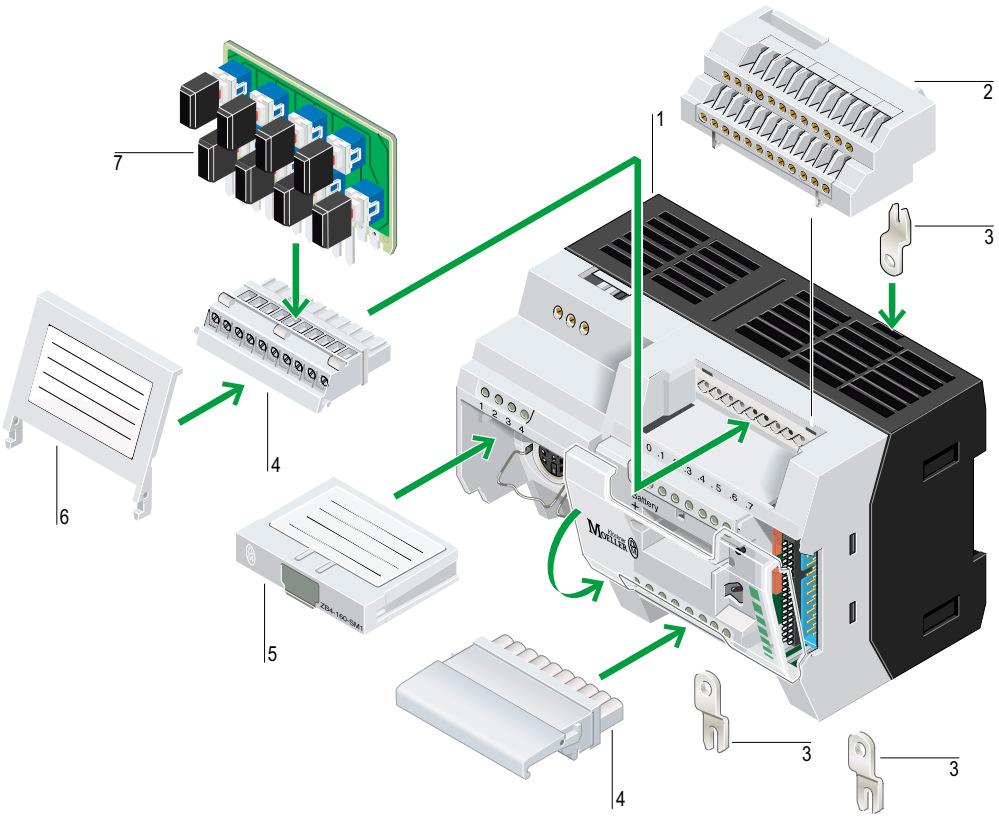
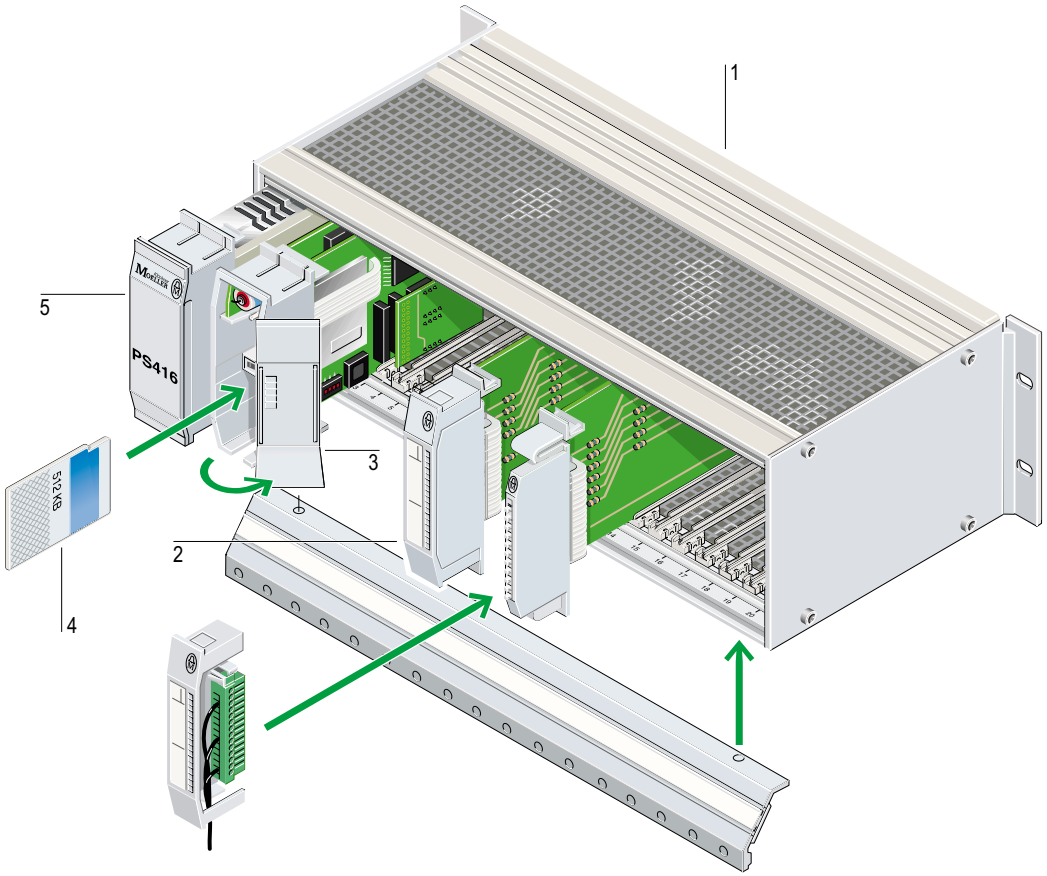


Compact Systems



Modular Systems



Compact Systems

1 **Compact Programmable Controllers** – Page 1/8
PS 4-141-MM1 and **PS 4-151-MM1**
Stand-alone control system for medium-complexity machines / systems with control and monitoring functions
I/O expandable via Suconet K
Can operate as master or intelli-slave with Suconet K networking capability

1 **Compact Programmable Controllers** – Page 1/8
PS 4-201-MM1
Stand-alone control system for medium-complexity machines / systems with control and monitoring functions
I/O expandable via Suconet K
Locally expandable via **LE 4** modules
Can operate as master PLC or intelli-slave PLC with Suconet K networking capability

1 **Remote Expansion Modules** – Page 1/10
EM 4
Network expansion module for remote I/O expansion of **PS 4** compact programmable controllers and **PS 416** modular programmable controller
Suconet K and InterBus S networking capability

1 **Remote Expansion Modules** – Page 1/11
LE 4
Local expansion module for **PS 4-201-MM1** compact programmable controllers and **EM 4-200** expansion modules to obtain more I/O

2 **Voltage Bus Terminal Block** – Pages 1/7, 1/9
2 by 11 position terminal block snaps on **PS 4** / **EM 4** / **LE 4** units
Simplifies wiring of sensors / proximity switches

3 **Mounting Clips** – Pages 1/7, 1/9
Clips for attaching **PS 4** / **EM 4** / **LE 4** to mounting plate

4 **Removable I/O Terminal Blocks** – Pages 1/7, 1/9
Removable screw terminal blocks for **PS 4** / **EM 4** / **LE 4** I/O

5 **Flash Memory Modules** – Pages 1/7, 1/9
Memory modules for the **S 40** based **PS 4** controllers

6 **Hinged Cover for Labelling** – Pages 1/7, 1/9
I/O terminal block cover with large labelling area

7 **Digital Input Simulator** – Pages 1/7, 1/9
For simulation of 8 digital inputs

Modular Systems

1 **Modular Programmable Controller** – Page 1/14
PS 416 modular programmable controller for medium to large complexity machines / systems for both centralized and decentralized or distributed I/O systems.
8, 12 or 19 I/O card racks.
I/O expansion by Suconet K or Profibus DP.

2 **Modular PS 416 Cards** – Page 1/15
Digital input cards, digital output cards
Analog input card, analog input/output card
Serial communication card, high-speed counter card
Network cards for Suconet K, Interbus S and Profibus

3 **Central Processor Units** – Page 1/14
PS 416 CPU's from 256 KB to 1 MB RAM for user program
Integrated programming interface and Suconet K interface

4 **Memory Cards** – Page 1/14
PCMCIA RAM or Flash memory cards
512 KB or 1 MB for storing user programs, recipe data, operating systems, and/or other user specified files

5 **Power Supply** – Page 1/14
Input mains of 230V AC or 120V AC or 24V DC

1	2	3	4
Introducing the new easy easy to program.....Ladder diagram programmed, built in LCD screen and keys easy to mount.....35mm DIN rail mount, 45 mm wide (4 units) easy to maintain.....No batteries!		**Type**	**Price** $
Ladder Logic Control Relay 24 V DC supply voltage Eight digital inputs, 24 V DC or Six digital and two analog inputs Four Relay outputs, 240 V AC, 8.0 A LCD screen displays 4 Ladder rungs Cursor and control keys 120 contact flash program memory Password protection Power flow indication Includes Timers and Counters		**EASY 412-DC-R**	See Price List
Ladder Logic Control Relay 24 V DC supply voltage Eight digital inputs, 24 V DC or six digital and two analog inputs Four Relay outputs, 240 V AC, 8.0 A Real Time Clock LCD screen displays 4 Ladder rungs Cursor and control keys 120 contact flash program memory Password protection Power flow indication Includes Timers and Counters		**EASY 412-DC-RC**	See Price List
Ladder Logic Control Relay 115 - 230 V AC supply voltage Eight digital inputs, 120 V AC Four Relay outputs, 240 V AC, 8.0 A LCD screen displays 4 Ladder rungs Cursor and control keys 120 contact flash program memory Password protection Power flow indication Includes Timers and Counters		**EASY 412-AC-R**	See Price List
Ladder Logic Control Relay 115 - 230 V AC supply voltage Eight digital inputs, 120 V AC Four Relay outputs, 240 V AC, 8.0 A Real Time Clock LCD screen displays 4 Ladder rungs Cursor and control keys 120 contact flash program memory Password protection Power flow indication Includes Timers and Counters		**EASY 412-AC-RC**	See Price List
easy programming software Windows based programming software for the easy. Ladder diagram programming and printing		**EASY SOFT-GB**	See Price List
easy programming cable Programming cable for connecting the **easy 412-...** to a PC serial I/O port. Length: 2 meters		**EASY-PC-CAB**	See Price List
easy memory module Flash memory module for backing-up and copying of programs from/to the **easy 412**		**EASY-M-8K**	See Price List

1	2	3	4
		Type	**Price** $
Programmable controller 24 V DC supply voltage Eight digital inputs, 24 V DC Input delay : typically 55 µs 1 high-speed counter input, 3 kHz Six digital outputs, 24 V DC, 0.5 A RS 485 programming interface Suconet K1 field bus port Two reference value potentiometers Ambient temperature range : 0 -55 ˚C.		**PS 4-101-DD1**	See Price List
Programmable controller 115 - 230 V AC supply voltage Eight digital inputs, 24 V DC Input supply voltage provided by controller Input delay : typically 55 µs 1 high-speed counter input, 3 kHz Six digital outputs (Relays) RS 485 programming interface Suconet K1 field bus port Two reference value potentiometers Ambient temperature range : 0 -55 ˚C.		**PS 4-111-DR1**	See Price List
Programmable controller Same as the **PS 4-111-DR1**, but with an extended ambient temperature range of - 25 to + 55 ˚C		**PS 4-111-DR5**	See Price List
Manual Hardware description and engineering of **PS 4-100** series devices in English		**AWB 27-1157-GB**	See Price List
Software package for programming of **PS 4-100** series, consisting of : - 1 set of 3.5" diskettes, 1.44 MB - 1 set of documentation Language of programming software and documentation : English Requires **ZB4-501-UM1** interface converter		**S 30-S 3-GB**	See Price List
PS 4 interface converter For connection to 9-pin serial PC interface RS 232 C/RS 485 conversion for programming of **PS 4-100** series devices using a PC. Can be used with **S 30-S 3** Version 2.3 and above		**ZB4-501-UM1**	See Price List
Documentation For programming **PS 4-100** series devices in English		**DOK 9024-GB**	See Price List
Zero-voltage safe EEPROM memory module Stores up to two **PS 4-100** series programs		**EE 1-PS 3**	See Price List

1	2	3	4
		Type	**Price** $
SN 4 series regulated +24 V DC power supplies			
60 Watt + 24 V DC power supply Input 115 / 230 V AC at 50/60 Hz Output +24 V DC at 2.5 A, regulation 3.0 % Designed for the **PS 4, EM 4** product family 35 mm DIN rail mount		**SN 4-025-BI7**	See Price List
120 Watt + 24 V DC power supply Input 115 / 230 V AC at 50/60 Hz Output +24 V DC at 5.0 A, regulation 3.0 % Designed for the **PS 4, EM 4** product family 35 mm DIN rail mount		**SN 4-050-BI7**	See Price List
CM 4-500 series gateway field bus module		**CM 4 -504-GS1**	See Price List
Gateway PROFIBUS DP <> Suconet K Gateway for PROFIBUS DP and Suconet K Slave function gateway for 120 byte data exchange between both field buses. PROFIBUS DP: 9.6 k baud to 12 M baud Suconet K: 187.5 / 375 k baud Connection by 2 9 pin D submin. plugs Includes project configuration software. Requires + 24 V DC power supply.			

1	2	3	4
		Type	**Price** $
Programmable controller 24 V DC supply voltage Sixteen digital inputs, 24 V DC Input delay : typically 100 µs 1 high-speed counter input, 3 kHz 1 alarm input, 1 interrupt input Two analog inputs, 10 bit resolution Fourteen digital outputs, 24 V DC, 0.5 A 1 analog output, 12 bit resolution RS 232 programming interface Real-time clock/calendar I/O expansion via Suconet-K Two reference value potentiometers Ambient temperature range : 0 -55 ˚C		**PS 4-141-MM1**	See Price List
Programmable controller 110 - 240 V AC supply voltage Sixteen digital inputs, 24 V DC Input delay : typically 100 µs 1 high-speed counter input, 3 kHz 1 alarm input, 1 interrupt input Two analog inputs, 10 bit resolution Eight Relay outputs, 240 V AC, 1.0 A 1 analog output, 12 bit resolution RS 232 programming interface Real-time clock/calendar I/O expansion via Suconet-K Two reference value potentiometers Ambient temperature range : 0 -55 ˚C		**PS 4-151-MM1**	See Price List
Programmable controller 24 V DC supply voltage Eight digital inputs, 24 V DC Input delay : typically 100 µs 1 high-speed counter input, 3 kHz 1 alarm input, 1 interrupt input Two analog inputs, 10 bit resolution Six digital outputs, 24 V DC, 0.5 A 1 analog output, 12 bit resolution RS 232 programming interface Real-time clock/calendar I/O expansion via: Local Expansion interface, max. six **LE 4** modules Suconet-K, max. 8 Suconet K/K1 devices Two reference value potentiometers Ambient temperature range : 0 -55°C		**PS 4-201-MM1**	See Price List

1	2	3	4
		Type	**Price** $
Memory module For expanding the program memory from 24 K byte to 56 K byte RAM		**ZB 4-032-SR1**	See Price List
Memory module For 24 K byte program memory backup (Flash) and 64 K byte recipe memory (Flash)		**ZB 4-128-SF1**	See Price List
Memory module For expanding the program memory from 24 K byte to 56 K byte RAM and with 56 K byte program memory backup (Flash) and 64 K byte recipe memory (Flash)		**ZB 4-160-SM1**	See Price List
Battery for PS 4-200 series For backing up the user program memory RAM, battery life typically 3 years		**ZB 4-600-BT1**	See Price List
Windows based, IEC 1131-3 compliant software package for programming of **PS 4-141-MM1**, **PS 4-151-MM1** or **PS 4-201-MM1** - 1 CD ROM - 1 set of documentation (Requires MS Windows 3.1 or higher)		**S 40-GB-CD**	See Price List
S 30-xxx and S 4 upgrade package to S 40 software for programming of **PS 4-141-MM1**, **PS 4-151-MM1** or **PS 4-201-MM1** Requires the original diskettes of **S 30-S 3**, **S 30-S 316**, **S 30-S 32**, **S 30-S 4-200**, **S 30-S 4**, **S 4**, software - 1 CD ROM - 1 set of documentation (Requires MS Windows 3.1 or higher)		**S 40-GB-U-CD**	See Price List
Programming cable For the **PS 4-141-MM1**, **PS 4-151-MM1** or **PS 4-201-MM1** Length : 2 m		**ZB 4-303-KB1**	See Price List
Manual Hardware description and engineering of **PS 4-141-MM1** and **PS 4-151-MM1** PLC's in English		**AWB 27-1266-GB**	See Price List
Manual Hardware description and engineering of **PS 4-201-MM1** PLC devices in English		**AWB 27-1184-GB**	See Price List
Simulator For inputs of **PS 4-100/200** series devices		**ZB 4-108-ES1**	See Price List

1	2	3	4
		Type	**Price** $
EM 4-100 series expansion modules			
Expansion module, digital 24 V DC supply voltage Eight digital inputs, 24 V DC Input delay : 0.2 ms Eight digital outputs, 24 V DC, 0.5 A In addition, two outputs can be changed to inputs via a selector switch Two Suconet K ports		**EM 4-101-DD2**	See Price List
Expansion module, digital 115 - 230 V AC supply voltage Eight digital inputs, 24 V DC Input delay : 0.2 ms Internal 24 V DC, 50 mA control voltage supply for the inputs Six digital outputs as relays (NO) Two Suconet K ports		**EM 4-111-DR2**	See Price List
Expansion module, analog 24 V DC supply voltage Eight analog inputs (4V, 4I) Four analog outputs (4V) 8/12-bit resolution Two Suconet-K ports		**EM 4-101-AA2**	See Price List
Expansion module, RTD 24 V DC supply voltage Six 3-wire RTD inputs (Pt 100, Ni 1000) Two analog inputs (0 - 10 V) 12-bit resolution Two Suconet-K ports		**EM 4-101-TX1**	See Price List
Expansion module, analog 24 V DC supply voltage Six analog inputs (V/I user configured) Four analog outputs (4V) 12-bit resolution Two InterBus-S ports		**EM 4-102-AA1**	See Price List
EM 4-200 series expansion modules			
Expansion module, digital 24 V DC supply voltage 16 digital inputs, 24 V DC Input delay : 0.2 ms Ready for expansion by up to six **LE 4** local expansion modules Two Suconet-K ports		**EM 4-201-DX2**	See Price List
Expansion module, digital 24 V DC supply voltage 16 digital inputs, 24 V DC Input delay : 0.2 ms Ready for expansion by up to six **LE 4** local expansion modules Two InterBus-S ports		**EM 4-202-DX1**	See Price List

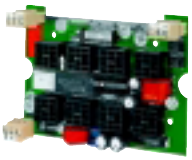
1	2	3	4
		Type	**Price** $
LE 4-100 series local expansion modules			
Local expansion module Digital input expansion module 24 V DC supply voltage 16 digital inputs, 24 V DC Input delay : 0.2 ms		**LE 4-116-DX1**	See Price List
Local expansion module Digital input/output expansion module 24 V DC supply voltage Eight digital inputs, 24 V DC Eight digital outputs, 24 V DC at 0.5 A		**LE 4-116-DD1**	See Price List
Local expansion module Pneumatic output expansion module 24 V DC supply voltage Four pneumatic outputs 0.7 mm standard width 101.1 psi (7 bar) 0.88 SCFM (25 l/min) flow rate		**LE 4-104-XP1**	See Price List
Local expansion module Digital output expansion module 24 V DC supply voltage Eight digital outputs, 24 V DC at 2.0 A		**LE 4-108-XD1**	See Price List
Local expansion module Digital output expansion module 24 V DC supply voltage Eight relay outputs (NO)		**LE 4-108-XR1**	See Price List
Local expansion module Digital output expansion module 24 V DC supply voltage 16 digital outputs, 24 V DC at 0.5 A		**LE 4-116-XD1**	See Price List
LE 4-300 series local expansion modules			
Local expansion module Digital input expansion module 8 digital inputs, 120 V AC Input delay : 30 ms		**LE 4-308-HX1**	See Price List
Local expansion module Digital output expansion module Eight Triac outputs, 120 V AC at 0.5 A		**LE 4-308-XH1**	See Price List
Manual **EM 4...** hardware and engineering Remote I/O expansion using expansion modules in English		**AWB 27-1257-GB**	See Price List
Manual **LE 4...** hardware and engineering I/O expansion using local expansion modules in English		**AWB 27-1270-GB**	See Price List

1	2	3	4
		Type	**Price** $
LE 4-200 series local expansion modules			
Local expansion module Analog input/output expansion module 24 V DC supply voltage Four analog inputs (4 V) Two analog outputs (2 V)		**LE 4-206-AA1**	See Price List
LE 4-500 series local expansion modules			
Local expansion module Suconet K Communication module Suconet-K Master or slave function		**LE 4-501-BS1**	See Price List
Local expansion module PROFIBUS FMS Communication module PROFIBUS to DIN 19 245 Parts 1 and 2 Slave function 9.6 K bit/s to 500 K bit/s Read and Write services Cyclical/acyclic data exchange		**LE 4-503-BS1**	See Price List
LE 4-600 series local expansion modules			
Local expansion module High Speed Counter expansion module 24 V DC supply voltage Two High Speed counters, 24 bit 300 kHz with +5 VDC encoders, 30 kHz with +24 VDC encoders		**LE 4-622-CX1**	See Price List

1	2	3	4
		Type	**Price** $
Mounting bracket For screw mounting **PS 4**, **EM 4** and **LE 4** devices on the mounting plate; 3 brackets required for each device. Standard pack : 9		**ZB 4-101-GF1**	See Price List
Hinged cover With space for labelling individual signal outputs directly on the device, 20 characters per terminal		**ZB 4-101-GZ1**	See Price List
Plug-in screw terminal For pre-wiring of inputs/outputs 10-pole Standard pack : 2		**ZB 4-110-KL1**	See Price List
Twin-level terminal block Clip-on terminal, 2 x 11-pole, for direct connection of switches and actuators Standard pack : 2		**ZB 4-122-KL1**	See Price List
Data cable For connection between **PS 4 100/200** series devices and Suconet-K expansion module (e. g. **EM 4**) Length : 0.5 m		**KPG1-PS 3**	See Price List
Data plug 5-pin, angled, user to fit to Suconet-K cables Standard pack : 2		**S 1-PS 3**	See Price List
InterBus - S adapter cable For **EM 4-102-AA1** and **EM 4-202-DX1** to InterBus - S remote bus IN 9-pin SUB-D socket to 8- pin DIN plug Length : 0.3 m		**ZB 4-301-KB1**	See Price List
InterBus - S adapter cable For **EM 4-102-AA1** and **EM 4-202-DX1** to InterBus - S remote bus OUT 9-pin SUB-D socket to 8- pin DIN plug Length : 0.3 m		**ZB 4-302-KB1**	See Price List
InterBus - S data plug 8-pin DIN plug, angled, user to fit to InterBus - S cables for **EM 4-102-AA1** and **EM 4-202-DX1**		**ZB 4-108-DS1**	See Price List

1	2	3	4
		Type	**Price** $
Racks For mounting plate installation (can be adapted for front mounting) - 9 free slots - 13 free slots - 19 free slots		**PS 416-BGT-400** **PS 416-BGT-410** **PS 416-BGT-420**	See Price List
For front mounting, 19 free slots (can be adapted for mounting plate installation)		**PS 416-BGT-421**	See Price List
Power Supply 230 V AC primary with potential isolation to 5 V DC / 8.0 A secondary		**PS 416-POW-400**	See Price List
115 V AC primary with potential isolation to 5 V DC / 8.0 A secondary		**PS 416-POW-420**	See Price List
24 V DC primary with potential isolation to 5 V DC / 8.0 A secondary		**PS 416-POW-410**	See Price List
Central Processing Unit Common features to all **PS 416-CPU-...;** RS 232/485 programming interface 512 KB SRAM for operating system Memory backup via PCMCIA interface Requires **S 40-GB** software Requires two **PS 416-ZBB-410** batteries			See Price List
256 KB SRAM user program memory Does not have a Suconet-K interface		**PS 416-CPU-200**	See Price List
512 KB SRAM user program memory Integrated Suconet-K interface		**PS 416-CPU-300**	See Price List
1 MB SRAM user program memory Integrated Suconet-K interface		**PS 416-CPU-400**	See Price List
Memory Accessories 512 KB SRAM memory card (PCMCIA), backs-up the user program memory, up to 512 KB		**PS 416-MEM-430**	See Price List
1 MB SRAM memory card (PCMCIA), backs-up the user program memory, up to 1 MB		**PS 416-MEM-431**	See Price List
512 KB FLASH memory card (PCMCIA), backs-up the user program memory, up to 512 KB		**PS 416-MEM-440**	See Price List
1 MB FLASH memory card (PCMCIA), backs-up the user program memory, up to 1 MB		**PS 416-MEM-441**	See Price List
Batteries Battery module for **PS 416-CPU-200/300/400** (two required per CPU)		**PS 416-ZBB-410**	See Price List
Replacement battery for **PS 416-MEM-430 / 431** cards.		**PS 416-ZBB-300**	See Price List

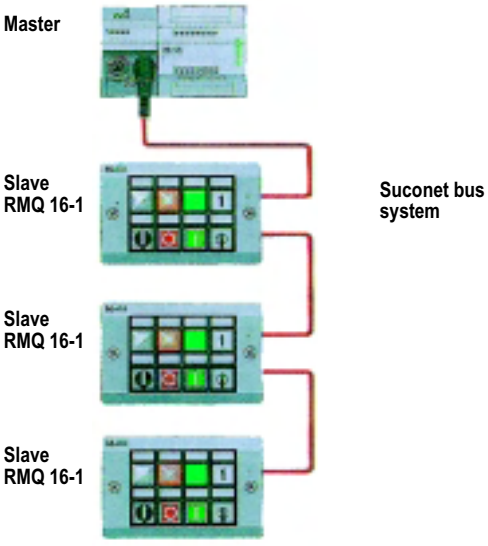
1	2	3	4
		Type	**Price** $
Digital Input/Output cards			
16 isolated digital inputs, 24 V DC - On delay 3.0 ms, off delay 3.0 ms - On delay 0.2 ms , off delay 0.3 ms		**PS 416-INP-400** **PS 416-INP-401**	See Price List See Price List
16 Isolated digital outputs, 24 V DC - 16 outputs, 0.5 A each - 8 outputs, 2.0 A each		**PS 416-OUT-400** **PS 416-OUT-410**	See Price List See Price List
Analog Input/Output cards			
8 analog inputs, 12 bit resolution 0 - 1 V, 0 - 20 mA, 4 - 20 mA all channels, plus ±10 V, 0 - 10 V, 0 - 5 V for channels 0 - 3		**PS 416-AIN-400**	See Price List See Price List
4 analog inputs + 4 analog outputs, 12 bit resolution 0 - 20 mA, 4 - 20 mA, ±5 V, 0 - 5 V, ±10 V, 0 - 10 V		**PS 416-AIO-400**	See Price List See Price List
Network cards			
Suconet-K card for use with PS 416-CPU-200/300/400 Can be configured as a remote I/O expansion rack interface, as a Suconet-K master controlling up to 30 slave devices or as a Suconet-K intelligent slave		**PS 416-NET-400**	See Price List See Price List
InterBus-S network card for the PS 416 100% conformance to InterBus-S		**PS 416-NET-220**	See Price List See Price List
PROFIBUS FMS network card for the PS 416 Full conformance to DIN 19 245, part 1 and 2		**PS 416-NET-230**	See Price List See Price List
Programming software for the PS 416-CPU-400			
Programming software to IEC 1131-3 Contains ladder diagram, instruction list and function block programming languages for the **PS 416-CPU-200/300/400** - 1 CD ROM - 1 set of documentation in English Requires MS Windows 3.1 or higher		**S 40-GB-CD**	See Price List See Price List
S 30-xxx and S 4 upgrade package to S 40 software for programming of **PS 4-141-MM1**, **PS 4-151-MM1** or **PS 4-201-MM1** Requires the original diskettes of **S 30-S 3**, **S 30-S 316**, **S 30-S 32**, **S 30-S 4-200**, **S 30-S 4**, **S 4**, software - 1 CD ROM - 1 set of documentation (Requires MS Windows 3.1 or higher)		**S 40-GB-U-CD**	See Price List See Price List
Programming cable for connecting the PS 416-CPU-200/300/400 to the PC's RS 232 serial I/O port		**PS 416-ZBK-210**	See Price List See Price List

1	2	3	4
		Type	**Price** $
RMQ 16-I interface Eight actuators and indicators, equipped with PCB adapter for direct mounting of **E01**/**E10** contact elements and lamp socket. System-capable electronics module for coupling to PLC via Suconet-K1 field bus. Maximum configuration: 14 contact elements (input) 8 filament bulbs or LEDs (output) **ILP 1** for mounting in 18, KI8 surface mounting enclosures		**ILP 1**	See Price List
ELP 1 for mounting in **E8**, **E8-SW**, **KE8**, **KE8-SW** flush mounting panels		**ELP 1**	See Price List

RMQ 16-I Network control circuit device unit

- Saves installation material, time and fitting costs
- Reduces wiring errors
- **RMQ 16-I** replaces the remote I/O device
- PLC inputs and outputs can be used for other applications
- Actuators can be "wired up" using the PLC program
- System configuration can easily be changed
- IP 65 degree of protection

The product range of Control Device is described in detail in Section 3.



Technical Data: RMQ 16-I interface		ELP 1, ILP 1
General		
Standards		IEC 1131, EN 55 011, EN 55 022
Mounting form		Flush mounting panel, surface mounting enclosure
Mounting position		As required
Weight	kg	0.25, 0.13
Operating temperature	min./max. °C	-25/+55, -25/+40
Storage temperature	min./max. °C	-25/+70
Power supply		
V_{min} - V_{typ} - V_{max}	VDC	18-24-30
Current consumption with V_{typ} I_N	mA	400 (when fitted with max. eight filament bulbs)
Max. inrush current	xI_N	5
Additional features		Protected against polarity reversal, overvoltage-proof
Configuration		
Inputs		14
Outputs		8
Output voltage for lights	V	24
Output power per location	W	1, 100 % DF
Method of communication		
Bus protocol		Suconet K1
Interface		RS 485, isolated
Data transmission rate	Kbit/s	187.5
Max. length of bus	m	600 (without repeater)
Additional features		Adjustable slave address Bus terminating resistor can be switched
Cable		Screened, twisted pair cable
Cable type reference		

1	2					3				4			5	6
	Display					Operator Interface				Interface			Type	Price
	LCD Monochrome	LCD Color	Lines of Text	Characters / Line	Resolution (pixels)	Touch Screen	Cursor Keys	# of Function Keys	Numeric Key Pad	Suconet K	SUCOM A	PRINTER		$
Text Operator Panel														
	✔		2	20			✔	4			✔		MI 4-100-KC1	See Price List
	✔		2	20			✔	4		✔	✔		MI 4-101-KC1	See Price List
	✔		2	20			✔	9[1]	✔[1]		✔		MI 4-100-KE1	See Price List
	✔		2	20			✔	9[1]	✔[1]	✔	✔		MI 4-101-KE1	See Price List
	✔		4	20			✔	9[1]	✔[1]		✔	✔	MI 4-110-KE1	See Price List
	✔		4	20			✔	9[1]	✔[1]	✔	✔	✔	MI 4-111-KE1	See Price List
	✔		4	40			✔	16	✔		✔	✔	MI 4-130-KH1	See Price List
	✔		4	40			✔	16	✔	✔	✔	✔	MI 4-131-KH1	See Price List
Graphic Operator Panel														
	✔		16	40	320 x 240		✔	14	✔	✔	✔	✔	MI 4-151-KF1	See Price List
		✔	16	40	320 x 240		✔	14	✔	✔	✔	✔	MI 4-451-KF1	See Price List
Touch Panel														
	✔		16	40	320 x 240	✔				✔	✔	✔	MI 4-151-TA1	See Price List
		✔	16	40	320 x 240	✔				✔	✔	✔	MI 4-451-TA1	See Price List
	✔		25	80	640 x 400	✔	✔	2		✔	✔	✔	MI 4-161-TC1	See Price List
		✔	30	80	640 x 480	✔	✔	2		✔	✔	✔	MI 4-471-TC1	See Price List

1) Keys can be used as numeric and function keys.

1	2	3
	Type	**Price** $
MI 4 Configuration Software		
Windows based configuration software for all **MI 4** displays. For generating text messages, set points, alarms graphics and defining function keys. Requires Windows 3.1 or Windows 95 operating systems. Includes documentation, supplied on 3.5 inch 1.44 MB disks.	**MI 4-CFG-1-GB**	See Price List
MI 4 Cables		
MI 4 to PC serial I/O port programming cable Length: 2 meters	**ZB 4-24A-KP1**	See Price List
PS 306 to **MI 4** cable for Sucom A (RS 485) Length: 2 meters	**ZB4-2B1-KB1**	See Price List
PS 416 to **MI 4** cable for Sucom A (RS 232) Length: 2 meters	**ZB 4-2B3-KB1**	See Price List
PS 416 or **PS 316** to **MI 4** cable for Sucom A (RS 485) Length: 2 meters	**ZB 4-2B3-KB2**	See Price List
PS 4-150 or **PS 4-201** to **MI 4** cable for Sucom A (RS 232) Length: 2 meters	**ZB 4-2B3-KB1**	See Price List
PS 4-150, **PS 4-201**, **PS 306** to **MI 4** cable for Suconet K Length: 2 meters	**ZB 4-231-KB1**	See Price List
PS 416 or **PS 316** to **MI 4** cable for Suconet K Length: 2 meters	**ZB 4-233-KB2**	See Price List

1	2	3	4
		Type	**Price** $
AS-Interface slave modules			
AS-interface slave module, 4 inputs Inputs: 24 V DC, 100 mA PNP Connection by M 12 sockets Requires **ZB 2-155-UT1** coupling module (FK)		**EM 2-105-DX1**	See Price List
AS-interface slave module, 2 inputs / 2 outputs Inputs: 24 V DC, 100 mA PNP Outputs: 24 V DC, 2 A Connection by M 12 sockets Output control voltage supplied by **ZB 2-105-UT1** Requires **ZB 2-105-UT1** coupling module (FK-E)		**EM 2-105-DD1**	See Price List
AS-interface slave module, 4 outputs Outputs: 24 V DC, 2 A Connection by M 12 sockets Output control voltage supplied by **ZB 2-105-UT1** Requires **ZB 2-105-UT1** coupling module (FK-E)		**EM 2-105-XD1**	See Price List
AS-interface slave module, 4 way terminal block (passive) For connection of AS-i sensors and actuators Connection by M 12 sockets Requires **ZB 2-155-UT1** coupling module (FK)		**ZB 2-104-VT1**	See Price List
AS-interface coupling module (FK) For connection of 2 AS-interface cables (yellow) Connection by insulation displacement		**ZB 2-155-UT1**	See Price List
AS-interface coupling module (FK-E) For connection of 1 AS-interface cable (yellow) and 1 AS-interface 24 V DC power cable (black) Connection by insulation displacement		**ZB 2-105-UT1**	See Price List
AS-interface for the bus connection of **RMQ** control circuit devices For front fitting and direct fixing of **RMQ 22** illuminated front elements External connections: 3 inputs / 3 outputs Internal connections: 1 input / 1 output	Red Yellow Green 	**RMQ-M1-RT-ASI** **RMQ-M1-GE-ASI** **RMQ-M1-GN-ASI**	See Price List
For surface mounting enclosures **RMQ 22**: I 3M, I 4M, I 5M **RMQ 16**: I 8 External connections: 4 inputs / 4 outputs (for **RMQ** contact and lamp socket elements)		**RMQ-M1C-ASI** **RMQ-M2C-ASI**	See Price List
Front elements must be ordered separately, for details on control circuit devices see section **3**			See Price List

1	2	3	4
		Type	**Price** $
AS-interface Master			
Suconet K Gateway to AS-interface master LED indication of operating modes, power supply and the operating status of the Suconet K interface LCD display for operational status and errors 2 setting buttons for the operating mode and suconet K addressing Power supply: from AS-interface power supply AS-interface connection by screw terminals Suconet K connection by **PS 416-ZBS-410** connector		**CM 4-505-GS1**	See Price List
AS-interface power supply Regulated AS-i power supply with data de-coupling Output: 30 V DC, 2.4 A Input: 230 V AC, 50/60 Hz		**SN 4-024-DA7**	See Price List
AS-interface flat cable Yellow, with profile, 2 x 1.5 mm² For connection of coupling modules FK and FK-E Standard reel is 100m		**ZB 2-155-KB1**	See Price List
AS-interface power cable Black, with profile, 2 x 1.5 mm² For external 24 V DC control voltage For connection of coupling module FK-E Standard reel is 100m		**ZB 2-105-KB1**	See Price List
AS-interface cover For coupling module FK		**ZB 2-100-DK1**	See Price List
AS-interface sealing cap For covering unused M 12 sockets on AS-interface slave modules		**ZB 2-100-VK1**	See Price List
AS-interface M 12 link Link between AS-interface profile cable and M 12 socket Connection by insulation displacement		**ZB 2-100-AZ1**	See Price List
Suconet K connector 9 pin sub D connector, right angle For connection of Suconet k to CM 4-505-GS1		**PS 416-ZBS-410**	See Price List
M 12 plug 4 pin, screw terminals, straight Cable connection: PG 7, 6.8 mm max. diameter 4 - 6 mm cables up to 0.75 mm² (AWG 18)		**ZB 2-104-DS1**	See Price List
M 12 plug 4 pin, screw terminals, right angled Cable connection: PG 7, 6.8 mm max. diameter 4 - 6 mm cables up to 0.75 mm² (AWG 18)		**ZB 2-104-DS3**	See Price List

General	EASY 412-AC-R	EASY 412-AC-RC	EASY 412-DC-R	EASY 412-DC-RC
Temperature				
Operating	0 to + 55 °C	0 to + 55 °C	0 to + 55 °C	0 to + 55 °C
Storage	- 20 to + 70 °C	- 20 to + 70 °C	- 20 to + 70 °C	- 20 to + 70 °C
Shock resistance	15 g, 11 msec.	15 g, 11 msec.	15 g, 11 msec.	15 g, 11 msec.
Vibration, constant 1 g	2 g, 57 - 150 Hz	2 g, 57 - 150 Hz	2 g, 57 - 150 Hz	2 g, 57 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2	EN 61 000-4-2	EN 61 000-4-2	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4	EN 61 000-4-4	EN 61 000-4-4	EN 61 000-4-4
Protection class	IP 20	IP 20	IP 20	IP 20
Rated isolation voltage	1500 V AC	1500 V AC	600 V AC	600 V AC
Mounting environment	Dry and dust free	Dry and dust free	Dry and dust free	Dry and dust free
Weight	0.45 lb (200 gr.)	0.45 lb (200 gr.)	0.45 lb (200 gr.)	0.45 lb (200 gr.)
Approvals	CE, CSA, UL	CE, CSA, UL	CE, CSA, UL	CE, CSA, UL
Voltage Supply				
Main input voltage				
Rated value	115 V AC, 230 V AC	115 V AC, 230 V AC	+ 24 V DC	+ 24 V DC
Min./Max. range	97 V AC - 264 V AC	97 V AC - 264 V AC	+ 20.4 / +28.8 V DC	+ 20.4 / +28.8 V DC
Residual ripple	—	-	< 5.0 % max.	< 5.0 % max.
Frequency	47 - 63 Hz	47 - 63 Hz	-	-
Reverse voltage protection	—	-	Yes	Yes
Main input current (typ.)	40 mA @ 115 V AC 60 Hz 20 mA @ 230 V AC 50 Hz	40 mA @ 115 V AC 60 Hz 20 mA @ 230 V AC 50 Hz	80 mA @ + 24 V DC	80 mA @ + 24 V DC
Power dissipation (typ.)	3.0 W @ 115 V AC 3.5 W @ 230 V AC	3.0 W @ 115 V AC 3.5 W @ 230 V AC	2.0 W @ + 24 V DC	2.0 W @ + 24 V DC
Voltage bridging	20.0 msec.	20.0 msec.	20.0 msec.	20.0 msec.
Connection terminals				
Type	Screw clamp	Screw clamp	Screw clamp	Screw clamp
Wire size	20 - 14 AWG	20 - 14 AWG	20 - 14 AWG	20 - 14 AWG
Processing Unit				
Program memory	120 contacts	120 contacts	120 contacts	120 contacts
Programming language	Ladder diagram	Ladder diagram	Ladder diagram	Ladder diagram
Programming interface				
Built-in (standard)	cursor + function keys 4 line LCD display	cursor + function keys 4 line LCD display	cursor + function keys 4 line LCD display	cursor + function keys 4 line LCD display
Optional	Windows based LD	Windows based LD	Windows based LD	Windows based LD
Cycle time / 120 contacts	10.0 msec.	10.0 msec.	10.0 msec.	10.0 msec.
Real time clock	No	Yes	No	Yes
Real time clock backup	—	24 hours typical	—	24 hours typical
Accuracy of real time clock	—	5.0 sec. / day	—	5.0 sec. / day
Digital Inputs				
Number of inputs	8	8	8 or 6 with 2 analog	8 or 6 with 2 analog
Input voltage: Rated value	120 / 230 V AC	120 / 230 V AC	+ 24 V DC	+ 24 V DC
Frequency	50 / 60 Hz	50 / 60 Hz	—	—
Logic "0"	< 40 V AC	< 40 V AC	< + 5 V DC	< + 5 V DC
Logic "1"	> 79 V AC	> 79 V AC	> + 15 V DC	> + 15 V DC
Input current: I1 to I6	0.25 mA @ 120 V AC 0.50 mA @ 230 V AC	0.25 mA @ 120 V AC 0.50 mA @ 230 V AC	3.2 mA @ + 24 V DC	3.2 mA @ + 24 V DC
I7 to I8	4.0 mA @ 120 V AC 6.0 mA @ 230 V AC	4.0 mA @ 120 V AC 6.0 mA @ 230 V AC	2.2 mA @ + 24 V DC	2.2 mA @ + 24 V DC
On delay time, I1 to I8				
Debounce filter On	66.33 msec. (60 Hz)	66.33 msec. (60 Hz)	20.0 msec.	20.0 msec.
Debounce filter Off	16.33 msec. (60 Hz)	16.33 msec. (60 Hz)	0.25 msec.	0.25 msec.
Off delay time, I1 to I6				
Debounce filter On	66.33 msec. (60 Hz)	66.33 msec. (60 Hz)	20.0 msec.	20.0 msec.
Debounce filter Off	16.33 msec. (60 Hz)	16.33 msec. (60 Hz)	0.40 msec.	0.40 msec.
Off delay time, I7 to I8				
Debounce filter On	150.0 msec. (60 Hz)	150.0 msec. (60 Hz)	20.0 msec.	20.0 msec.
Debounce filter Off	100.0 msec. (60 Hz)	100.0 msec. (60 Hz)	0.20 msec.	0.20 msec.
Input to input isolation	No	No	No	No
Analog Inputs, I7, I8				
Number of inputs	Not available	Not available	2	2
Input voltage range	—	—	0 to + 10 VDC @ 1.0 mA	0 to + 10 V DC @ 1.0 mA
Resolution	—	—	0.1 V	0.1 V
Accuracy within a device	—	—	+/- 2 % of actual value	+/- 2 % of actual value
Digital Outputs				
Number of outputs	4	4	4	4
Output circuit design	Relay	Relay	Relay	Relay
Output to output isolation	Yes	Yes	Yes	Yes
Switching frequency (mech.)	10 Hz	10 Hz	10 Hz	10 Hz
Service life (mechanically)	10 million	10 million	10 million	10 million
Breaking current				
Resistive load	8 A T @ 230 V AC	8 A T @ 230 V AC	8 A T @ 230 V AC	8 A T @ 230 V AC
Inductive load (AC15)	3 A @ 250 V AC, 600 S/h	3 A @ 250 V AC, 600 S/h	3 A @ 250 V AC, 600 S/h	3 A @ 250 V AC, 600 S/h
(DC13)	1 A @ +24 V DC, 500 S/h	1 A @ +24 V DC, 500 S/h	1 A @ +24 V DC, 500 S/h	1 A @ +24 V DC, 500 S/h

General	PS 4-111-DR1/DR5	PS 4-101-DD1
Temperature		
Operating	0 to + 55 / - 25 to + 55 ˚C	0 to + 55 ˚C
Storage	- 20 to + 70 ˚C / -25 to +70 ˚C	- 20 to + 70 ˚C
Shock resistance	15 g, 11 msec	15 g, 11 msec
Vibration, constant 1 g	f = 0 - 150 Hz	f = 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4	EN 61 000-4-4
Protection class	IP 20	IP 20
Rated isolation voltage	1500 V AC	600 V AC
Weight	1.1 lb. (500 gr.)	1.0 lb. (455 gr.)
Approvals	CE, CSA, UL	CE, CSA, UL
Voltage Supply		
Main input voltage		
Rated value	115 V AC, 230 V AC	+ 24 V DC
Min/Max range	98 V AC - 264 V AC	+ 18/+ 30 V DC
Residual ripple	-	5.0 % max.
Frequency	47 - 63 Hz	-
Reverse voltage protection	-	Yes
Main input current		
Rated value	80 mA	200 mA
Inrush value	<12 A at 253 V AC	3.0 A for < 5 msec
Power consumption	8.5W approx.	5W approx.
Voltage bridging		
Duration of sag	10.0 msec	10.0 msec.
Repetition rate	1.0 sec.	1.0 sec.
Fault indication	Yes	Yes
Potential isolation	Yes	Yes
Tested isolation voltage	1500 V AC	600 V AC
Power connection terminals		
Type	Screw clamp	Screw clamp
Wire size	20 - 14 AWG	20 - 14 AWG
Special Function		
High Speed Counter	I Ø.Ø	I Ø.Ø
Number per unit	1	1
Input values	24 V DC at 6 mA	24 V DC at 6 mA
Input frequency	3 kHz max.	3 kHz max.
Waveform shape	Square, 50% duty	Square, 50% duty
Adjustable Set-points	IA Ø.Ø, IA Ø.1	IA Ø.Ø, IA Ø.1
Number per unit	2	2
Range values	0 - 255	0 - 255
Digital Inputs		
Number of inputs	8	
Input circuit design	Sinking	Sinking
Input voltage		
Rated value	+ 24 V DC	+ 24 V DC
Ripple, maximum	5.0 %	5.0 %
Logic “0”	< + 5 V DC	< + 5 V DC
Logic “1”	> + 15 V DC	> + 15 V DC
Input current	6 mA @ 24 V DC	6 mA @ 24 V DC
Input delay time	55 msec, typ.	55 msec, typ.
Potential isolation	Yes	Yes
Input to input isolation	No	No
Power supply for inputs	+ 24 V DC at 50 mA	User supplied
Status display	LED, green	LED, green
Terminals, plug-in connector	Screw clamp	Screw clamp
Cable length		
Unscreened	1300 ft. (400m)	1300 ft (400m)
Screened	3248 ft (1000 m)	3248 ft (1000 m)

Processing Unit	PS 4-100 Series
Program memory	
Size	1K instructions
Type	EEPROM
Cycle time / 1K instructions	<5.0 msec
Math (byte only)	4 function
Battery	not required
Real time clock	No
Markers	
Retentive (EEPROM)	128
Total	576
Network Interface	
Type	Suconet-K1
Transfer rate	187.5 K baud
Data interface	RS 485
Transmission media	twisted pair, shld.
Data cable length	2000 ft (600m)
Maximum slaves/co-processors	3

Digital Outputs	PS 4-111-DR1/DR5
Number of outputs	6
Output circuit design	Relay
Contact configuration	Normally Open
Contact material	AgNi
Potential isolation	Yes, in groups
(2 groups of 2 common connected)	
Utilization factor (g)	1
Operating time ED	100%
Response time	10 msec. (max)
Release time	15 msec. (max)
Service life (mechanically)	20 million
Breaking current	
Resistive load	2A @ 230 V AC 2A @ +24 V DC
Inductive load	1A @ 230 V AC 1A @ +24 V DC
Contact protection circuit	None
Minimum contact voltage	> 12 V
Minimum contact current	> 100 mA
Status display	LED, green
Terminals, plug-in connector	Screw clamp

Digital Outputs	PS 4-101-DD1
Number of outputs	6
Output circuit design	Sourcing transistor
Potential isolation	Yes
Short circuit protection	Yes, auto. reset
Short circuit tripping current	1.2 A over 3 msec
Output current, logic “1”	
Rated value at +24 V DC	0.5 A DC
Lamp load, with series resistor	4.0 W
Power supply for outputs	
Reverse voltage protection	Yes
Rated value	+24 V DC
Min/Max range	+18/+30 V DC
Maximum ripple	£ 5.0 %
Paralleled outputs	
Maximum number	4
Maximum current	2.0 A DC
Minimum current	250 mA
Residual current, logic “0”	140 mA max.
Output delay, off	50 msec, typ.
Switch frequency per hour	
Time constant t ≤ 72 msec	4800 sw./ hour
Time constant t ≤ 15 msec	18000 sw./ hour
Status display	LED, green
Terminals, plug-in connector	Screw clamp
Cable length	
Unscreened	1300 ft (400m)
Screened	3248 ft (1000m)

General	PS 4-141-MM1	PS 4-151-MM1	PS 4-201-MM1
Temperature			
Operating	0 to + 55 ˚C	0 to + 55 ˚C	0 to + 55 ˚C
Storage	- 20 to + 70 ˚C	- 20 to + 70 ˚C	- 20 to + 70 ˚C
Shock resistance	15 g, 11 msec.	15 g, 11 msec.	15 g, 11 msec.
Vibration, constant 1 g	1 g, 0 - 150 Hz	1 g, 0 - 150 Hz	1 g, 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2	EN 61 000-4-2	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4	EN 61 000-4-4	EN 61 000-4-4
Protection class	IP 20	IP 20	IP 20
Rated isolation voltage	600 V AC	1500 V AC	600 V AC
Mounting environment	Dry and dust free	Dry and dust free	Dry and dust free
Weight	1.6 lb (700 gr.)	1.6 lb (700 gr.)	1.2 lb (540 gr.)
Approvals	CE, CSA, UL	CE, CSA, UL	CE, CSA, UL
Voltage Supply			
Main input voltage			
Rated value	+ 24 V DC	115 V AC, 230 V AC	+ 24 V DC
Min./Max. range	+ 18 / + 30 V DC	98 V AC - 264 V AC	+ 18 / + 30 V DC
Residual ripple	< 5.0 % max.	< 5.0 % max.	< 5.0 % max.
Frequency	—	47 - 63 Hz	-
Reverse voltage protection	Yes	—	Yes
Main input current			
Rated value without LE's	300 mA	150 mA	250 mA
Rated value with LE's	—	—	250 mA + 30 mA/LE
inrush value	4.0 A for < 5 msec.	12.0 A 230 V AC	4.0 A for < 5 msec.
Power consumption	6.5 W approx.	12 W approx.	6 W approx.
Voltage bridging			
Duration of sag	10.0 msec.	10.0 msec.	10.0 msec.
Repetition rate	1.0 sec.	1.0 sec.	1.0 sec.
Fault indication	LED	LED	LED
Potential isolation	Yes	Yes	Yes
Tested isolation voltage	600 V AC	600 V AC	600 V AC
Power connection terminals			
Type	Screw clamp	Screw clamp	Screw clamp
Wire size	20 - 14 AWG	20 - 14 AWG	20 - 14 AWG
Network Interface			
Type	Suconet-K	Suconet-K	Suconet-K
Transfer rate	187.5 / 375 K baud	187.5 / 375 K baud	187.5 / 375 K baud
Data interface	**RS 485**	**RS 485**	**RS 485**
Transmission media	Twisted pair, shield.	Twisted pair, shield.	Twisted pair, shield.
Data cable length	2000 / 1000 ft. (600 / 300 m)	2000 / 1000 ft. (600 / 300 m)	2000 / 1000 ft. (600 / 300 m)
Operating mode	Master / Slave	Master / Slave	Master / Slave
Maximum stations	8	8	8
Processing Unit			
RAM program memory			
Standard internal RAM	24 K byte	24 K byte	24 K byte
With optional plug-in RAM	56 K byte (max.)	56 K byte (max.)	56 K byte (max.)
RAM data memory	8 K byte (min.)	8 K byte (min.)	8 K byte (min.)
RAM memory backup	Battery	Battery	Battery
Battery life	5 years, typical	5 years, typical	5 years, typical
Flash memory			
Optional plug-in memory for program backup and recipes / subprograms	128 K byte	128 K byte	128 K byte
Programming interface	**RS 232,** 9600	**RS 232,** 9600	**RS 232,** 9600
Cycle time / 1K instructions	5.0 msec.	5.0 msec.	5.0 msec.
Math (byte / word)	4 function	4 function	4 function
Real time clock	Yes	Yes	Yes
Accuracy of real time clock (battery backed)	6.1 min. / year	6.1 min. / year	6.1 min. / year
Max. local digital inputs	16	16	104 (with 6 **LE 4-116-DX1's)**
Max. local digital outputs	14	8	102 (with 6 **LE 4-116-XD1's)**
Special Function			
High speed counter	I Ø.Ø	I Ø.Ø	I Ø.Ø
Number per unit	1	1	1
Input values	24 V DC at 6 mA	24 V DC at 6 mA	24 V DC at 6 mA
Input frequency	3 kHz (max.)	3 kHz (max.)	3 kHz (max.)
Waveform shape	Square, 50% duty	Square, 50% duty	Square, 50% duty
Interrupt input	I Ø.1	I Ø.1	I Ø.1
Adjustable set points	IA I Ø.Ø, IA I Ø.1	IA I Ø.Ø, IA I Ø.1	IA I Ø.Ø, IA I Ø.1
Number per unit	2	2	2
Range values	0 - 1023	0 - 1023	0 - 1023

Inputs	PS 4-141-MM1	PS 4-151-MM1	PS 4-201-MM1
Digital			
Number of inputs	16	16	8
Input circuit design	Sinking	Sinking	Sinking
Input voltage			
Rated value	+ 24 V DC	+ 24 V DC	+ 24 V DC
Ripple, maximum	≤ 5.0 %	≤ 5.0 %	≤ 5.0 %
Logic "0"	< + 5 V DC	< + 5 V DC	< + 5 V DC
Logic "1"	> + 15 V DC	> + 15 V DC	> + 15 V DC
Input current	6 mA @ 24 V DC	6 mA @ 24 V DC	6 mA @ 24 V DC
Input delay time	100 µsec. typical	100 µsec. typical	100 µsec. typical
Potential isolation	Yes	Yes	Yes
Input to input isolation	No	No	No
Power supply for inputs	User supplied	+ 24 V DC at 50 mA	User supplied
Status display	LED, green	LED, green	LED, green
Terminals, plug-in connector	Screw clamp	Screw clamp	Screw clamp
Cable length			
Unscreened	1300 ft. (400 m)	1300 ft. (400 m)	1300 ft. (400 m)
Screened	3248 ft. (1000 m)	3248 ft. (1000 m)	3248 ft. (1000 m)
Analog			
Number of inputs	2	2	2
Input voltage range	0 - + 10 V DC	0 - + 10 V DC	0 - + 10 V DC
Resolution	10 bit (0 - 1023)	10 bit (0 - 1023)	10 bit (0 - 1023)
Accuracy, full scale	0.4% (max.)	0.4% (max.)	0.4% (max.)
Terminals, plug-in connector	Screw clamp	Screw clamp	Screw clamp
Cable length, screened	154 ft. (50 m)	154 ft. (50 m)	154 ft. (50 m)
Outputs			
Digital			
Number of outputs	14	8	6
Output circuit design	Sourcing transistor	Relay	Sourcing transistor
Output current, logic "1"			
Rated value at + 24 V DC	0.5 A DC		0.5 A DC
Lamp load, with series resistor	4.0 W		4.0 W
Power supply for outputs			
Reverse voltage protection	Yes		Yes
Rated value	+ 24 V DC		+ 24 V DC
Min./Max. range	+ 18 / + 30 V DC		+ 18 / + 30 V DC
Maximum ripple	≤ 5.0 %		≤ 5.0 %
Paralleled outputs			
Maximum number	4		4
Maximum current	2.0 A DC		2.0 A DC
Minimum current	250 mA		250 mA
Residual current, logic "0"	140 µA max.		140 µA max.
Output delay, off	100 µsec. typical		100 µsec. typical
Short circuit protection	Yes, auto. reset	No	Yes, auto. reset
Short circuit tripping current	2.5 A over 3 msec.		1.2 A over 3 msec.
Switch frequency per hour			
Time constant t ≤ 72 msec	4800 sw./ hour		4800 sw./ hour
Time constant t ≤ 15 msec	18000 sw./ hour		18000 sw./ hour
Utilization factor (g)	1	1	1
Potential isolation	Yes	Yes, in groups	Yes
Status display	LED, green	LED, green	LED, green
Terminals, plug-in connector	Screw clamp	Screw clamp	Screw clamp
Cable length			
Unscreened	1300 ft. (400 m)	1300 ft. (400 m)	1300 ft. (400 m)
Screened	3248 ft. (1000 m)	3248 ft. (1000 m)	3248 ft. (1000 m)
Contact configuration		N.O.	
Operating time ED		100 %	
Response time		10 msec. (max.)	
Release time		15 msec. (max.)	
Service life (mechanically)		20 million	
Breaking current			
Resistive load		2 A @ 230 V AC 2 A @ + 24 V DC	
Inductive load (AC11) (DC11)		1 A @ 230 V AC 1 A @ + 24 V DC	
Contact protection circuit		None	
Minimum contact voltage		> 12 V	
Minimum contact current		> 100 mA	
Analog			
Number of outputs	1	1	1
Output voltage range	0 to +10 V DC	0 to +10 V DC	0 to + 10 V DC
Output current (max.)	2 mA	2 mA	2 mA
Resolution	12 bit (0 - 4095)	12 bit (0 - 4095)	12 bit (0 - 4095)
Accuracy, full scale	0.4% (max.)	0.4% (max.)	0.4% (max.)
Terminals, plug-in connector	Screw clamp	Screw clamp	Screw clamp
Cable length, screened	154 ft. (50 m)	154 ft. (50 m)	154 ft. (50 m)

General	EM 4-101-DD2	EM 4-111-DR2	EM 4-201-DX2
Temperature			
Operating	0 to + 55 ˚C	0 to + 55 ˚C	0 to + 55 ˚C
Storage	- 20 to + 70 ˚C	- 20 to + 70 ˚C	- 20 to + 70 ˚C
Shock resistance	15 g, 11 msec.	15 g, 11 msec.	15 g, 11 msec.
Vibration, constant 1 g	f = 0 - 150 Hz	f = 0 - 150 Hz	f = 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2	EN 61 000-4-2	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4	EN 61 000-4-4	EN 61 000-4-4
Protection class	IP 20	IP 20	IP 20
Rated isolation voltage			
per IEC 1131 part 2	600 V AC	1500 V AC	600 V AC
Mounting environment	Dry and dust free	Dry and dust free	Dry and dust free
Terminals, plug-in connector	Screw clamp	Screw clamp	Screw clamp
Weight	1.0 lb. (455 gr.)	1.2 lb (500 gr.)	1.0 lb (455 gr.)
Approvals	CE, CSA, UL	CE, CSA, UL	CE, CSA, UL
Voltage Supply			
Main input voltage			
Rated value	+ 24 V DC	115 V AC, 230 V AC	+ 24 V DC
Min./Max. range	+ 20.4 / + 28.8 V DC	98 V AC - 264 V AC	+ 20.4 / + 28.8 V DC
Residual ripple	< 5.0 % max.		< 5.0 % max.
Frequency		47 - 63 Hz	
Reverse voltage protection	Yes		Yes
Main input current			
EM 4-100 series	100 mA	40 mA	
EM 4-200 series			250 mA +30 mA/LE
inrush value	3 A < 3 ms	12 A at 253 V AC	10.0 A < 1.3 ms
Power consumption	5 W approx.	9 W approx.	7 W approx.
Power dissipation (total unit)	5 W approx.	9 W approx.	7 W approx.
Voltage bridging			
Duration of sag	10.0 msec.	10.0 msec.	10.0 msec.
Repetition rate	1.0 sec.	1.0 sec.	1.0 sec.
Fault indication	LED	LED	LED
Potential isolation	Yes	Yes	Yes
Tested isolation voltage			
per IEC 1131 part 2	600 V AC	1500 V AC	600 V AC
Power connection terminals			
Type	Screw clamp	Screw clamp	Screw clamp
Wire size	20 - 14 AWG	20 - 14 AWG	20 - 14 AWG
Network Interface			
Type	Suconet-K1/K	Suconet-K1/K	Suconet-K1 / K
Transfer rate	187.5 K baud	187.5 K baud	187.5 / 375 K baud
Data interface	**RS 485**	**RS 485**	**RS 485**
Transmission media	Twisted pair, shield.	Twisted pair, shield.	Twisted pair, shield.
Data cable length	2000 ft. (600 m)	2000 ft. (600 m)	2000 / 1000 ft. (600 / 300 m)
Operating mode	Slave	Slave	Slave
Station address	1 to 30	1 to 30	1 to 30
Digital Inputs			
Number of inputs	8 or 10 (user configured)	8	16
Input circuit design	Sinking	Sinking	Sinking
Input voltage			
Rated value	+ 24 V DC	+ 24 V DC	+24 V DC
Ripple, maximum	≤ 5.0 %	≤ 5.0 %	≤ 5.0 %
Logic "0"	< + 5 V DC	< + 5 V DC	< + 5 V DC
Logic "1"	> + 15 V DC	> + 15 V DC	> + 15 V DC
Input current	6 mA @ 24 V DC	6 mA @ 24 V DC	6 mA @ 24 V DC
Input delay time	0.2 msec. typical	0.2 msec. typical	0.2 msec. typical
Potential isolation	Yes	Yes	Yes
Input to input isolation	No	No	No
Status display	LED, green	LED, green	LED, green
Terminals, plug-in connector	Screw clamp	Screw clamp	Screw clamp
Cable length			
Unscreened	1300 ft. (400 M)	1300 ft. (400 M)	1300 ft. (400 M)
Screened	3248 ft. (1000 M)	3248 ft. (1000 M)	3248 ft. (1000 M)

Digital Outputs	EM 4-101-DD2	EM 4-111-DR2	EM 4-201-DX2
Number of outputs	8 or 6 (user configured)	8	0, use **LE 4** modules for outputs
Output circuit design	Sourcing transistor	Relay	
Output current, logic "1"			
Rated value at + 24 V DC	0.5 A DC		
Lamp load, with series resistor	4.0 W		
Power supply for outputs			
Reverse voltage protection	Yes		
Rated value	+ 24 V DC		
Min./Max. range	+ 18 / + 30 V DC		
Maximum ripple	≤ 5.0 %		
Residual current, logic "0"	140 µA max.		
Output delay, off	0.2 msec. typical		
Short circuit protection	Yes, auto. reset	No	
Short circuit tripping current	1.2 A over 3 msec.		
Switch frequency per hour			
Time constant t ≤ 72 msec	4000 sw./ hour		
Time constant t ≤ 15 msec	10000 sw./ hour		
Utilization factor (g)	1	1	
Potential isolation	Yes	Yes, in groups	
Output to output isolation	No		
Status display	LED, green	LED, green	
Terminals, plug-in connector	Screw clamp	Screw clamp	
Cable length			
Unscreened	1300 ft. (400 m)		
Screened	3248 ft. (1000 m)		
Contact configuration		N.O.	
Operating time ED		100 %	
Response time		10 msec. (max.)	
Release time		15 msec. (max.)	
Service life (mechanically)		20 million	
Breaking current			
Resistive load		2 A @ 230 V AC 2 A @ + 24 V DC	
Inductive load (AC11)		1 A @ 230 V AC	
(DC11)		1 A @ + 24 V DC	
Contact protection circuit		None	
Minimum contact voltage		> 12 V	
Minimum contact current		> 100 mA	

General	EM 4-101-AA2	EM 4-101-TX1
Temperature		
Operating	0 to + 55 ˚C	0 to + 55 ˚C
Storage	- 20 to + 70 ˚C	- 20 to + 70 ˚C
Shock resistance	15 g, 11 msec.	15 g, 11 msec.
Vibration, constant 1 g	f = 0 - 150 Hz	f = 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4	EN 61 000-4-4
Protection class	IP 20	IP 20
Rated isolation voltage		
per IEC 1131 part 2	600 V AC	600 V AC
Mounting environment	Dry and dust free	Dry and dust free
Terminals, plug-in connector	Screw clamp	Screw clamp
Weight	1.0 lb (455 gr.)	1.0 lb (440 gr.)
Approvals	CE, CSA, UL	CE, CSA, UL
Voltage Supply		
Main input voltage		
Rated value	+ 24 V DC	+ 24 V DC
Min./Max. range	+ 20.4 / +28.8 V DC	+ 20.4 / +28.8 V DC
Residual ripple	< 5.0 % max.	< 5.0 % max.
Reverse voltage protection	Yes	Yes
Main input current		
rated value	150 mA	150 mA
inrush value	5 A < 5 ms	5 A < 5 ms
Power consumption	3 W approx.	3 W approx.
Power dissipation (total unit)	3 W approx.	3 W approx.
Voltage bridging		
Duration of sag	10.0 msec.	10.0 msec.
Repetition rate	1.0 sec.	1.0 sec.
Fault indication	LED	LED
Potential isolation	Yes	Yes
Tested isolation voltage		
per IEC 1131 part 2	600 V AC	600 V AC
Power connection terminals		
Type	Screw clamp	Screw clamp
Wire size	20 - 14 AWG	20 - 14 AWG
Network Interface		
Type	Suconet-K1 / K	Suconet-K
Transfer rate	187.5 / 375 K baud	187.5 / 375 K baud
Data interface	RS 485	RS 485
Transmission media	Twisted pair, shield.	Twisted pair, shield.
Data cable length	2000 / 1000 ft. (600 / 300 m)	2000 / 1000 ft. (600 / 300 m)
Operating mode	Slave	Slave
Station address	1 to 30	1 to 30

Analog Inputs	EM 4-101-AA2	EM 4-111-TX1
Number of inputs	8 (max.)	2 (max.)
Input configuration (user configured)		
Suconet K master	4V/4I	2V
Suconet K1 master	4V/2I, 3V/3I, 2V/4I	not allowed
Input ranges (user configured)		
Voltage	0 - + 5 V DC	—
	0 - +10 V DC	0 - + 10 V DC
	± 5 V DC	—
	± 10 V DC	—
Current	0 - 20 mA	—
Resolution (user configured)		
	8 bit (0 - 255)	—
	12 bit (0 - 4095)	12 bit (0 - 4095)
Accuracy, full scale	0.4 % (max.)	0.5 % (max.)
Input resistance		
Voltage input	> 100 k Ohm	20 k Ohm
Current input	50 Ohm	-
Permissible input current (max.)	±30 mA	-
Permissible input voltage (max.)	± 15 V DC	20 V DC
Over-range error indication	Yes	Yes
Potential isolation	Yes	Yes
Input to input isolation	No	No
Terminals, plug-in connector	Screw clamp	Screw clamp
Cable length, screened	154 ft (50M)	154 ft (50M)
RTD Inputs		
Number of inputs		6 (max.)
Connection type		Three wire / two wire
Temperature range		
Pt 100		- 100 C to + 300 C
Ni 1000		- 50 C to + 150 C
Deviation		
Pt 100		± 0.4 % (max.)
Ni 1000		± 0.2 % (max.)
Linearity		
Pt 100		± 0.15 % (max.)
Ni 1000		± 0.1 % (max.)
Repetition accuracy		
Pt 100		± 0.3 % (max.)
Ni 1000		± 0.2 % (max.)
Error detection		Wire breakage
		Short-circuit
Input to input isolation		No
Terminals, plug-in connector		Screw clamp
Cable length, screened		154 ft (50M)
Analog Outputs		
Number of outputs	4 (max.)	
Output voltage ranges (user configured)	0 - +10 V DC	
	± 10 V DC	
Resolution (user configured)	8 bit (0 - 255)	
	12 bit (0 - 4095)	
Accuracy, full scale	0.4 % (max.)	
Load impedance per output	2 k Ohm	
Short circuit protection	Yes	
Short circuit current	± 32 mA	
Potential isolation	Yes	
Output to output isolation	No	
Terminals, plug-in connector	Screw clamp	
Cable length, screened	154 ft (50M)	

General	LE 4-116-DD1	LE 4-116-DX1	LE 4-108-XD1	LE 4-116-XD1	LE 4-108-XR1
Temperature					
Operating	0 to + 55 ˚C	0 to + 55 ˚C	0 to + 55 ˚C	0 to + 55 ˚C	0 to + 55 ˚C
Storage	- 20 to + 70 ˚C	- 20 to + 70 ˚C	- 20 to + 70 ˚C	- 20 to + 70 ˚C	- 20 to + 70 ˚C
Shock resistance	15 g, 11 msec.	15 g, 11 msec.	15 g, 11 msec.	15 g, 11 msec.	15 g, 11 msec.
Vibration, constant 1 g	f = 0 - 150 Hz	f = 0 - 150 Hz	f = 0 - 150 Hz	f = 0 - 150 Hz	f = 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2	EN 61 000-4-2	EN 61 000-4-2	EN 61 000-4-2	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4	EN 61 000-4-4	EN 61 000-4-4	EN 61 000-4-4	EN 61 000-4-4
Protection class	IP 20	IP 20	IP 20	IP 20	IP 20
Rated isolation voltage	—	—	—	—	1800 V AC
Mounting environment	Dry and dust free	Dry and dust free	Dry and dust free	Dry and dust free	Dry and dust free
Terminals, plug-in connector	Screw clamp	Screw clamp	Screw clamp	Screw clamp	Screw clamp
Weight	0.58 lb (265 gr.)	0.50 lb (230 gr.)	0.60 lb (275 gr.)	0.60 lb (275 gr.)	0.67 lb (305 gr.)
Voltage Supply					
Rated value	+ 24 V DC	+ 24 V DC	+ 24 V DC	+ 24 V DC	+ 24 V DC
Min./max. range	+ 20.4 / +28.8 V DC	+ 20.4 / +28.8 V DC	+ 20.4 / +28.8 V DC	+ 20.4 / +28.8 V DC	+ 20.4 / +28.8 V DC
Ripple, maximum	≤ 5.0 %	≤ 5.0 %	≤ 5.0 %	≤ 5.0 %	≤ 5.0 %
Reverse voltage protection	Yes	Yes	Yes	Yes	Yes
Supply current, maximum	100 mA	30 mA	160 mA	130 mA	120 mA
Digital Inputs					
Number of inputs	8	16	—	—	—
Input circuit design	Sinking	Sinking			
Input voltage					
Rated value	+ 24 V DC	+ 24 V DC			
Ripple maximum	5.0 %	5.0 %			
Logic "O"	< + 5 V DC	< + 5 V DC			
Logic "I"	> + 15 V DC	> + 15 V DC			
Input current	6 mA @ 24 V DC	6 mA @ 24 V DC			
Input delay time	0.2 msec. typ.	0.2 msec. typ.			
Potential isolation	Yes	Yes			
Input to input isolation	No	No			
Status display	LED, green	LED, green			
Cable length					
Unscreened	1300 ft. (400 M)	1300 ft. (400 M)			
Screened	3248 ft. (1000 M)	3248 ft. (1000 M)			
Digital Outputs					
Number of outputs	8	—	8	16	8
Output circuit design	Sourcing transistor	—	Sourcing transistor	Sourcing transistor	Relay
Output current, logic "1"					
Rated value at + 24 V DC	0.5 A DC	—	2.0 A DC	0.5 A DC	
Lamp load, with series resistor	4.0 W	—	4.0 W	4.0 W	
Utilization factor (g)	1	—	1	1	1
Residual current, logic "O"	140 µA max.	—	140 µA max.	140 µA max.	
Output delay, off	0.2 msec. typ.	—	0.2 msec. typ.	0.2 msec. typ.	
Short circuit protection	Yes, auto. reset	—	Yes, auto. reset	Yes, auto. reset	No
Short circuit tripping current	1.2 A over 3 msec.	—	1.2 A over 3 msec.	1.2 A over 3 msec.	
Switch frequency per hour		—			
Time constant t =	72 ms: 4000 sw./ h	—	300 ms: 360 sw./ h	72 ms: 3000 sw./ h	
Time constant t =			60 ms: 2500 sw./ h	15 ms: 10000 sw./ h	
Potential isolation	Yes	—	Yes	Yes	Yes, in 8 groups
Output to output isolation	No	—	No	No	Yes
Status display	LED, green	—	LED, green	LED, green	LED, green
Cable length					
Unscreened			1300 ft. (400 M)	1300 ft. (400 M)	
Screened			3248 ft. (1000 M)	3248 ft. (1000 M)	
Contact configuration					N.O.
Operating time ED					100 %
Response time					10 msec. (max.)
Release time					15 msec. (max.)
Service life (mechanically)					20 million
Breaking current					
Resistive load					2 A @ 230 V AC 2 A @ + 24 V DC
Inductive load (AC11)					1 A @ 230 V AC
(DC11)					1 A @ + 24 V DC
Contact protection circuit					None
Minimum contact voltage					> 12 V
Minimum contact current					> 100 mA

General	LE 4-308-HX1	LE 4-308-XH1	LE 4-104-XP1
Temperature			
Operating	0 to + 55 °C	0 to + 55 °C	0 to + 55 °C
Storage	- 25 to + 70 °C	- 25 to + 70 °C	- 25 to + 70 °C
Shock resistance	15 g, 11 msec.	15 g, 11 msec.	15 g, 11 msec.
Vibration, constant 1 g	f = 0 - 150 Hz	f = 0 - 150 Hz	f = 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2	EN 61 000-4-2	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4	EN 61 000-4-4	EN 61 000-4-4
Protection class	IP 20	IP 20	IP 20
Rated isolation voltage	1800 V AC	1800 V AC	600 V AC
Mounting environment	Dry and dust free	Dry and dust free	Dry and dust free
Terminals, plug-in connector	Screw clamp	Screw clamp	—
Weight	0.55 lb (250 gr.)	0.60 lb (275 gr.)	0.67 lb (305 gr.)
Voltage Supply			
Rated value	—	—	+ 24 V DC
Min./max. range	—	—	+ 21.6 / +26.4 V DC
Ripple, maximum	—	—	≤ 5.0 %
Reverse voltage protection	—	—	Yes
Supply current, maximum	—	—	100 mA
Digital Inputs			
Number of inputs	8	—	—
Input voltage			
Rated value	120 V AC	—	—
Frequency	47 - 63 Hz	—	—
Logic "O"	< 40 V AC	—	—
Logic "I"	> 79 V AC	—	—
Input current	6 mA @ 120 V AC	—	—
Input delay time			
On delay	10.0 msec. typ.	—	—
Off delay	30.0 msec. typ.	—	—
Input to input isolation	No	—	—
Status display	LED, green	—	—
Cable length			
Unscreened	1300 ft. (400 M)	—	—
Screened	1300 ft. (400 M)	—	—
Digital Outputs			
Number of outputs	—	8	—
Output circuit design	—	Triac	—
Output Voltage span	—	100 - 240 V AC	—
Output current, logic "1"	—	0.5 A AC	—
Rated value at 240 V AC			
Utilization factor (g)	—	1	—
Residual current, logic "O"	—	140 µA max.	—
Output delay, off	—	0.2 msec. typ.	—
Potential isolation	—	Yes	—
Output to output isolation	—	No	—
Status display	—	LED, green	—
Cable length			
Unscreened	—	1300 ft. (400 M)	—
Screened	—	1300 ft. (400 M)	—
Pneumatic Outputs			
Number of outputs	—	—	4
Output device	—	—	Pneumatic valve
Configuration	—	—	3/2 way valve, N.C.
Operating pressure (max.)	—	—	0 to + 101.0 psi (0 to + 7.0 bar)
Flow rate @ 87 psi (6.0 bar)	—	—	0.882 SCFM (25 l / min.)
Medium	—	—	Compressed air or neutral gases
Port connection	—	—	PE tube 5 x 1

General	LE 4-206-AA1
Temperature	
Operating	0 to + 55 ˚C
Storage	- 25 to + 70 ˚C
Shock resistance	15 g, 11 msec.
Vibration, constant 1 g	f = 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4
Protection class	IP 20
Rated isolation voltage per IEC 1131 part 2	600 V AC
Mounting environment	Dry and dust free
Terminals, plug-in connector	Screw clamp
Weight	0.58 lb (265 gr.)
Approvals	CE
Analog Inputs	
Number of inputs	4
Input Voltage range	± 10 V DC
Resolution (S 40 configured)	10 bit (0 - 1024) 12 bit (0 - 4095)
Accuracy, full scale	0.8 % (max.)
Input resistance	> 40 k Ohm
Permissible input voltage (max.)	± 15 V DC
Over-range error indication	Yes
Potential isolation	Yes
Input to input isolation	No
Terminals, plug-in connector	Screw clamp
Cable length, screened	154 ft (50M)
Analog Outputs	
Number of outputs	2
Output voltage range	± 10 V DC
Resolution (**S4** configured)	10 bit (0 - 1024) 12 bit (0 - 4095)
Accuracy, full scale	0.8 % (max.)
Load impedance per output	2 k Ohm
Short circuit protection	Yes
Short circuit current	± 32 mA
Potential isolation	Yes
Output to output isolation	No
Terminals, plug-in connector	Screw clamp
Cable length, screened	154 ft (50M)

General	LE 4-622-CX1
Temperature	
Operating	0 to +55 ˚C
Storage	-25 to +70 ˚C
Shock resistance	15 g, 11 msec.
Vibration, constant 1 g	f = 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4
Protection class	IP 20
Rated isolation voltage per IEC 1131 part 2	600 V AC
Mounting environment	Dry and dust free
Terminals, plug-in connector	Screw clamp
Weight	0.58 lb (265 gr.)
Approvals	CE
Counter Inputs 5 V	
Signal level	RS 422
Differential Input voltage	V max. = 5.25 V V min. =2 V
Input current	I max. = 20 mA at V max. I min. = 2.5 mA at V min.
Max. counter frequency	300 kHz
Encoder type	Quadrature
Counter range	24 bit
Potential isolation	Yes
Input to input isolation	No
Terminals, plug-in connector	Screw clamp
Cable length, screened	154 ft (50M)
Counter Inputs 24 V	
Input voltage	V max. = 30 V V min. = 18 V
Input current	I min. = 2.5 mA at V min.
Max. counter frequency	300 kHz
Encoder type	Quadrature, Incremental
Counter range	24 bit
Potential isolation	Yes
Input to input isolation	No
Terminals, plug-in connector	Screw clamp
Cable length, screened	154 ft (50M)

General	LE 4-501-BS1
Temperature	
Operating	0 to + 55 ˚C
Storage	- 25 to + 70 ˚C
Shock resistance	15 g, 11 msec.
Vibration, constant 1 g	f = 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4
Protection class	IP 20
Rated isolation voltage	
per IEC 1131 part 2	600 V AC
Mounting environment	Dry and dust free
Terminals, plug-in connector	Screw clamp
Weight	0.55 lb (250 gr.)
Approvals	CE
Network Interface	
Type	Suconet-K
Configuration	For use with **PS 4-201-MM1**
Number of **LE 4-501-BS1**'s per **PS 4-201-MM1** (max.)	1
Operating modes	
Master mode	
Number of slaves (max.)	8
Send and receive data bytes	128 bytes
Slave mode	
Station address	1 - 30, software addressing
Send and receive data bytes	78 bytes
Transfer rate	187.5 / 375 K baud
Data interface	RS 485
Transmission media	Twisted pair, shield.
Data cable length	2000 / 1000 ft. (600 / 300 m)

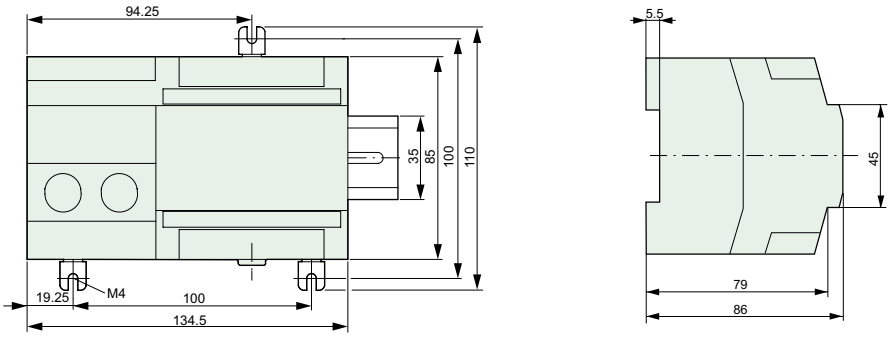
General	LE 4-503-BS1
Temperature	
Operating	0 to + 55 ˚C
Storage	- 25 to + 70 ˚C
Shock resistance	15 g, 11 msec.
Vibration, constant 1 g	f = 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4
Protection class	IP 20
Rated isolation voltage	
per IEC 1131 part 2	600 V AC
Mounting environment	Dry and dust free
Terminals, plug-in connector	Screw clamp
Weight	0.62 lb (280 gr.)
Approvals	CE
Network Interface	
Type	Profibus FMS Slave
Configuration	For use with **PS 4-201-MM1**
Number of **LE 4-503-BS1**'s per **PS 4-201-MM1** (max.)	1
Bus Address	1 to 126
Server - Dienste	Read, Write, Status, Identify, Get OV, Initiate, Abort
Object	Simple Variable
Data type	Octal string
Object (Read)	Read All: 2 x 6 byte, 1 x 10 byte, 1 x 30 byte
Object (Write)	Write All: 3 x 6 byte, 1 x 20 byte
	2 MSZY, 2 MSAZ
Time	
Slot time: TSL	3500 bit
mn. station delay time: TSDR	500 bit
max. station delay time: TSDR	1000 bit
Transfer rate	500 K baud
Data interface	RS 485
Transmission media	Twisted pair, shield.

General	MI 4-100-KC1 MI 4-101-KC1	MI 4-100-KE1 MI 4-101-KE1	MI 4-110-KE1 MI 4-111-KE1	MI 4-130-KH1 MI 4-131-KH1
Temperature				
Operating	0 to + 55 ˚C	0 to + 55 ˚C	0 to + 55 ˚C	0 to + 55 ˚C
Storage	- 20 to + 70 ˚C	- 20 to + 70 ˚C	- 20 to + 70 ˚C	- 20 to + 70 ˚C
Shock resistance	15 g, 11 msec.	15 g, 11 msec.	15 g, 11 msec.	15 g, 11 msec.
Vibration, constant 1 g	f = 0 - 150 Hz	f = 0 - 150 Hz	f = 0 - 150 Hz	f = 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2	EN 61 000-4-2	EN 61 000-4-2	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4	EN 61 000-4-4	EN 61 000-4-4	EN 61 000-4-4
Protection class	IP 65	IP 65	IP 65	IP 65
Weight	2.0 lb (0.9 kg)	2.0 lb (0.9 kg)	2.0 lb (0.9 kg)	4.0 lb (1.8 kg)
Voltage Supply				
Rated value	+ 24 V DC	+ 24 V DC	+ 24 V DC	+ 24 V DC
Min./max. range	+ 20.4 / + 28.8 V DC	+ 20.4 / + 28.8 V DC	+ 20.4 / + 28.8 V DC	+ 20.4 / + 28.8 V DC
Ripple, maximum	≤ 5.0 %	≤ 5.0 %	≤ 5.0 %	≤ 5.0 %
Power consumption	10 W (max.)	10 W (max.)	10 W (max.)	10 W (max.)
Reverse voltage protection	Yes	Yes	Yes	Yes
Supply current, maximum	250 mA	250 mA	250 mA	400 mA
Display				
Type, all backlit	LCD monochrome	LCD monochrome	LCD monochrome	LCD monochrome
Characters, lines x columns	2 x 20	2 x 20	4 x 20	4 x 40
Character height	5.5 mm	5.5 mm	5.5 mm	5.5 mm
Resolution, in pixels	—	—	—	—
Touch technology	—	—	—	—
Keys				
Cursor keys	4	4	4	4
Numeric keypad	No	Yes, also as function keys	Yes, also as function keys	Yes
Function keys with LED	4	9, also as numeric keys	9, also as numeric keys	16
Total number of keys	10	19	19	35
Memory				
Project flash memory	128 KB	128 KB	128 KB	128 KB
Recipe memory, battery backed RAM	—	—	16 KB	16 KB
Alarm messages (number/character length)	256 / 20	1024 / 20	1024 / 20	1024 / 40
History memory messages	256	256	256	256
Number of passwords	8	8	8	8
Character sets	ASCII, Katakana	ASCII, Katakana	ASCII, Katakana	ASCII, Katakana
Interfaces				
Sucom A / Programming port RS 232 / RS 485 15 pin, Sub D plug	Yes	Yes	Yes	Yes
Suconet K port RS 485, 187.5 / 375 kbaud 9 pin, sub D socket	**MI 4-101-KC1** only	**MI 4-101-KE1** only	**MI 4-111-KE1** only	**MI 4-131-KH1** only
Printer port, RS 232 600 - 38,400 baud 15 pin, Sub D socket	No	No	Yes	Yes
Special Features				
Battery	No	No	Yes	Yes
All keys are programmable	Yes	Yes	Yes	Yes
Recipe for configuration	Yes	Yes	Yes	Yes
Real time clock	No	No	Yes	Yes
Prints reports, alarm lists and event lists	No	No	Yes	Yes
System LEDs	2	2	2	5

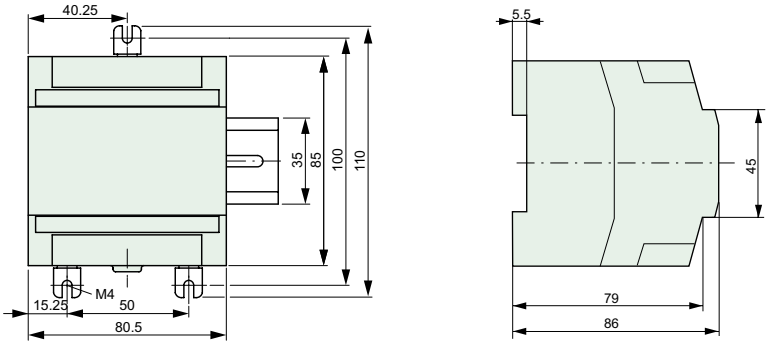
MI 4-151-KF1	MI 4-451-KF1	MI 4-151-TA1	MI 4-451-TA1	MI 4-161-TC1	MI 4-471-TC1
0 to + 55 ˚C - 20 to + 70 ˚C 15 g, 11 msec. f = 0 - 150 Hz EN 61 000-4-2 EN 61 000-4-4 IP 65 5.5 lb (2.5 kg)	0 to + 55 ˚C - 20 to + 70 ˚C 15 g, 11 msec. f = 0 - 150 Hz EN 61 000-4-2 EN 61 000-4-4 IP 65 5.5 lb (2.5 kg)	0 to + 55 ˚C - 20 to + 70 ˚C 15 g, 11 msec. f = 0 - 150 Hz EN 61 000-4-2 EN 61 000-4-4 IP 65 5.3 lb (2.4 kg)	0 to + 55 ˚C - 20 to + 70 ˚C 15 g, 11 msec. f = 0 - 150 Hz EN 61 000-4-2 EN 61 000-4-4 IP 65 5.3 lb (2.4 kg)	0 to + 55 ˚C -20 to + 70 ˚C 15 g, 11 msec. f = 0 - 150 Hz EN 61 000-4-2 EN 61 000-4-4 IP 65 5.9 lb (2.7 kg)	0 to + 55 ˚C - 20 to + 70 ˚C 15 g, 11 msec. f = 0 - 150 Hz EN 61 000-4-2 EN 61 000-4-4 IP 65 5.9 lb (2.7 kg)
+ 24 V DC + 20.4 / + 28.8 V DC ≤ 5.0 % 10 W (max.) Yes 500 mA	+ 24 V DC + 20.4 / + 28.8 V DC ≤ 5.0 % 10 W (max.) Yes 500 mA	+ 24 V DC + 20.4 / + 28.8 V DC ≤ 5.0 % 10 W (max.) Yes 500 mA	+ 24 V DC + 20.4 / + 28.8 V DC ≤ 5.0 % 10 W (max.) Yes 500 mA	+ 24 V DC + 20.4 / + 28.8 V DC ≤ 5.0 % 10 W (max.) Yes 600 mA	+ 24 V DC + 20.4 / + 28.8 V DC ≤ 5.0 % 10 W (max.) Yes 700 mA
LCD monochrome 16 x 40 5.5/11/22/44 mm 320 x 240 —	LCD color 16 x 40 5.5/11/22/44 mm 320 x 240 —	LCD monochrome 16 x 40 5.5/11/22/44 mm 320 x 240 Resistive	LCD color 16 x 40 5.5/11/22/44 mm 320 x 240 Resistive	LCD monochrome 25 x 80 5.5/11/22/44 mm 640 x 400 Resistive	LCD color 30 x 80 5.5/11/22/44 mm 640 x 480 Resistive
4 Yes 14, 10 with LED 37	4 Yes 14, 10 with LED 37	— Via touch fields Via touch fields —	— Via touch fields Via touch fields —	4 Via touch fields 2, more via touch fields 8	4 Via touch fields 2, more via touch fields 8
512 KB 16 KB 1024 / 40 256 8 ASCII, freely conf.	512 KB 16 KB 1024 / 40 256 8 ASCII, freely conf.	512 KB 16 KB 1024 / 40 256 8 ASCII, freely conf.	512 KB 16 KB 1024 / 40 256 8 ASCII, freely conf.	512 kbyte 16 KB 1024 / 80 256 8 ASCII, freely conf.	512 KB 16 KB 1024 / 80 256 8 ASCII, freely conf.
Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes
Yes Yes Yes Yes Yes 5	Yes Yes Yes Yes Yes 5	Yes Yes Yes Yes Yes 5	Yes Yes Yes Yes Yes 5	Yes Yes Yes Yes Yes 5	Yes Yes Yes Yes Yes 5

General	SN 4-025-BI7	SN 4-050-BI7
Temperature		
Operating	0 to + 55 ˚C	0 to + 55 ˚C
Storage	- 20 to + 70 ˚C	-20 to + 70 ˚C
Shock resistance	15 g, 11 msec.	15 g, 11 msec.
Vibration, constant 1 g	1 g, 0 - 150 Hz	1 g, 0 - 150 Hz
Electrostatic compatibility	EN 61 000-4-2	EN 61 000-4-2
Electromagnetic compatibility	EN 61 000-4-4	EN 61 000-4-4
Protection class	IP 20	IP 20
Rated isolation voltage	1500 V AC	1500 V AC
Mounting environment	Dry and dust free	Dry and dust free
Weight	1.6 lb (0.9 kg)	1.6 lb (1.2 kg)
Approvals	CE, CSA, UL	CE, CSA, UL
Input Supply		
Main input voltage		
Rated value	115 V AC or 230 V AC	115 V AC or 230 V AC
Min./Max. range	92 to 132 V AC, 187 to 264 V AC	92 to 132 V AC, 187 to 264 V AC
Frequency	47 - 63 Hz	47 - 63 Hz
Main input current		
Rated value	1.1 / 0.5 A	2.1 / 0.9 A
inrush value	5.0 / 15.0 A	10.0 / 30.0 A
Efficiency	84 / 86 %	86 / 87 %
Power consumption	71 / 69 W approx.	136 / 134 W approx.
Power connection terminals		
Type	Screw clamp	Screw clamp
Wire size	20 - 12 AWG	20 - 12 AWG
Output Supply		
Output voltage		
Rated value	24 V DC	24 V DC
Tolerance	± 3.0 %	± 3.0 %
Residual ripple	< 150 mV	< 150 mV
Output current		
Rated value		
horiz. mount, at 55 ˚C	2.5 A	5.0 A
vert. mount, at 55 ˚C	2.0 A	4.0 A
Short circuit detection	7.0 A for 80 ms	14.0 A for 80 ms
Overload detection	3.5 A	7.0 A
Output voltage restart after short circuit or overload	Auto, every 2 sec.	Auto, every 2 sec.
Fault indication	LED, red	LED, red
Potential isolation	Yes	Yes
Power connection terminals		
Type	Screw clamp	Screw clamp
Wire size	20 - 12 AWG	20 - 12 AWG

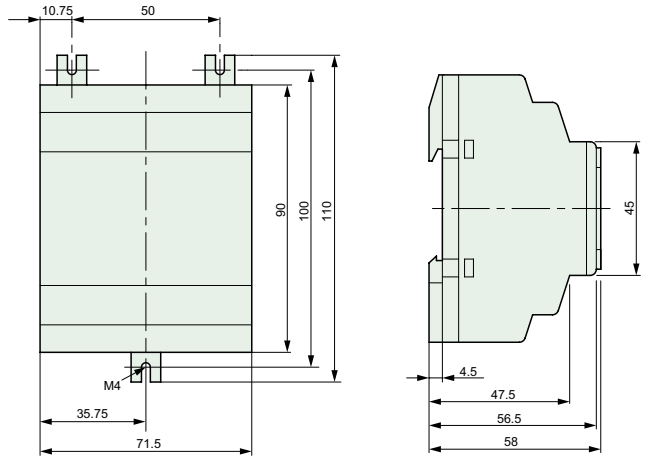
PS 4-..., EM 4-....



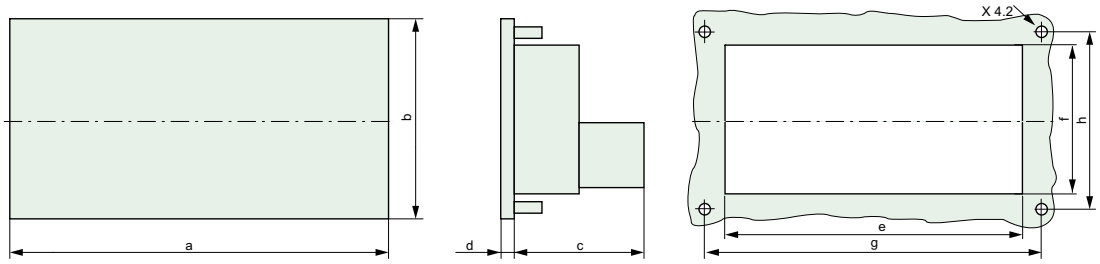
LE 4-...



EASY 412-DC-R
EASY 412-DC-RC
EASY 412-AC-R
EASY 412-AC-RC



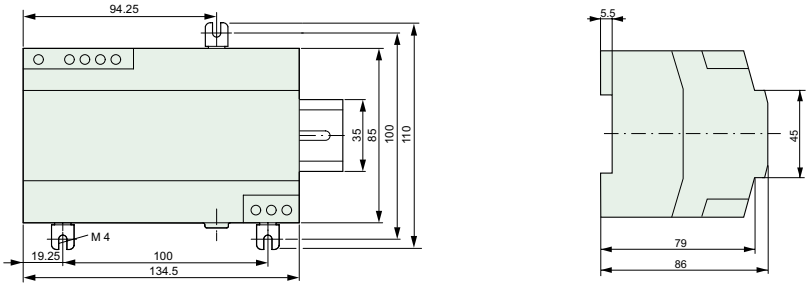
MI 4...



Touch Panel

Type	a	b	c	d	e	f	g	h
MI 4-100-KC1	149	109	64	5	136	96	–	–
MI 4-101-KC1								
MI 4-100-KE1	195	98	74	8	174	78	184	87
MI 4-101-KE1								
MI 4-110-KE1	195	98	74	8	174	78	184	87
MI 4-111-KE1								
MI 4-130-KH1	311	165	80	9	292	147	–	–
MI 4-131-KH1								
MI 4-151-KF1	216	168	74	8	195	147	205	157
MI 4-451-KF1								
MI 4-151-TA1	216	168	74	8	195	147	205	157
MI 4-451-TA1								
MI 4-161-TC1	311	220	80	9	292	202	–	–
MI 4-471-TC1								

SN 4-025-BI4



SN 4-050-BI4