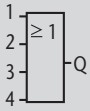
ON Delay	OFF Delay	ON/OFF Delay	Retentive ON Delay	Interval Time-Delay Relay/Pulse Output	Current Impulse Relay	Edge-Triggered Interval Time-Delay Relay
						
						

Create, test and save your program in seconds

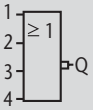
www.idec.com/smartrelay

Basic Function Blocks

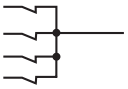
OR
Parallel connection of normally open contacts

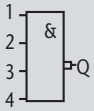


NOR
Series connection of normally closed contacts

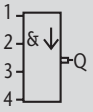


NAND
Parallel connection of normally closed contacts

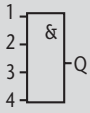




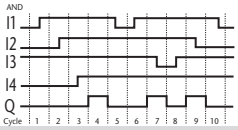
NAND (Edge)
Edge detection with edge evaluation (neg. edge)

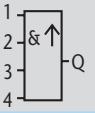


AND
Series connection of normally open contacts

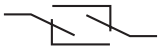


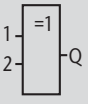
AND (Edge)
Edge detection with edge evaluation (pos. edge)



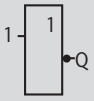


XOR
Double changeover contact

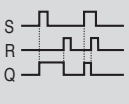
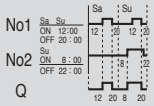
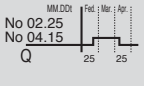
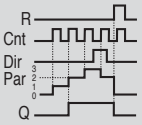
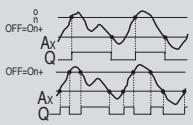
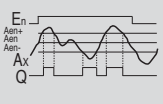
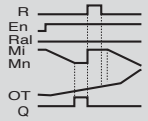
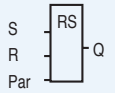
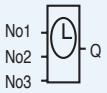
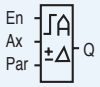




NOT
Connection of closed contact



Loaded with functions!

Latching Relay	Seven-Day Time Switch	Twelve-Month Time Switch	Up/Down Counter	Analog Differential Trigger	Analog Value Monitoring	Operating Hours Counter
						
						

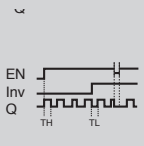
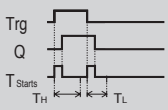
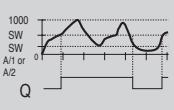
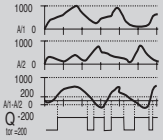
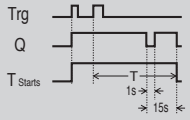
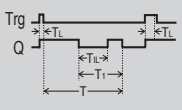
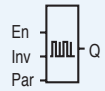
FL1D Base Modules – With LCD

Part Number	Rated Voltage	Input Signal	Input Type	Output Type	With Clock
FL1D-H12RCE	12/24V DC	DC I7 and I8 are used for digital/analog	PNP	Relay Output	Yes
FL1D-H12SND	24V DC			Transistor Source Output	—
FL1D-H12RCA	24V AC/DC	AC/DC	PNP/NPN	Relay Output	Yes
FL1D-H12RCC	100-240V AC/DC		PNP		

FL1D Base Modules – Without LCD

Part Number	Rated Voltage	Input Signal	Input Type	Output Type	With Clock
FL1D-B12RCE	12/24V DC	DC I7 and I8 are used for digital/analog	PNP	Relay Output	Yes
FL1D-B12RCA	24V AC/DC	AC/DC	PNP/NPN	Relay Output	Yes
FL1D-B12RCC	100-240V AC/DC		PNP		

Special Function Blocks (Cont.)

Asynchronous Pulse Generator	Random Generator	Frequency Trigger	Analog Trigger	Analog Comparator	Stairwell Light Switch	Dual-Function Switch
						
						

Modules that expand the possibilities

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I/O Expansion Modules

Part Number	Module	Input Power	Input Type	Output Type	Total I/O
FL1B-M08B2R2	Combination I/O Module	12/24V DC	DC input	Relay output	8 (4 in/4 Out)
FL1B-M08B1S2		24V DC	DC input	Transistor Output	8 (4 in/4 Out)
FL1B-M08C2R2		100-240V AC/DC	AC/DC input	Relay Output	8 (4 in/4 Out)
FL1B-M08D2R2		24V AC/DC	AC/DC input	Relay Output	8 (4 in/4 Out)
FL1B-J2B2	Analog Input Module	12/24V DC	0-10V, 4-20mA	—	2 (2 in/0 Out)
FL1D-K2B2	Analog Output Module	24V DC	—	0-10V	2 (0 in/2 Out)

New

LonWorks® Communication Module

- LonWorks® Communication module contains standard network variable type (SNVT) to achieve open network communication for building automation
- Maximum virtual inputs/analog inputs/outputs: 16/8/12 points
- An external interface file (XIF extension) unique to each LonWorks® module is needed to communicate through the LonWorks® network and can be downloaded at www.idec.com/smartrelay
- See page 11 for more details

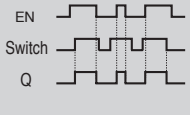
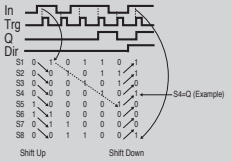
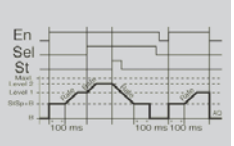
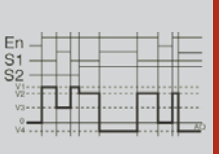
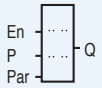
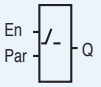
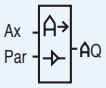
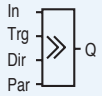
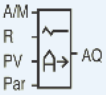
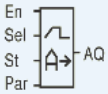
Part Number	Module	Input Power	Total I/O
FL1B-CL1C12	LonWorks® Communication Module	24V AC/DC	Input: 16 points Analog Input: 8 points Output: 12 points

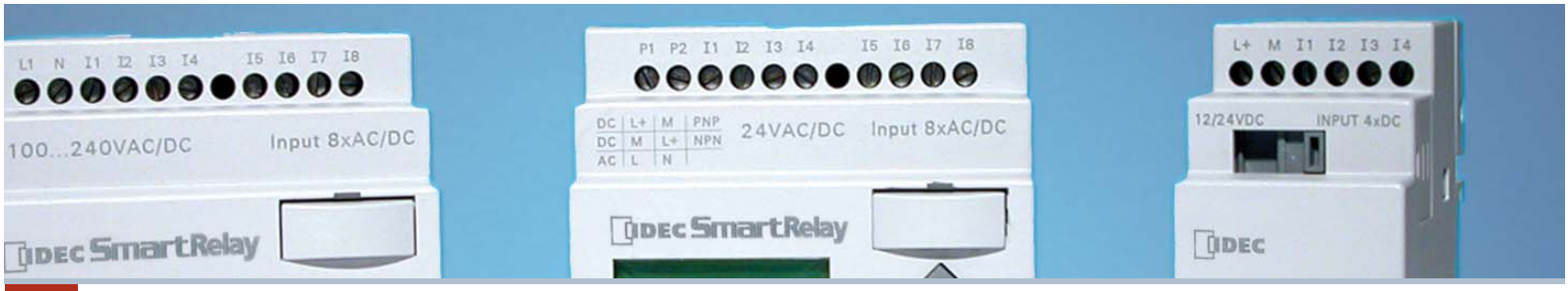
LonWorks® is a registered trademark of Echelon

AS-Interface Communication Module

- The AS-Interface communication module provides optimum solutions for decentralized controls and savings in installation space and wiring
- Virtual I/O points: 4 inputs, 4 outputs
- See page 11 for more details

Part Number	Module	Input Power	Total I/O
FL1B-CAS2	AS-Interface Communication Module	30V DC	Input: 4 points Output: 4 points

Message Text	Softkey	Analog Amplifier	Shift Register	PI Controller (New)	Analog Ramp Control (New)	Analog Multiplexer (New)
						
						



Starter Kit

- IDEC SmartRelay Starter Kit is an economical and ideal solution for first time IDEC SmartRelay users
- Package includes a base module, WindLGC programming software, programming cable, simulator switch (DC models only) and a user's manual

Part Number	Description
SMARTSTART-BAC-D	FL1D-B12RCC, WindLGC software and programming cable
SMARTSTART-BDC-D	FL1D-B12RCE, WindLGC software, programming cable, and simulator switch
SMARTSTART-HAC-D	FL1D-H12RCC, WindLGC software and programming cable
SMARTSTART-HDC-D	FL1D-H12RCE, WindLGC software, programming cable, and simulator switch

Accessories

User's Manual
FL9Y-B966-0

WindLGC 5.0 Software
FL9Y-LP1CDW

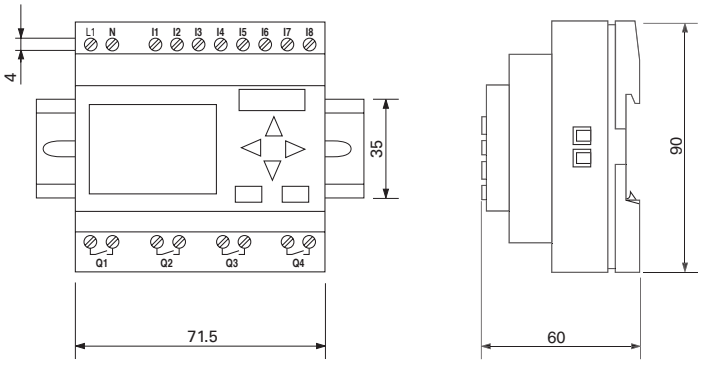
Part Number	Description
FL1C-PM3	Memory cartridge, with user defined protection freature
FL9Y-LP1CDW	Programming Software: WindLGC Ver. 5CD w/Online Manual
FL1A-PC1	Programming Cable
BNDN1000	35mm Aluminum DIN Rail, 1m/3.28ft
BNL6	End Clips, Prevents modules from sliding off DIN Rail
MT-101	Memory Cartridge Removal Tool
FL1B-PSP1	Mounts Module Directly to Panel
FL1B-Y1371-SW8	8pt Input Simulator Switch, Used with 12, 24V DC Base Module Only
FL9Y-B966-0	FL1D User's Manual, Available for download at: www.idec.com/smartrelay
FC4A-USB	USB to RS232 Converter, For use with "USB Only" PC's

Memory Cartridge
FL1C-PM3

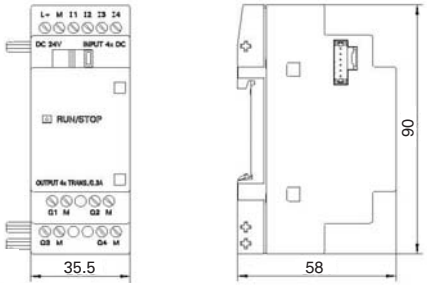
Simulator Switch
FL1B-Y1371-SW8

Programming Cable
FL1A-PC1

Base Module Dimensions

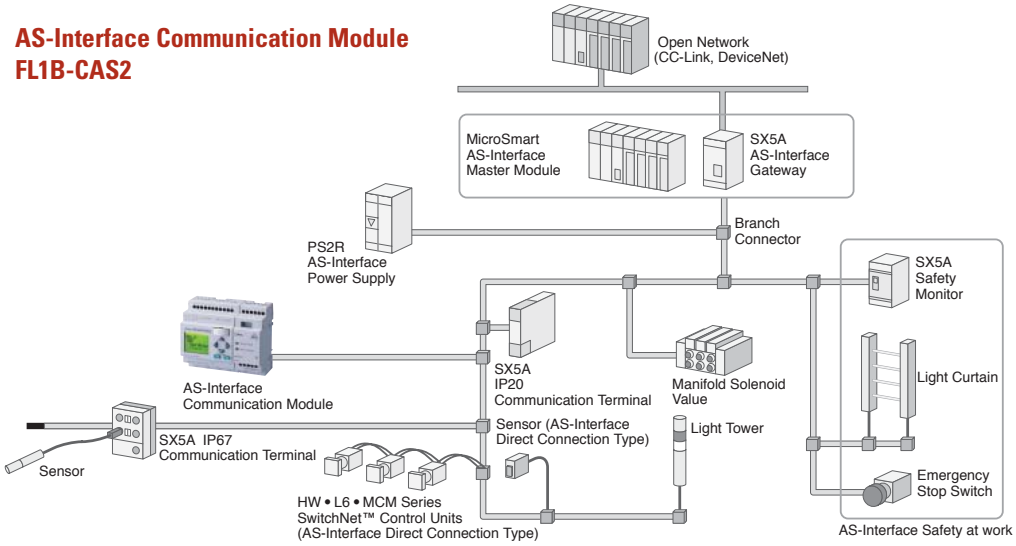


I/O Expansion Module Dimensions



All dimensions in mm.
Detailed CAD drawings are available on our website at: www.idec.com/smartrelay.

AS-Interface Communication Module
FL1B-CAS2



The AS-Interface communication module provides the optimum solution for savings in cables, installation space, and wiring costs, and offers the possibility of decentralized control.

Module Combination and Allocation Numbers

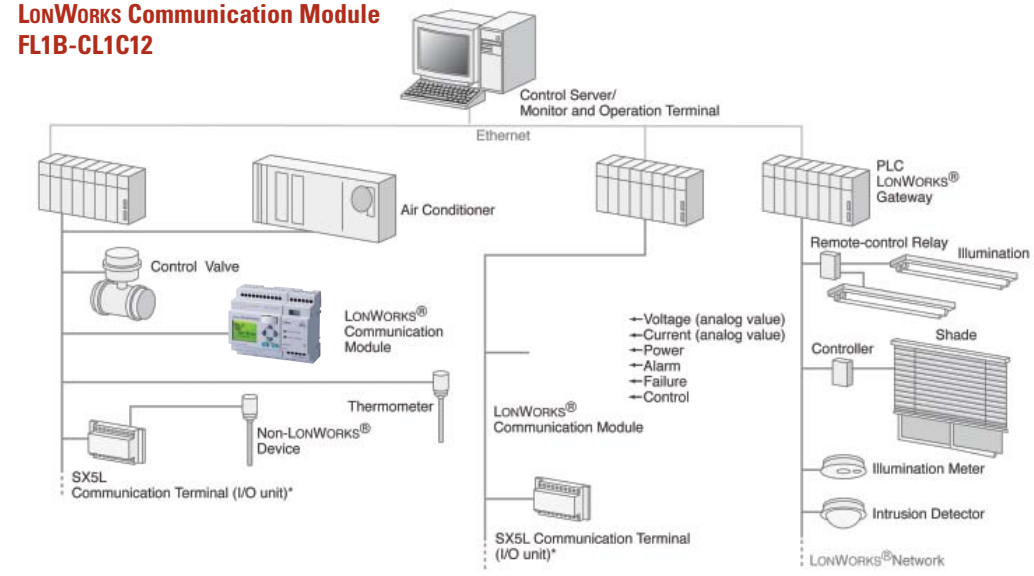
Using expansion I/O modules

		FL1D-H12RCE								FL1B-M08B2R2						FL1B-CAS2			
Digital Input:	I	1	2	3	4	5	6	7	8	9	10	11	12			13	14	15	16
Analog Input:	AI	1	2											3	4				
Digital Output:	Q	1	2	3	4					5	6	7	8			9	10	11	12

FL1B-J2B2

Base module
Analog input module
Combination I/O module
AS-interface communication module

LonWorks Communication Module
FL1B-CL1C12



Combination of easy-to-program IDEC SmartRelay and LonWorks communicaton module achieves remote control and monitoring on a LonWorks network.

Module Combination and Allocation Numbers

1. Maximum number of I/O points when using LonWorks communication module

		FL1D-H12RCC								FL1B-CL1C12														
Digital Input:	I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Analog Input:	AI									1	2	3	4	5	6	7	8								
Digital Output:	Q	1	2	3	4					5	6	7	8	9	10	11	12	13	14	15	16				

2. Using analog inputs on the base module

		FL1D-H12RCE								FL1B-CL1C12														
Digital Input:	I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Analog Input:	AI	1	2							3	4	5	6	7	8										
Digital Output:	Q	1	2	3	4					5	6	7	8	9	10	11	12	13	14	15	16				

3. Using I/O expansion module

		FL1D-H12RCE								FL1B-M08B2R2						FL1B-CL1C12														
Digital Input:	I	1	2	3	4	5	6	7	8	9	10	11	12					13	14	15	16	17	18	19	20	21	22	23	24
Analog Input:	AI	1	2											3	4			5	6	7	8								
Analog Output:	AI															1	2												
Digital Output:	Q	1	2	3	4					5	6	7	8					9	10	11	12	13	14	15	16				

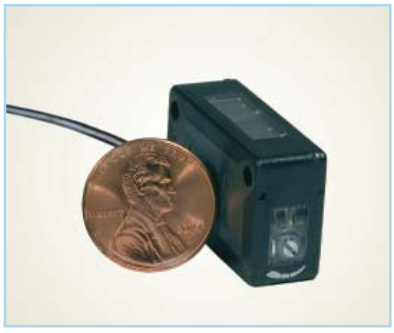
FL1B-J2B2 FL1D-K2B2

Base module
Combination I/O module
LonWorks communication module
Analog input module
Analog output module

Note 1: One LonWorks communication module can be used with a base module and must be mounted at the right-most position of the row.
Note 2: I/O numbers are automatically allocated starting with the base module.
Note 3: When the base module with analog inputs is used, I1 to I8, AI1, and AI2 are occupied whether the analog inputs are used or not.

PS5R Slim Line Power Supplies

IDEC PS5R Slim Line power supplies have all the features, all the power, and only half the size of traditional power supplies. Save valuable DIN Rail space with the 30W, 60W, 90W, 120W, or 240W models which can fit any of your power needs. The PS5R Slim Line models are UL508 and UL1604 listed for hazardous locations. The 30W and 60W models are also NEC Class 2 rated. The 120W and 240W models comply with SEMI F47 sag immunity requirements.



SA1E Sensors

Choose your sensing method, operation mode, control output and connection method with the simple and affordable SA1E sensors, and get exactly what you need in a very small package. There are 32 models available, all rated IP67 for water resistance, with a response time of 1 msec (maximum). Special interference prevention allows close mounting of two sensors (except for through-beam type), and the quick connect and disconnect option make installation a breeze.

Support Information

IDEC SmartRelay
www.idec.com/smartrelay

Technical support:
support@idec.com

800-262-IDEC
www.idec.com

HW Switches

In basic black or stylish metal, the HW series of 22mm switches from IDEC are available in several styles to dress up any panel. HW pushbuttons and pilot devices are internationally-rated, designed for use almost anywhere in the world, and have removable contact blocks, finger-safe terminals, and tamperproof construction. Choose simple black plastic bezels for clean uniformity or chrome-plated metallic bezels for a rugged industrial look.

IDEC *Think Automation and beyond...*

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