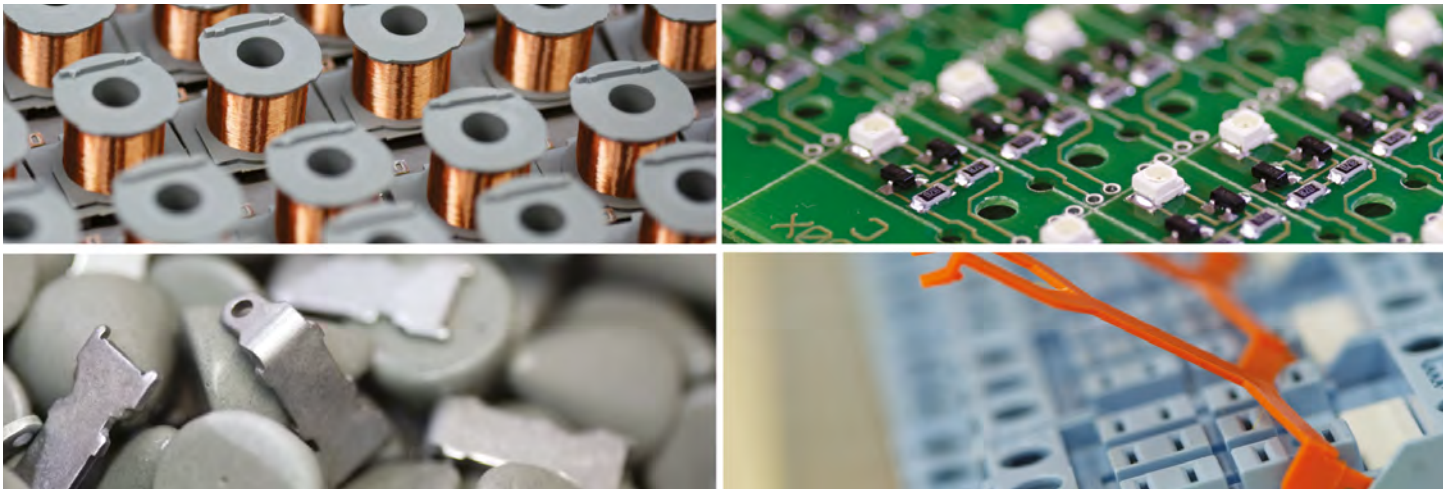




WORLD OF RELAYS

PLC & HMI CATALOGUE

WoR 2.1 | English



ComatReleco at a glance

ComatReleco is one of the world's leading suppliers of high-quality relays and contactors of all kinds. With one of the broadest product portfolios, including customized solutions, ComatReleco serves customers in the industrial automation and building installation, rail and transportation segments. Our core competencies are industrial relays, timing relays, monitoring relays and contactors. These are installed with the latest semiconductor technologies or also with the traditional electromechanical design.

Designed in Switzerland, assembled in...

ComatReleco continuously invests in research and development, thus ensuring a consistently high rate of innovation. Several international patent applications support this fact. Our research and development team is headquartered in Switzerland and has access to additional qualified employees in our subsidiaries in Germany and China. With a share of more than 20% of total research and development costs, we outperform many global players in our segment.

Customer orientation and quality management

ComatReleco has a group-wide quality management system with real-time access to test and inspection protocols. Our relays and contactors are 100% tested at the end of the production line. On arrival of the goods at our central warehouse in Switzerland, another quality test is carried out.

Are you using a ComatReleco product or are you looking for a suitable solution? Our support centre in Switzerland will be happy to help you find the right relay or contactor for your application. ComatReleco is known for the world's largest number of customized solutions for industrial, time and monitoring relays and contactors.

Headquarters in Switzerland – international presence

The warehouse and logistics are managed centrally at the headquarters in Switzerland. Production is diversified and optimized in terms of quality, costs and logistics criteria. Our production sites are located in Europe and Asia. Through our network of distribution partners, the Group is present on all world markets. ComatReleco has been part of the management team since 2003.

W O R L D O F R E L A Y S

Find your suitable documentation

ComatReleco offers a variety of customized solutions. We therefore have different documentation for different areas of application.



GENERAL-, TRANSPORTATION & RAILWAY-, SOLID STATE RELAY-CATALOGUE

Please visit comatreleco.com or contact our support at support@comatreleco.com for more information.

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		JZ20-T1023		V130-J-RA2243
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		JZ20-UA2423		V130-J-TA2443
		JZ20-UN2023		V130-J-TR2043
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		MJ20-JZ-SL122		V130-J-TR643
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6 analog inputs DC / 4 transistor outputs	AF-10MT-GD2-CAP	10
12 digital inputs AC / 8 relay outputs NO	AF-20MR-A2-CAP	11
12 digital inputs / analog DC / 8 relay outputs NO	AF-20MR-D2-CAP	12
12 analog inputs DC / 8 transistor outputs	AF-20MT-GD2-CAP	13

AF-10MR-A2-CAP

6 digital inputs AC | 4 relay outputs | NO



Power supply	
Nominal voltage	100 ... 240 V AC
Operating voltage range	85 ... 260 V AC
Power consumption AC	< 6 VA
Inputs	
Number of digital or analog inputs	6
Nominal voltage digital inputs	80 ... 240 V AC
Delay time	50 ms
Outputs	
Digital output	25 000 switch cycles
Output type	0.5 Hz
Number of relay outputs	4
Contact type	NO
Rated voltage	250 V AC
Rated current	10 A
Memory	
Storage capacity	Program 64 k / 127 function block
Programming language	Function block diagram (FDB)
Resistor load / Lamp load	10 Hz
Induced load	2 Hz
Communication	
Interface	support 2 channel with RS485 and 1 channel with program interfaces
Baud rate	9600 bps / 19200 bps
Protocol	Self-defined protocol / MODBUS RTU protocol (only read)
General data	
Ambient temperature storage (no ice)	-40 ... 70 °C
Ambient temperature operation	-20 ... 70 °C
Dimension	fig. 2.
Weight	177 g
Mounting	M3 or DIN rail

Description	Type
6 digital inputs AC / 4 relay outputs	AF-10MR-A2-CAP/AC110-240V

Other devices on request. Please contact support@comatreleco.com.
The Quick II software is available free of charge on comatreleco.com at downloads.

Accessories	
Display for programming	AF-HMI
Front cover	AF-CAP
Programming cable	AF-DUSB2



fig. 1. Wiring diagram

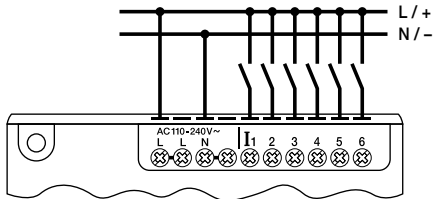
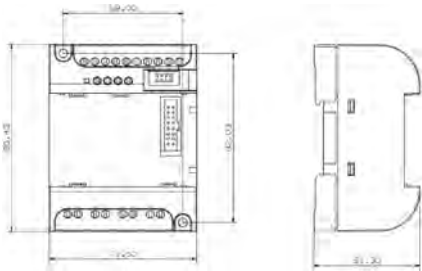


fig. 2. Dimension (mm)



Technical approvals, conformities

Standards IEC/EN 61000-3-2; IEC/EN 61000-3-3;
IEC/EN 55032; IEC/EN 55035

Approvals

AF-10MR-D2-CAP

6 digital inputs / analog DC | 4 relay outputs | NO

Power supply

Nominal voltage	12 ... 24 V DC
Operating voltage range	10 ... 28 V DC
Power consumption DC	< 4 W

Inputs

Number of digital or analog inputs	6
Nominal voltage digital inputs	10 ... 24 V DC
Delay time	50 ms

Outputs

Digital output	25 000 switch cycles
Output type	0.5 Hz
n of relay outputs	4
Contact type	NO
Rated voltage	250 V AC
Rated current	10 A

Memory

Storage capacity	Program 64 k / 127 function block
Programming language	Function block diagram (FDB)
Resistor load / Lamp load	10 Hz
Induced load	2 Hz

Communication

Interface	support 2 channel with RS485 and 1 channel with program interfaces
Baud rate	9600 bps / 19200 bps
Protocol	Self-defined protocol / MODBUS RTU protocol (only read)

General data

Ambient temperature storage (no ice)	-40 ... 70 °C
Ambient temperature operation	-20 ... 70 °C
Dimension	fig. 2.
Weight	177 g
Mounting	M3 or DIN rail

Product reference

Description	Type
6 digital/analog inputs / 4 relay outputs	AF-10MR-D2-CAP/DC24V

Other devices on request. Please contact support@comatreleco.com.

The Quick II software is available free of charge on comatreleco.com at downloads.

Accessories

Display for programming	AF-HMI
Front cover	AF-CAP
Programming cable	AF-DUSB2



fig. 1. Wiring diagram

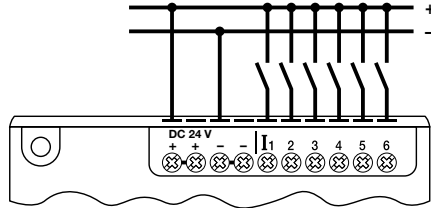
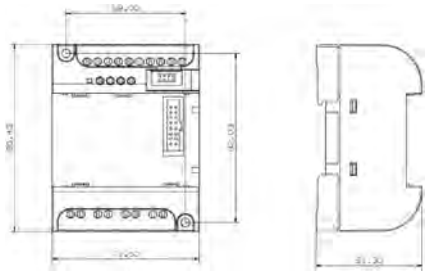


fig. 2. Dimension (mm)



Technical approvals, conformities

Standards IEC/EN 61000-3-2; IEC/EN 61000-3-3;
IEC/EN 55032; IEC/EN 55035

Approvals

AF-10MT-GD2-CAP

6 analog inputs DC | 4 transistor outputs



Power supply

Nominal voltage	12 ... 24 V DC
Operating voltage range	10 ... 28 V DC
Power consumption DC	< 2 W

Inputs

Number of digital or analog inputs	6
Nominal voltage digital inputs	24 V DC
Nominal voltage analog inputs	0 ... 10 V DC
Delay time	50 ms

Outputs

Digital output	25 000 switch cycles
Output type	0.5 Hz
Number of transistor outputs	4
Rated voltage	80 V DC
Rated current	2 A

Memory

Storage capacity	Program 64 k / 127 function block
Programming language	Function block diagram (FDB)
Resistor load / Lamp load	10 Hz
Induced load	2 Hz

Communication

Interface	support 2 channel with RS485 and 1 channel with program interfaces
Baud rate	9600 bps / 19200 bps
Protocol	Self-defined protocol / MODBUS RTU protocol (only read)

General data

Ambient temperature storage (no ice)	-40 ... 70 °C
Ambient temperature operation	-20 ... 70 °C
Dimension	fig. 2.
Weight	177 g
Mounting	M3 or DIN rail

Product reference

Description	Type
6 analog inputs / 4 NPN outputs	AF-10MT-GD2-CAP/DC24V

Other devices on request. Please contact support@comatreleco.com.
The Quick II software is available free of charge on comatreleco.com at downloads.

Accessories

Display for programming	AF-HMI
Front cover	AF-CAP
Programming cable	AF-DUSB2



fig. 1. Wiring diagram

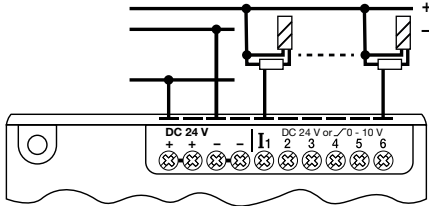
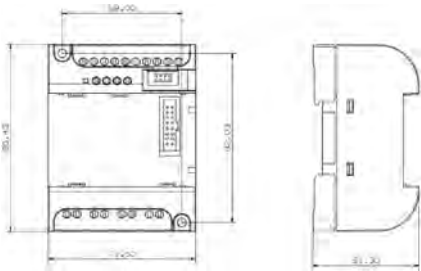


fig. 2. Dimension (mm)



Technical approvals, conformities

Standards IEC/EN 61000-3-2; IEC/EN 61000-3-3;
IEC/EN 55032; IEC/EN 55035

Approvals

AF-20MR-A2-CAP**12 digital inputs AC | 8 relay outputs | NO****Power supply**

Nominal voltage	100 ... 240 V AC
Operating voltage range	85 ... 260 V AC
Power consumption AC	< 10 VA

Inputs

Number of digital or analog inputs	12
Nominal voltage digital inputs	80 ... 240 V AC
Delay time	50 ms

Outputs

Digital output	25 000 switch cycles
Output type	0.5 Hz
Number of relay outputs	8
Contact type	NO
Rated voltage	250 V AC
Rated current	10 A

Memory

Storage capacity	Program 64 k / 127 function block
Programming language	Function block diagram (FDB)
Resistor load / Lamp load	10 Hz
Induced load	2 Hz

Communication

Interface	support 2 channel with RS485 and 1 channel with program interfaces
Baud rate	9600 bps / 19200 bps
Protocol	Self-defined protocol / MODBUS RTU protocol (only read)

General data

Ambient temperature storage (no ice)	-40 ... 70 °C
Ambient temperature operation	-20 ... 70 °C
Dimension	fig. 2.
Weight	282 g
Mounting	M3 or DIN rail

Product reference

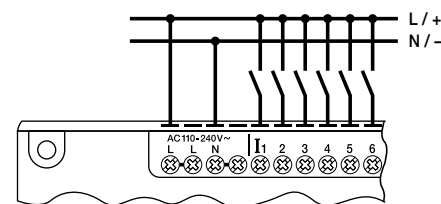
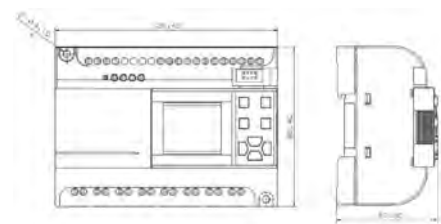
Description	Type
12 digital inputs / 8 relay outputs	AF-20MR-A2-CAP/AC110-240V

Other devices on request. Please contact support@comatreleco.com.

The Quick II software is available free of charge on comatreleco.com at downloads.

Accessories

Display for programming	AF-HMI
Front cover	AF-CAP
Programming cable	AF-DUSB2

**fig. 1. Wiring diagram****fig. 2. Dimension (mm)****Technical approvals, conformities**

Standards IEC/EN 61000-3-2; IEC/EN 61000-3-3;
IEC/EN 55032; IEC/EN 55035

Approvals



AF-20MR-D2-CAP

12 digital inputs / analog DC | 8 relay outputs | NO



Power supply

Nominal voltage	12 ... 24 V DC
Operating voltage range	10 ... 28 V DC
Power consumption DC	< 5 W

Inputs

Number of digital or analog inputs	12
Nominal voltage digital inputs	10 ... 24 V DC
Delay time	50 ms

Outputs

Digital output	25 000 switch cycles
Output type	0.5 Hz
Number of relay outputs	8
Contact type	NO
Rated voltage	250 V AC
Rated current	10 A

Memory

Storage capacity	Program 64 k / 127 function block
Programming language	Function block diagram (FDB)
Resistor load / Lamp load	10 Hz
Induced load	2 Hz

Communication

Interface	support 2 channel with RS485 and 1 channel with program interfaces
Baud rate	9600 bps / 19200 bps
Protocol	Self-defined protocol / MODBUS RTU protocol (only read)

General data

Ambient temperature storage (no ice)	-40 ... 70 °C
Ambient temperature operation	-20 ... 70 °C
Dimension	fig. 2.
Weight	282 g
Mounting	M3 or DIN rail

Product reference

Description	Type
12 digital/analog inputs / 8 outputs	AF-20MR-D2-CAP/DC24V

Other devices on request. Please contact support@comatreleco.com.
The Quick II software is available free of charge on comatreleco.com at downloads.

Accessories

Display for programming	AF-HMI
Front cover	AF-CAP
Programming cable	AF-DUSB2



fig. 1. Wiring diagram

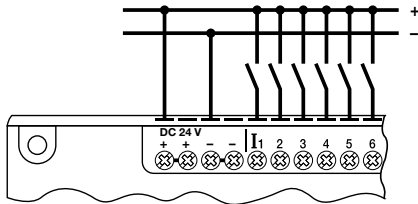
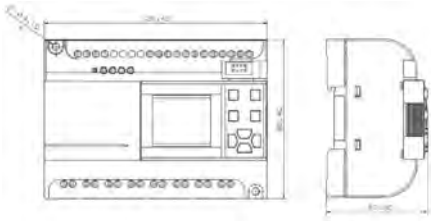


fig. 2. Dimension (mm)



Technical approvals, conformities

Standards	IEC/EN 61000-3-2; IEC/EN 61000-3-3; IEC/EN 55032; IEC/EN 55035
Approvals	CE

Power supply

Nominal voltage	12 ... 24 V DC
Operating voltage range	10 ... 28 V DC
Power consumption DC	< 2 W

Inputs

Number of digital or analog inputs	12
Nominal voltage digital inputs	24 V DC
Nominal voltage analog inputs	0 ... 10 V DC
Delay time	50 ms

Outputs

Digital output	25 000 switch cycles
Output type	0.5 Hz
Number of transistor outputs	8
Rated voltage	80 V DC
Rated current	2 A

Memory

Storage capacity	Program 64 k / 127 function block
Programming language	Function block diagram (FDB)
Resistor load / Lamp load	10 Hz
Induced load	2 Hz

Communication

Interface	support 2 channel with RS485 and 1 channel with program interfaces
Baud rate	9600 bps / 19200 bps
Protocol	Self-defined protocol / MODBUS RTU protocol (only read)

General data

Ambient temperature storage (no ice)	-40 ... 70 °C
Ambient temperature operation	-20 ... 70 °C
Dimension	fig. 2.
Weight	282 g
Mounting	M3 or DIN rail

Product reference

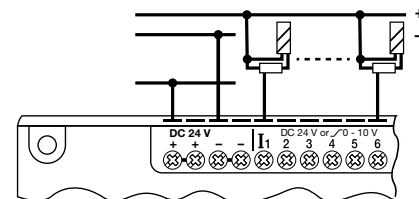
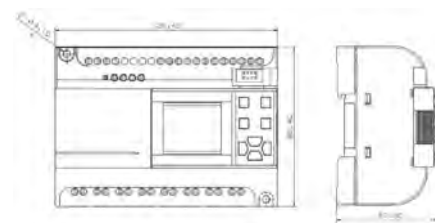
Description	Type
12 analog inputs DC / 8 NPN outputs	AF-20MT-GD2-CAP/DC24V

Other devices on request. Please contact support@comatreleco.com.

The Quick II software is available free of charge on comatreleco.com at downloads.

Accessories

Display for programming	AF-HMI
Front cover	AF-CAP
Programming cable	AF-DUSB2

**fig. 1. Wiring diagram****fig. 2. Dimension (mm)****Technical approvals, conformities**

Standards IEC/EN 61000-3-2; IEC/EN 61000-3-3;
IEC/EN 55032; IEC/EN 55035

Approvals 

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AF-CAP

Front cover

Product references

Description	Type
Front cover	AF-CAP



AF-DUSB2

Programming cable

Product references

Description	Type
Programming cable	AF-DUSB2



AF-HMI

Display for programming

Product references

Description	Type
Display for programming	AF-HMI



2 Unitronics PLC + HMI

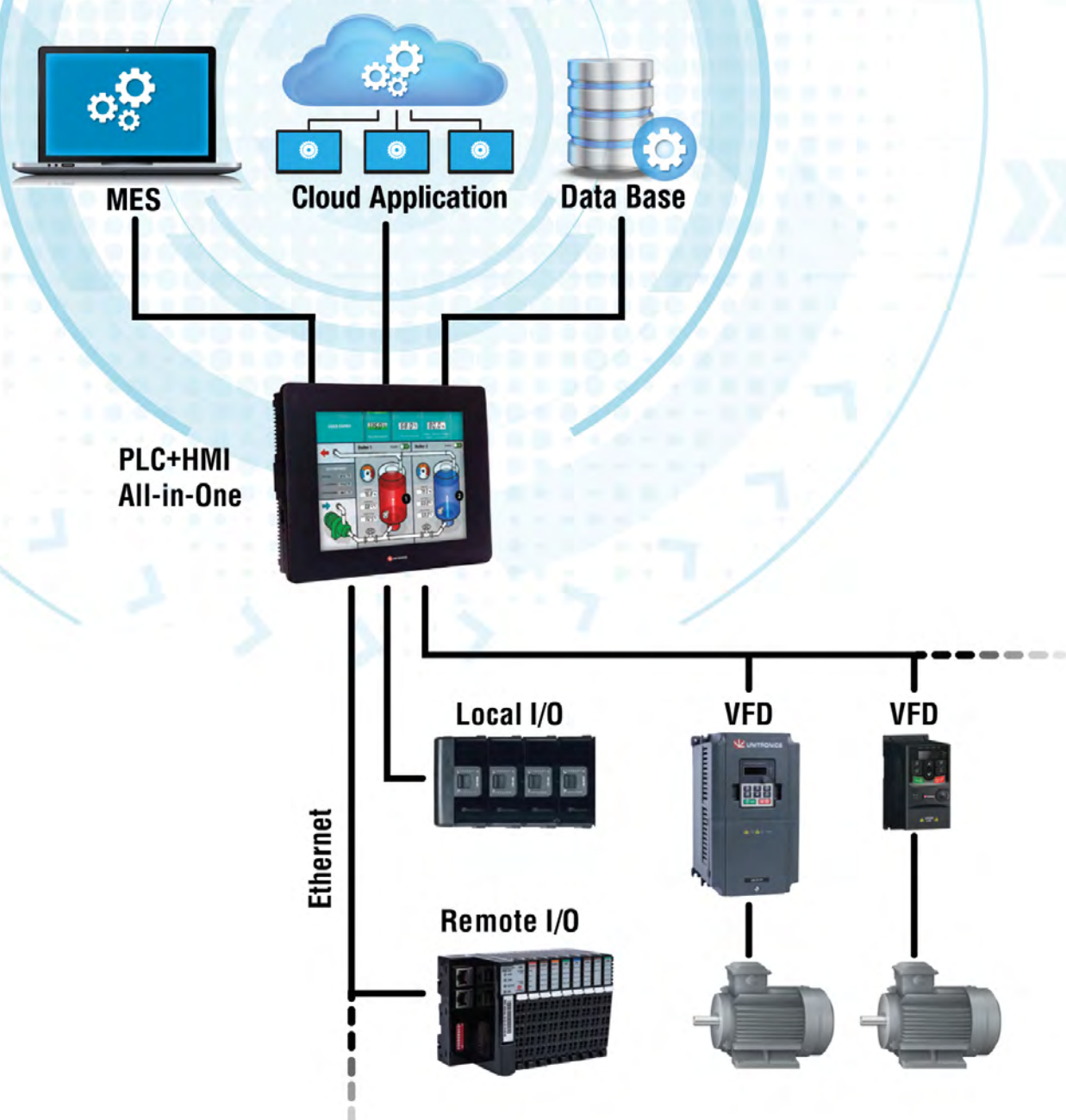
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One Integrated Solution for Control and Automation

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One Integrated Solution for Control and Automation

General information



Complete Range of PLC+HMI

- Powerful, Multi-function Controllers
- Up to 2048 I/Os per controller
- Quality HMI
- Field-hardened
- Award-winning



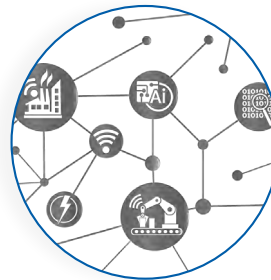
All-in-One Programming Software

- Program Ladder Logic
- Design HMI & Web pages
- Configure VFDs
- Hardware & Communication Configuration
- One Easy Environment



Total Solution for Industry 4.0

- MQTT
- SQL
- FTP
- SNMP
- Built-in Web Server
- Remote Access via VNC
- Smart Factory Technology



Notes

3 Jazz®

	Type	Page
Jazz 20		
6 digital inputs 4 relay outputs	JZ20-R10 / JZ20-J-R10	22
6 digital inputs 6 relay outputs	JZ20-R16 / JZ20-J-R16	22
6 digital inputs 6 relay outputs	JZ20-J-R16HS	22
18 digital inputs 11 relay outputs	JZ20-R31 / JZ20-J-R31	22
6 digital inputs 4 transistor outputs	JZ20-T10 / JZ20-J-T10	22
6 digital inputs 2 analog/digital inputs 2 analog inputs 8 transistor outputs	JZ20-T18 / JZ20-J-T18	22
6 digital inputs 2 analog/digital inputs 2 analog inputs 10 transistor outputs	JZ20-J-T20HS	22
18 pnp or npn inputs 20 pnp	JZ20-T40 / JZ20-J-T40	22
9 digital inputs 2 analog/digital inputs 2 analog inputs 5 relay outputs	JZ20-UA24 / JZ20-J-UA24	22
9 digital inputs 2 analog/digital inputs 2 analog inputs 5 relay outputs	JZ20-UN20 / JZ20-J-UN20	22

3.1 Jazz

JZ20-J-xxx

Jazz 20

Features:

HMI

- Up to 60 user-designed screens
- Multi language

PLC

- I/O options include digital, analog, temperature and high speed
- Auto-tune PID, up to 4 independent loops (according to model*)

Communication

Built-in ports:

- 1 Mini USB for programming

Add-on ports:

- 1 Ethernet TCP/IP
- 1 RS232 / RS485

Protocols:

- PC access via MODBUS or OPC server
- Supports MODBUS protocol (according to model)

General Features:

- SMS via GSM
- 3G Modem support
- Remote access utilities

Accessories:

- Program Cloner module- Copy applications from PLC to PLC
- Keypad Slide kit- Customize the Jazz keypad to your application

* Up to 4 loops: models UA24 / UN20

1 loop: all other models 1

An All-in-One unit as affordable as a «smart relay».

Full-function PLC combined with a textual HMI and keypad, with up to 40 built-in I/Os.



Jazz® - J



DIN-rail Power Supplies

UAP-24V24W	UAP-24V60W	UAP-24V96W
24W 24V 1A	60W 24V 2.5A	96W 24V 4A

GSM

GSM-KIT-17J-3G

KIT, MODEM GPRS, CINTERION, EHS6T

Jazz Add-on ports and Accessories

COM Port kit	Ethernet Communication Port	Program Cloner module	Keypad Slide kit
RS232/RS485 (isolated)	Article No.: MJ20-ET1 ¹	Article No.: MJ20-MEM1	Article No.: MJ20-JZ-SL1 ¹

¹ Not yet UL certified

3.1 Jazz

JZ20-J-xxx

Jazz 20

I/O Options	
Total supported I/Os	40
Built-in	According to model (See Built-in I/Os table below)
I/O Expansion	—
Program	
Memory Operands	256 coils, 256 registers, 64 timers
Ladder Memory	48K
HMI Panel	
Touch screen	—
Cut Out Height x Width (mm)	117 x 89
Resolution	2 lines, 16 characters
Keys	16 keys, including 10 user-labeled keys
Environment	
Protection	IP65, NEMA4X (when panel mounted)
Operating Temperature	0 to 50°C
Standards	CE, UL, EAC
General	
Battery	10 years typical at 25°C, battery back-up for RTC and system data, including variable data
Clock	Real-time clock functions (date and time)

Jazz® models – Built-in I/O configurations

Article ⁴	Summary	Inputs ¹				Outputs				Operating Voltage
		Digital ²	HSC/ Shaft-encoder ²	Analog	Temperature Measurement	Transistor ³	PWM/HSO ³	Relay	Analog	
JZ20-R10 JZ20-J-R10	6 Digital Inputs 4 Relay Outputs	6	2 10kHz, 16-bit	—	—	—	—	4	—	24VDC
JZ20-R16 JZ20-J-R16	6 Digital, 2 D/A, 2 Analog Inputs ¹ 6 Relay Outputs	8		2 0-10V 10 or 12-bit 2 0-20mA, 4-20mA 10 or 12-bit	—	—	—	6	—	24VDC
JZ20-J-R16HS	6 Digital, 3 HSC/Shaft-encoder, 2 D/A, 2 AI, 6 Relay outputs	8	3 10kHz, 16-bit	2 0-10V 10 or 12-bit 2 0-20mA, 4-20mA 10-bit	—	—	—	6	—	24VDC
JZ20-R31 JZ20-J-R31	16 Digital, 2 D/A, 2 Analog Inputs ¹ 11 Relay Outputs	18	2 10kHz, 16-bit	2 0-10V 10 or 12-bit 2 0-20mA, 4-20mA 10-bit	—	—	—	11	—	24VDC
JZ20-T10 JZ20-J-T10	6 Digital Inputs 4 Transistor Outputs	6		—	—	4 pnp	—	—	—	24VDC
JZ20-T18 JZ20-J-T18	6 Digital, 2 D/A, 2 Analog Inputs ¹ 8 Transistor Outputs	8		2 0-10V 10-bit 2 0-20mA, 4-20mA 10-bit	—	8 pnp	—	—	—	24VDC
JZ20-J-T20HS	6 Digital, 3 HSC/Shaft-encoder, 2 D/A, 2 AI, 10 Transistor outputs	8	3 10kHz, 16-bit	2 0-10V 10-bit	—	8 pnp 2 nnp	2 32kHz	—	—	24VDC
JZ20-T40 JZ20-J-T40	16 Digital, 2 D/A, 2 Analog Inputs ¹ 20 Transistor Outputs	18	2 10kHz, 16-bit	2 0-10V 10-bit 2 0-20mA, 4-20mA 10-bit	—	20 pnp	—	—	—	24VDC
JZ20-UA24 JZ20-J-UA24	9 Digital Inputs, 1 HSC, 2 D/A, 2 AI, 2 PT100/TC, 5 Relay Outputs, 2 Transistor Outputs, 2 AO	11		2 0-20mA 4-20mA 2 0-10 VDC	2 Thermocouple, PT100	2 pnp	2	5	2 +/-10V, 4-20mA 12-bit	24VDC
JZ20-UN20 JZ20-J-UN20	9 Digital, 2 D/A, 1 Analog 1 PT100/TC Inputs ¹ 5 Relay, 2 Transistor Outputs	11	1 5kHz, 16-bit	2 0-10V 10-bit 1 0-20mA, 4-20mA 10-bit	1 Thermocouple, PT100	2 pnp	2	5	—	24VDC

¹ In some models certain inputs are adaptable, and can function as either digital or analog. Adapting requires input pins. This reduces the number of digital inputs. Pin requirements: Each analog input requires 1 pin.

² Note that the high-speed inputs are included in the total number of digital inputs

³ Note that the high-speed outputs are included in the total number of npr/pnp digital outputs

⁴ To order a classic Jazz with a Bezel panel, omit the 'J' from the model number, ex. JZ20-R10

Notes

4 Samba™

	Type	Page
SM35		
12 digital inputs 2 analog inputs 8 relay outputs	SM35-J-R20	26
12 digital inputs 2 analog inputs 8 relay outputs	SM35-J-T20	26
12 digital inputs 2 analog inputs 8 relay outputs 2 analog outputs	SM35-J-RA22	26
12 digital inputs 2 analog inputs 8 transistor outputs 2 analog outputs	SM35-J-TA22	26
SM43		
12 digital inputs 2 analog inputs 8 relay outputs	SM43-J-R20	26
12 digital inputs 2 analog inputs 8 relay outputs	SM43-J-T20	26
12 digital inputs 2 analog inputs 8 relay outputs 2 analog outputs	SM43-J-RA22	26
12 digital inputs 2 analog inputs 8 transistor outputs 2 analog outputs	SM43-J-TA22	26
SM70		
12 digital inputs 2 analog inputs 8 relay outputs	SM70-J-R20	26
12 digital inputs 2 analog inputs 8 relay outputs	SM70-J-T20	26
12 digital inputs 2 analog inputs 8 relay outputs 2 analog outputs	SM70-J-RA22	26
12 digital inputs 2 analog inputs 8 transistor outputs 2 analog outputs	SM70-J-TA22	26

4.1 Samba

SM35-J-xxx / SM43-J-xxx / SM70-J-xxx

Samba 3.5 | Samba 4.3 | Samba 7



Features:

HMI

- Size: 3.5", 4.3", 7"
- High quality color touchscreen
- Multi-language display
- Built-in Alarm Screens

PLC

- I/O options include digital, analog, and high speed
- Auto-tune PID, up to 2 independent loops
- Recipe programs and data logging via data tables
- Function Blocks

Communication

Built-in ports:

- 1 Mini USB for programming for 4.3" & 7" models,
- 1 RS232 for 3.5" model

Add-on ports:

- 1 Serial/Ethernet
- 1 CANbus

Protocols:

- MODBUS TCP
- SNMP V1
- CANopen, UniCAN, CANlayer2
- BACnet, KNX and M-Bus via gateway
- FB Protocol: for any 3rd party protocol

General Features:

- E-mail & SMS
- 3G Modem support
- Remote access utilities

Full-function PLC with built-in, high-resolution full-color touch screen and built-in I/O configuration. Great look, incredible price.



SAMBA 3.5"



SAMBA 4.3"



SAMBA 7"



Article Number	SAMBA 3.5		SAMBA 4.3	SAMBA 7
I/O Options				
Total supported I/Os	22			
Built-in	According to model (See Built-in I/Os table below)			
I/O Expansion	—			
Remote I/O Expansion	Use EX-RC1 adapters to further extend the number of I/Os ¹			
COM Modules	Fit up to 1 CANbus, 1 RS232/RS485 ³ or 1 Ethernet			
Program				
Application Memory	Application Logic: 80 KB • Images: 1.5 MB • Fonts: 320 KB		Application Logic: 192 KB • Images: 3 MB • Fonts: 320 KB	Application Logic: 192 KB • Images: 8 MB • Fonts: 512 KB
Scan Time	15µs per 1K of typical application			
Memory Operands	512 coils, 256 registers, 32 long integers (32-bit), 32 double words (32-bit unsigned), 24 floats, 32 timers (32-bit), 16 counters. Additional non-retainable operands: 64 X-bits, 32 X-integers, 16 X-long integers, 16 X-double words (32-bits unsigned)			
HMI Panel				
Color Touchscreen	Resistive, Analog			
Cut Out Height x Width (mm)	92 x 92		122.5 x 91.5	193 x 125
Resolution	320 x 240 (QVGA)		480 x 272	800 x 480 (WVGA)
Keys	Displays virtual keyboard when the application requires data entry			
Environment				
Protection	IP66, IP65, NEMA4X (when panel mounted)			
Operating Temperature	0 to 50°C			
Standards	CE, UL, EAC, UL Hazardous Locations, Class I, Division 2 ²			
General				
Battery	7 years typical at 25°C, battery back-up for RTC and system data, including variable data			
Clock	Real-time clock functions (date and time)			

¹ Ex-RC1: via CANbus, integrate standard Unitronics¹ I/O modules at distances of up to 1000m. Refer to website for more information.

² For a list of relevant models, contact Unitronics.

Samba™ models - Built-in I/O configurations

Article	Summary	Inputs ¹				Outputs				Operating Voltage
		Digital ²	HSC/Shaft-encoder ²	Analog	Temperature Measurement	Transistor ³	PWM/HSO ³	Relay	Analog	
SM35-J-R20 SM43-J-R20 SM70-J-R20	10 Digital, 2 D/A Inputs ⁴ , 8 Relay Outputs	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	—	—	8	—	24VDC
SM35-J-T20 SM43-J-T20 SM70-J-T20	10 Digital, 2 D/A Inputs, 8 Transistor Outputs	12	3 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	8 pnp	7 0.5kHz	—	—	24VDC
SM35-J-RA22 SM43-J-RA22 SM70-J-RA22	12 Digital, 1 HSC/Shaft- encoder, 2 AI, 2 PT100/TC, 8 Relay, 2 AO	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 12/14-bit	2 PT100/TC	—	—	8	2 0-10V, 4-20mA, 12-bit	24VDC
SM35-J-TA22 SM43-J-TA22 SM70-J-TA22	12 Digital, 1 HSC/Shaft- encoder, 2 AI, 2 PT100/TC, 8 Transistor, 2 AO	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 12/14-bit	2 PT100/TC	8 pnp	5 0.5kHz	—	2 0-10V, 4-20mA, 12-bit	24VDC

¹ In some models certain inputs are adaptable via wiring and software settings, and can function as digital or analog.

Adapting requires input pins. This reduces the number of digital inputs.

Pin requirements: Each analog input requires 1 pin.

Example: SM35-J-R20 offers 12 digital inputs. Implementing 2 analog inputs requires 2 pins, leaving 10 pins free.

² The total number of digital inputs listed includes high-speed and adaptable inputs.

³ The total number of digital outputs listed includes high-speed outputs.

⁴ When selecting NPN for the digital inputs, the 2 Analog inputs cannot be used.



Notes

5 Vision™ Series

	Type	Page
VisiLogic™ All-in-One programming software		30
Smart Utilities		31
Vision 1040	V1040-T20B	32
Vision 1210	V1210-T20BJ	32
Vision 700	V700-T20BJ	34
Vision 560	V560-T25B	36
Vision 570	V570-57-T20B / V570-57-T20B-J	36
Vision 430	V430-J-xxx	38
Vision 350	V350-J-xxx	40
Vision 130	V130-J-xxx	42

VisiLogic™ All-in-One programming software**A single, intuitive environment for all your application needs****Hardware Configuration**

Intuitive set up: controller, I/Os, and COM channels

**Ladder Programming**

Rapidly drag & drop elements and Function Blocks

**HMI Application**

Create beautiful HMI displays – includes rich image library

**Alarms: Built-in Screens**

Effectively alert staff via Alarm screens

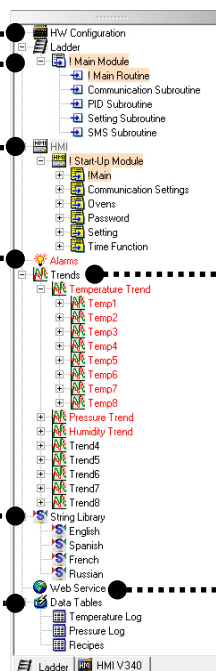
**Languages - String Library**

Instantly switch HMI language via screen touch

**Data Tables**

Create logs, import/export data, implement recipes

Software features vary according to controller model

**Trend Graphs**

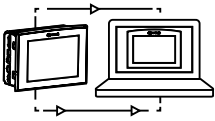
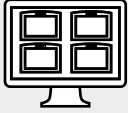
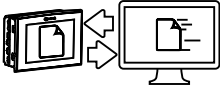
Display dynamic values in real-time

**Web Server**

Display and edit application values via browser

Smart Utilities

Remote Access | Efficient Data Management and more

Utility Name	Function	Key Features	Targeted Users
Remote Access 	View and control a PLC directly from PC, via local or remote connection	- View an HMI panel: use the PC keyboard + mouse to run the HMI application - Operand and Data Table values: view values during runtime, import and export values to/from Excel/.csv files	- Operators requiring Remote Access - System integrators: remote debugging, troubleshooting, fault-finding
Remote Operator 	Simultaneously view and operate the HMI panels of multiple PLCs in multiple locations	- Easily place HMI panels side-by-side to monitor distributed systems or applications in several locations - Run the HMI applications via PC keyboard + mouse	- Control room operators - Installation managers
DataXport 	Create Data Logs from Data Tables and operand values in PLCs	- Harvest data from multiple PLCs on demand or according to time/date - Export the data to ± Excel/.csv files - Automatically email files	- Data analysts - Plant managers - Process engineers
UniDownload Designer 	Create compressed VisiLogic / U90Ladder applications (.udc files) for secure installation in local or remote PLCs	- Prevent end-users from uploading and opening the application - Include an OS to be installed at download Set a download channel, restrict end-user actions after installation and more	OEMs / System Integrators can: - Protect source code - Enable customers to install an application without using VisiLogic or U90Ladder
Download Manager & UniDownloader 	Securely install .udc applications in local or remote PLCs	- Download Manager: installs the same application in multiple PLCs - UniDownloader: installs an application in a single PLC	OEMs / System Integrators in installations with high security requirements
SD Card Suite 	Remotely access and manage SD cards and their data	- Browse a remote PLC's SD card - Read/write data, including Data Table files - View SD card contents - Trends, logs, alarm history, data tables - export to Excel	- Data analysts - Plant managers - Process engineers
UniVision Licensing 	Safeguard your PLC application security	- Embeds unique licenses in the PLC, which enables application to run only on a licensed PLC - Option to activate or deactivate different sections of your application - Prevents theft of applications	- System integrators - OEMs
UniOPC Server 	Exchange data between Unitronics PLCs and OPC-supported software	- Create channel to connect PLCs to SCADA systems, such as plant control rooms - Compliant with the OPC foundation standards	Control room operators
UniDDE 	Exchange data with Windows based applications	Enables data exchange between Unitronics PLCs and software that supports Microsoft's Dynamic Data Exchange protocols, like Excel	Control rooms operators
Programming tools for developers 	Easily implement communication between PLC & PC applications	Using ActiveX & .NET communication drivers	Developers

Features:

HMI

- Size: 12.1" and 10.4"
- High quality color touchscreen
- Multi-language display
- Built-in Alarm Screens

PLC

- I/O options include digital, analog, high speed, temperature, and weight measurement
- Expand up to 1000 I/Os
- Auto-tune PID, up to 24 independent loops
- Recipe programs and data logging via data tables
- MicroSD card - log, backup, clone & more
- Function Blocks

Communication

Built-in ports:

- 1 Mini USB for programming
- 1 CANbus
- 2 Isolated RS485/RS232

Add-on ports:

- 1 Serial/Ethernet

Protocols:

- MODBUS TCP
- SNMP V1
- CANopen, CANlayer2, UniCAN
- BACnet, KNX and M-Bus via gateway
- FB Protocol: for any 3rd party protocol

General Features:

- Web server
- E-mail & SMS
- Remote access utilities
- 3G Modem support

Advanced PLC with a built-in 12.1"/10.4" high-resolution color touch screen.
Snap in I/Os to expand up to 1000 I/Os.



V1210



V1040



Snap-in I/O

Plugs directly into the back of your PLC

Timothy Moulder,
Engineer at Black & Decker

«I've not yet encountered a job that a Unitronics PLC was unable to cover.»

Article Number	Vision 1040 V1040-T20B	Vision 1210 V1210-T20BJ
I/O Options		
Total supported I/Os	1000	
I/O Expansion	Snap-in I/O Modules plug directly into the back of the Vision unit (See Snap-in I/O Modules- page 61). Local or Remote I/Os may be added via expansion port or via CANbus (See I/O Expansion Modules- page 60).	
Local I/O Expansion	Use Local Expansion Adapters to add up to 8 modules	
Remote I/O Expansion	Use EX-RC1 adapters to further extend the number of I/Os ¹	
Program		
Application Memory	Application Logic: 2MB • Images: 32MB • Fonts: 1MB	
Scan Time	9µsec per 1K of typical application	
Memory Operands	8192 coils, 4096 registers, 512 long integers (32 bit), 256 double words (32 bit unsigned), 64 floats, 384 timers (32_bit), 32_counters Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words	
HMI Panel		
Color Touchscreen	Resistive, Analog	
Cut Out Height x Width (mm)	230 x 274	228.5 x 297
Resolution	800 x 600 (SVGA)	
Keys	9 programmable function keys	Virtual Keyboard
Environment		
Protection	IP65 / NEMA4X (when panel mounted)	IP66, IP65 and NEMA4X (when panel mounted)
Operating Temperature	0 to 50°C	
Standards	UL, CE, EAC, UL Hazardous Locations, Class I, Division 2 ²	
General		
Battery	7 years typical at 25°C, battery back-up for all memory sections and RTC	
Clock	Real-time clock functions (date and time)	
Power Supply	12/24VDC ³	

¹ Ex-RC1: via CANbus, integrate standard Unitronics' I/O modules at distances of up to 1000m.² For a list of relevant models, contact Unitronics.³ 12V applies to PLC power supply only, and not to the I/O

V700

Vision 700

Features:

HMI

- Size: 7"
- High quality color touchscreen
- Multi-language display
- Built-in Alarm Screens

PLC

- I/O options include digital, analog, high speed, temperature, and weight measurement
- Expand up to 1000 I/Os
- Auto-tune PID, up to 24 independent loops
- Recipe programs and data logging via data tables
- MicroSD card - log, backup, clone & more
- Function Blocks

Communication

Built-in ports:

- 1 Ethernet TCP/IP
- 1 Mini USB for programming
- 1 RS485/RS232

Add-on ports:

- 1 Serial/Profibus
- 1 CANbus

Protocols:

- MODBUS TCP
- SNMP V1
- CANopen, CANlayer2, UniCAN
- BACnet, KNX and M-Bus via gateway
- FB Protocol: for any 3rd party protocol

General Features:

- Web server
- E-mail & SMS
- 3G Modem support
- Remote access utilities

Advanced PLC with a built-in
7" high-resolution color touch screen.
Snap in I/Os to expand up to 1000 I/Os.



V700



«Reliability, ease of use, connectivity and competitive prices are Unitronics' main strengths.»

Mr. Andrea Della Bosca,
EV srl

Article Number	Vision 700 V700-T20BJ
I/O Options	
Total supported I/Os	1000
I/O Expansion	Snap-in I/O Modules plug directly into the back of the Vision unit (See Snap-in I/O Modules- page 61). Local or Remote I/Os may be added via expansion port or via CANbus (See I/O Expansion Modules- page 60).
Local I/O Expansion	Use Local Expansion Adapters to add up to 8 modules
Remote I/O Expansion	Use EX-RC1 adapters to further extend the number of I/Os ¹
Program	
Application Memory	Application Logic: 2MB • Images: 40MB • Fonts: 1MB
Scan Time	9µsec per 1K of typical application
Memory Operands	8192 coils, 4096 registers, 512 long integers (32-bit), 256 double words (32-bit unsigned), 64 floats, 384 timers (32-bit), 32 counters. Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words
HMI Panel	
Color Touchscreen	Resistive, Analog
Cut Out Height x Width (mm)	125 x 193
Resolution	800 x 400 (SVGA)
Keys	Virtual Keyboard
Environment	
Protection	IP66, IP65 and NEMA4X
Operating Temperature	0 to 50°C
Standards	CE, UL, EAC, UL Hazardous Locations, Class I, Division 2 ²
General	
Battery	7 years typical at 25°C, battery back-up for all memory sections and RTC
Clock	Real-time clock functions (date and time)
Power Supply	12/24VDC ³

¹ EX-RC1: via CANbus, integrate standard Unitronics' I/O modules at distances of up to 1000m.

² For a list of relevant models, contact Unitronics.

³ 12V applies to PLC power supply only, and not to the I/O.



Features:

HMI

- Size: 5.7"
- High quality color touchscreen
- Multi-language display
- Built-in Alarm Screens

PLC

- I/O options include digital, analog, high speed, temperature, and weight measurement
- Expand up to 1000 I/Os
- Auto-tune PID, up to 24 independent loops
- Recipe programs and data logging via data tables
- MicroSD/ SD card – log, backup, clone & more
- Function Blocks

Communication

Built-in ports:

- 1 Mini USB for programming in V570
- 1 CANbus
- 2 Isolated RS485/ RS232

Add-on ports:

- 1 Serial/Ethernet

Protocols:

- MODBUS TCP
- SNMP V1
- CANopen, CANlayer2, UniCAN
- BACnet, KNX and M-Bus via gateway
- FB Protocol: for any 3rd party protocol

General Features:

- Web server
- E-mail & SMS
- 3G Modem support
- Remote access utilities

Advanced PLC with a built-in
5.7" high-resolution color touch screen.
Snap in I/Os to expand up to 1000 I/Os.



V570-J



V560



«For a first time user, I had a great experience.

I look forward to incorporating this brand of product on future jobs.»

Jeremy Charles Keene,
Controls Manager at General Broach Company

Article Number	Vision 570 V570-57-T20B / V570-57-T20B-J	Vision 560 V560-T25B
I/O Options		
Total supported I/Os	1000	
I/O Expansion	Snap-in I/O Modules plug directly into the back of the Vision unit (See Snap-in I/O Modules- page 61). Local or Remote I/Os may be added via expansion port or via CANbus (See I/O Expansion Modules- page 60).	
Local I/O Expansion	Use Local Expansion Adapters to add up to 8 modules	
Remote I/O Expansion	Use EX-RC1 adapters to further extend the number of I/Os ¹	
Program		
Application Memory	Application Logic: 2MB • Images: 16MB • Fonts: 1MB	
Scan Time	9µsec per 1K of typical application	
Memory Operands	8192 coils, 4096 registers, 512 long integers (32-bit), 256 double words (32-bit unsigned), 64 floats, 384 timers (32-bit), 32 counters. Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words	
HMI Panel		
Color Touchscreen	Resistive, Analog	
Cut Out Height x Width (mm)	124.5 x 182	126.0 x 209
Resolution	320 x 240 (QVGA)	
Keys	Virtual Keyboard	24 programmable keys Labeling options – function keys or customized
Environment		
Protection	IP66, IP65, NEMA4X (when panel mounted)	IP65, NEMA4X (when panel mounted)
Operating Temperature	0 to 50°C	
Standards	CE, UL, EAC, UL Hazardous Locations, Class I, Division 2 ²	CE, UL, EAC
General		
Battery	7 years typical at 25°C, battery back-up for all memory sections and RTC	
Clock	Real-time clock functions (date and time)	
Power Supply	12/24VDC ³	

¹ EX-RC1: via CANbus, integrate standard Unitronics' I/O modules at distances of up to 1000m.

² For a list of relevant models, contact Unitronics.

³ 12V applies to PLC power supply only, and not to the I/O.



Features:

HMI

- Size: 4.3"
- High quality color touchscreen
- Multi-language display
- Built-in Alarm Screens

PLC

- I/O options include digital, analog, high speed, temperature, and weight measurement
- Expand up to 512 I/Os
- Auto-tune PID, up to 24 independent loops
- Recipe programs and data logging via data tables
- Micro SD card - log, backup, clone & more
- Function Blocks

Communication

Built-in ports:

- 1 Mini USB for programming
- 1 RS485/RS232

Add-on ports:

- 1 Serial/Ethernet/Profibus
- 1 CANbus

Protocols:

- MODBUS TCP
- SNMP V1
- CANopen, CANlayer2, UniCAN
- BACnet, KNX and M-Bus via gateway
- FB Protocol: for any 3rd party protocol

General Features:

- Web server
- E-mail & SMS
- 3G Modem support
- Remote access utilities

Advanced PLC with a built-in 4.3" wide-aspect color touch screen. Includes built-in I/O configuration, expand up to 512 I/Os.



V430-J



«The huge advantage of this PLC was that – with everything built-in the communications and use of tags in the HMI was so simple and intuitive.»

Ashley Parr,
HPS

I/O Options	
Total supported I/Os	512
Built-in	According to model (See Built-in I/Os table below)
I/O Expansion	Add Local I/O via expansion port • Add Remote I/Os via CANbus (See I/O Expansion Modules- page 60)
Local I/O Expansion	Use Local Expansion Adapters to add up to 8 modules
Remote I/O Expansion	Use EX-RC1 adapters to further extend the number of I/Os ¹
Program	
Application Memory	Application Logic: 1MB • Images: 12MB • Fonts: 320KB
Scan Time	15µ sec per 1K of typical application
Memory Operands	8192 coils, 4096 registers, 512 long integers (32-bit), 256 double words (32-bit unsigned), 64 floats, 384 timers (32-bit), 32 counters Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words
HMI Panel	
Color Touchscreen	Resistive, Analog
Cut Out Height x Width (mm)	91.5 x 122.5
Resolution	480 x 272
Keys	5 programmable
Environment	
Protection	IP66, IP65, NEMA4X (when panel mounted)
Operating Temperature	0 to 50°C
Standards	CE, UL, EAC, UL Hazardous Locations, Class I, Division 2 ²
General	
Battery	7 years typical at 25°C, battery back-up for all memory sections and RTC
Clock	Real-time clock functions (date and time)

¹ EX-RC1: via CANbus, integrate standard Unitronics' I/O modules at distances of up to 1000m.² For a list of relevant models, contact Unitronics.

Vision430™ models - Built-in I/O configurations

Article	Summary	Inputs ¹				Outputs				Operating Voltage
		Digital ²	HSC/Shaft-encoder ²	Analog	Temperature Measurement	Transistor ³	PWM/HSO ³	Relay	Analog	
V430-J-B1	No onboard I/Os	—	—	—	—	—	—	—	—	12/24VDC
V430-J-RH2	10 Digital, 2 D/A Inputs ¹ 6 Relay Outputs	12	3 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	—	—	6	—	24VDC
V430-J-R34	20 Digital, 2 D/A Inputs ¹ 12 Relay Outputs	22	3 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	—	—	12	—	24VDC
V430-J-TR34	20 Digital, 2 D/A Inputs ¹ 8 Relay, 4 High-speed Transistor Outputs	22	3 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	4 nnp	4 (3 PTO) 200 kHz max	8	—	24VDC
V430-J-RH6	6 Digital, 2 D/A ¹ 4 Analog Inputs 6 Relay Outputs	8	1 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA and 4 0-20mA, 4-20mA 10-bit	—	—	—	6	—	24VDC
V430-J-RA22	8 Digital, 2 D/A, 2 TC/PT100/ Digital Inputs ¹ 8 Relay, 2 Analog Outputs	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 14-bit	2 Thermocouple, PT100	—	—	8	2 0-10V, 4 -20mA 12-bit	24VDC
V430-J-TRA22	8 Digital, 2 D/A, 2 TC/PT100/ Digital Inputs ¹ 4 Relay, 2 Analog, 4 High-Speed Transistor Outputs	12	1 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 14-bit	2 Thermocouple, PT100	4 nnp	4 (2 PTO) 200 kHz max	4	2 0-10V, 4 -20mA 12-bit	24VDC
V430-J-T2	10 Digital, 2 D/A Inputs ¹ 12 Transistor Outputs	12	3 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	12 pnp	7 0.5kHz	—	—	24VDC
V430-J-T38	20 Digital, 2 D/A Inputs ¹ 16 Transistor Outputs	22	2 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	16 pnp	7 0.5kHz	—	—	24VDC
V430-J-TA24	8 Digital, 2 D/A, 2 TC/PT100/ Digital Inputs ¹ 10 Transistor, 2 Analog Outputs	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 14-bit	2 Thermocouple, PT100	10 pnp	5 0.5kHz	—	2 0-10V, 4 -20mA 12-bit	24VDC

¹ In some models certain inputs are adaptable via wiring and software settings, and can function as digital, high-speed, analog, and in certain models as TC or PT100.

Adapting requires input pins. This reduces the number of digital inputs. Pin requirements:

- Each high-speed requires 1 or 2 pins according to high-speed mode.
- Each analog input requires 1 pin.
- Each TC requires 2 pins per TC input
- The first PT input requires 3 pins and two additional pins for each additional PT input.

Example: V430-J-RA22 offers 12 digital inputs. Implementing 2 TC inputs requires 4 pins, leaving 8 pins free. Implementing 2 PT inputs uses 5 input pins.

² The total number of digital inputs listed includes high-speed and adaptable inputs.

³ The total number of digital outputs listed includes high-speed outputs.



Features:**HMI**

- Size: 3.5"
- High quality color touchscreen
- Multi-language display
- Built-in Alarm Screens

PLC

- I/O options include digital, analog, high speed, temperature, and weight measurement
- Expand up to 512 I/Os
- Auto-tune PID, up to 24 independent loops
- Recipe programs and data logging via data tables
- Micro SD card - log, backup, clone & more
- Function Blocks

Communication**Built-in ports:**

- 1 Mini USB for programming
- 1 RS485/RS232

Add-on ports:

- 1 Serial/Ethernet/Profibus
- 1 CANbus

Protocols:

- MODBUS TCP
- SNMP V1
- CANopen, UniCAN, CANlayer2
- BACnet, KNX and M-Bus via gateway
- FB Protocol: for any 3rd party protocol

General Features:

- Web server
- E-mail & SMS
- 3G Modem support
- Remote access utilities

Palm-sized All-in-One: advanced PLC with a 3.5" color touchscreen.
Includes built-in I/O configuration, expands up to 512 I/Os.

**V350-J**

60°C



-30°C

Extended temperature unit available:

Operational temperature range between -30°C to 60°C, available for panel Article: V350-JS-TA24.

Extended temperature available for Ethernet (Article: V100-S-ET2) and CANbus (Article: V100-S-CAN).

I/O Options	
Total supported I/Os	512
Built-in	According to model (See Built-in I/Os table below)
I/O Expansion	Add Local I/O via expansion port • Add Remote I/Os via CANbus. (See I/O Expansion Modules- page 60)
Local I/O Expansion	Use Local Expansion Adapters to add up to 8 modules
Remote I/O Expansion	Use EX-RC1 adapters to further extend the number of I/Os ¹
Program	
Application Memory	Application Logic: 1MB • Images: 8MB • Fonts: 320KB
Scan Time	15µ sec per 1K of typical application
Memory Operands	8192 coils, 4096 registers, 512 long integers (32-bit), 256 double words (32-bit unsigned), 64 floats, 384 timers (32-bit), 32 counters Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words
HMI Panel	
Color Touchscreen	Resistive, Analog
Cut Out Height x Width (mm)	92 x 92
Resolution	320 x 240 (QVGA)
Keys	5 programmable keys. Labeling options - function keys, arrows, or customized
Environment	
Protection	IP66, IP65, NEMA4X (when panel mounted)
Operating Temperature	0°C to 50°C, For V350-JS-TA24: -30°C to 60°C ²
Standards	CE, , EAC, UL Hazardous Locations, Class I, Division 2 ³
General	
Battery	7 years typical at 25°C, battery back-up for all memory sections and RTC
Clock	Real-time clock functions (date and time)

¹ EX-RC1: via CANbus, integrate standard Unitronics' I/O modules at distances of up to 1000m.

² Extended temperature cards: CANbus p/n: V100-S-CAN, Ethernet p/n V100-S-ET2.

³ For a list of relevant models, contact Unitronics.

Vision350™ models - Built-in I/O configurations

Article ⁵	Summary	Inputs ¹				Outputs				Operating Voltage
		Digital ²	HSC/Shaft-encoder ²	Analog	Temperature Measurement	Transistor ³	PWM/HSO ³	Relay	Analog	
V350-J-B1 V350-35-B1	No onboard I/Os	—	—	—	—	—	—	—	—	12/24VDC
V350-J-TR20 V350-35-TR20	10 Digital, 2 D/A Inputs ¹ 6 Relay Outputs 2 High-speed Transistor Outputs	12	3 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	2 npn	2 (2 PTO) 200 kHz max	6	—	24VDC
V350-J-R34 V350-35-R34	20 Digital, 2 D/A Inputs ¹ 12 Relay Outputs	22	3 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	—	—	12	—	24VDC
V350-J-TR34 V350-35-TR34	20 Digital, 2 D/A Inputs ¹ 8 Relay, 4 High-speed Transistor Outputs	22	3 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	4 npn	4 (3 PTO) 200 kHz max	8	—	24VDC
V350-J-TR6 V350-35-TR6	6 Digital, 2 D/A ¹ 4 Analog Inputs 6 Relay Outputs 2 High-speed Transistor Outputs	8	1 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA and 4 0-20mA, 4-20mA 10-bit	—	2 npn	2 (2 PTO) 200 kHz max	6	—	24VDC
V350-J-RA22 V350-35-RA22	8 Digital, 2 D/A, 2 TC/PT100/ Digital Inputs ¹ 8 Relay, 2 Analog Outputs	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 14-bit	2 Thermocouple, PT100	—	—	8	2 0-10V, 4 -20mA 12-bit	24VDC
V350-J-TRA22 V350-35-TRA22	8 Digital, 2 D/A, 2 TC/PT100/ Digital Inputs ¹ 4 Relay, 2 Analog, 4 High-Speed Transistor Outputs	12	1 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 14-bit	2 Thermocouple, PT100	4 npn	4 (2 PTO) 200 kHz max	4	2 0-10V, 4 -20mA 12-bit	24VDC
V350-J-T2 V350-35-T2	10 Digital, 2 D/A Inputs ¹ 12 Transistor Outputs	12	3 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	12 pnp	7 0.5kHz	—	—	24VDC
V350-J-T38 V350-35-T38	20 Digital, 2 D/A Inputs ¹ 16 Transistor Outputs	22	2 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	16 pnp	7 0.5kHz	—	—	24VDC
V350-J-TA24 V350-JS-TA24 ⁴ V350-35-TA24	8 Digital, 2 D/A, 2 TC/PT100/ Digital Inputs ¹ 10 Transistor, 2 Analog Outputs	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 14-bit	2 Thermocouple, PT100	10 pnp	5 0.5kHz	—	2 0-10V, 4 -20mA 12-bit	24VDC

¹ In some models certain inputs are adaptable via wiring and software settings, and can function as digital, high-speed, analog, and in certain models as TC or PT100. Adapting requires input pins. This reduces the number of digital inputs. Pin requirements:

- Each high-speed requires 1 or 2 pins according to high-speed mode.
- Each analog input requires 1 pin.
- Each TC requires 2 pins per TC input
- The first PT input requires 3 pins, and two additional pins for each additional PT input.

Example: V350-35-RA22 offers 12 digital inputs. Implementing 2 TC inputs requires 4 pins, leaving 8 pins free.
Implementing 2 PT inputs uses 5 input pins.
² The total number of digital inputs listed includes high-speed and adaptable inputs.

³ The total number of digital outputs listed includes high-speed outputs.

⁴ Extended temperature unit

⁵ To order a classic V350 with a Bezel panel, switch the „J“ in the model number to „33“, ex. V350, V350-33- TR20



Features:

HMI

- Size: 2.4"
- Monochrome
- Multi-language display
- Built-in Alarm Screens

PLC

- I/O options include digital, analog, high speed, temperature, and weight measurement
- Expand up to 256 I/Os
- Auto-tune PID, up to 24 independent loops
- Recipe programs and data logging via data tables
- Micro SD card - log, backup, clone & more
- Function Blocks

Communication

Built-in ports:

- 1 RS485/RS232

Add-on ports:

- 1 Serial/Ethernet/Profibus
- 1 CANbus

Protocols:

- MODBUS TCP
- SNMP V1
- CANopen, UniCAN, CANlayer2
- BACnet, KNX and M-Bus via gateway
- FB Protocol: for any 3rd party protocol

General Features:

- Web server
- E-mail & SMS
- 3G Modem support
- Remote access utilities

Palm-size, powerful PLC with built-in black & white LCD 2.4", keypad and I/Os, expands up to 256 I/Os.



V130-J



«The perfect solution for our need, the Vision130™ is easy to program, user-friendly and backed up with responsive tech support.»

Michael Lamore
President of Barrier1

I/O Options	
Total supported I/Os	256
Built-in	According to model (See Built-in I/Os table below)
I/O Expansion	Add Local I/O via expansion port • Add Remote I/Os via CANbus. (See I/O Expansion Modules- page 60)
Local I/O Expansion	Use Local Expansion Adapters to add up to 8 modules
Remote I/O Expansion	Use EX-RC1 adapters to further extend the number of I/Os ¹
Program	
Application Memory	Application Logic: 488KB • Images: 128KB • Fonts: 128KB
Scan Time	20µ sec per 1K of typical application
Memory Operands	4096 coils, 2048 registers, 256 long integers (32-bit), 64 double words (32-bit unsigned), 24 floats, 192 timers (32-bit), 24 counters Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words
HMI Panel	
Touchscreen	—
Cut Out Height x Width (mm)	92 x 92
Resolution	128 x 64
Keys	20, including 10 user labeled keys (slide kit sold separately)
Environment	
Protection	NEMA4X, IP66, IP65 (when panel mounted)
Operating Temperature	0 to 50°C
Standards	UL, CE, EAC, UL Hazardous Locations, Class I, Division 2 ²
General	
Battery	7 years typical at 25°C, battery back-up for all memory sections and RTC
Clock	Real-time clock functions (date and time)

¹ EX-RC1: via CANbus, integrate standard Unitronics' I/O modules at distances of up to 1000m.

² For a list of relevant models, contact Unitronics.

Vision130™ models - Built-in I/O configurations

Article ⁴	Summary	Inputs ¹				Outputs				Operating Voltage
		Digital ²	HSC/Shaft-encoder ²	Analog	Temperature Measurement	Transistor ³	PWM/HSO ³	Relay	Analog	
V130-33-B1 V130-J-B1	No onboard I/Os	—	—	—	—	—	—	—	—	12/24VDC
V130-33-TR20 V130-J-TR20	10 Digital, 2 D/A Inputs ¹ 6 Relay Outputs 2 High-speed Transistor Outputs	12	3 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	2 nnp	2 (2 PTO) 200 kHz max	6	—	24VDC
V130-33-R34 V130-J-R34	20 Digital, 2 D/A Inputs ¹ 12 Relay Outputs	22	3 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	—	—	12	—	24VDC
V130-33-TR34 V130-J-TR34	20 Digital, 2 D/A Inputs ¹ 8 Relay, 4 High-speed Transistor Outputs	22	3 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	4 nnp	4 (3 PTO) 200 kHz max	8	—	24VDC
V130-33-TR6 V130-J-TR6	6 Digital, 2 D/A ¹ 4 Analog Inputs 6 Relay Outputs 2 High-speed Transistor Outputs	8	1 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA and 4 0-20mA, 4-20mA 10-bit	—	2 nnp	2 (2 PTO) 200 kHz max	6	—	24VDC
V130-33-RA22 V130-J-RA22	8 Digital, 2 D/A, 2 TC/PT100/ Digital Inputs ¹ 8 Relay, 2 Analog Outputs	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 14-bit	2 Thermocouple, PT100	—	—	8	2 0-10V, 4-20mA 12-bit	24VDC
V130-33-TRA22 V130-J-TRA22	8 Digital, 2 D/A, 2 TC/PT100/ Digital Inputs ¹ 4 Relay, 2 Analog, 4 High-Speed Transistor Outputs	12	1 200kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 14-bit	2 Thermocouple, PT100	4 nnp	4 (2 PTO) 200 kHz max	4	2 0-10V, 4-20mA 12-bit	24VDC
V130-33-T2 V130-J-T2	10 Digital, 2 D/A Inputs ¹ 12 Transistor Outputs	12	3 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	12 pnp	7 0.5kHz	—	—	24VDC
V130-33-T38 V130-J-T38	20 Digital, 2 D/A Inputs ¹ 16 Transistor Outputs	22	2 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	16 pnp	7 0.5kHz	—	—	24VDC
V130-33-TA24 V130-J-TA24	8 Digital, 2 D/A, 2 TC/PT100/ Digital Inputs ¹ 10 Transistor, 2 Analog Outputs	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 14-bit	2 Thermocouple, PT100	10 pnp	5 0.5kHz	—	2 0-10V, 4-20mA 12-bit	24VDC

¹ In some models certain inputs are adaptable via wiring and software settings, and can function as digital, high-speed, analog, and in certain models as TC or PT100. Adapting requires input pins. This reduces the number of digital inputs. Pin requirements:

- Each high-speed requires 1 or 2 pins according to high-speed mode.
- Each analog input requires 1 pin.
- Each TC requires 2 pins per TC input
- The first PT input requires 3 pins, and two additional pins for each additional PT input.

Example: V130-35-RA22 offers 12 digital inputs. Implementing 2 TC inputs requires 4 pins, leaving 8 pins free.
Implementing 2 PT inputs uses 5 input pins.
² The total number of digital inputs listed includes high-speed and adaptable inputs.

³ The total number of digital outputs listed includes high-speed outputs.

⁴ To order a classic V130 with a Bezel panel, switch the „J“ in the model number to „35“, ex. V130, V130-33-TR20



Notes

6 Unistream® Series

	Type	Page
UniStream Modular UniStream Built-in		46
UniLogic All-in-One Software		48
UniStream 7 Modular UniStream 10.4 Modular UniStream 15.6 Modular	USC-P-xxx / USP-xxx-xxx	50
UniStream 5 Built-in UniStream 7 Built-in	US7-Bxx-xxx / US5-Bxx-xxx	52
Expand up to 2048 I/O via Uni-I/O modules	UID-xxx / UIA-xxx / UIS-xxx	55

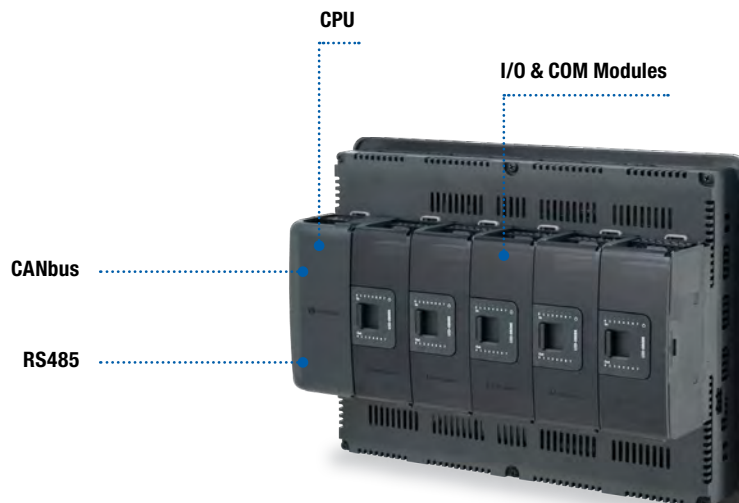
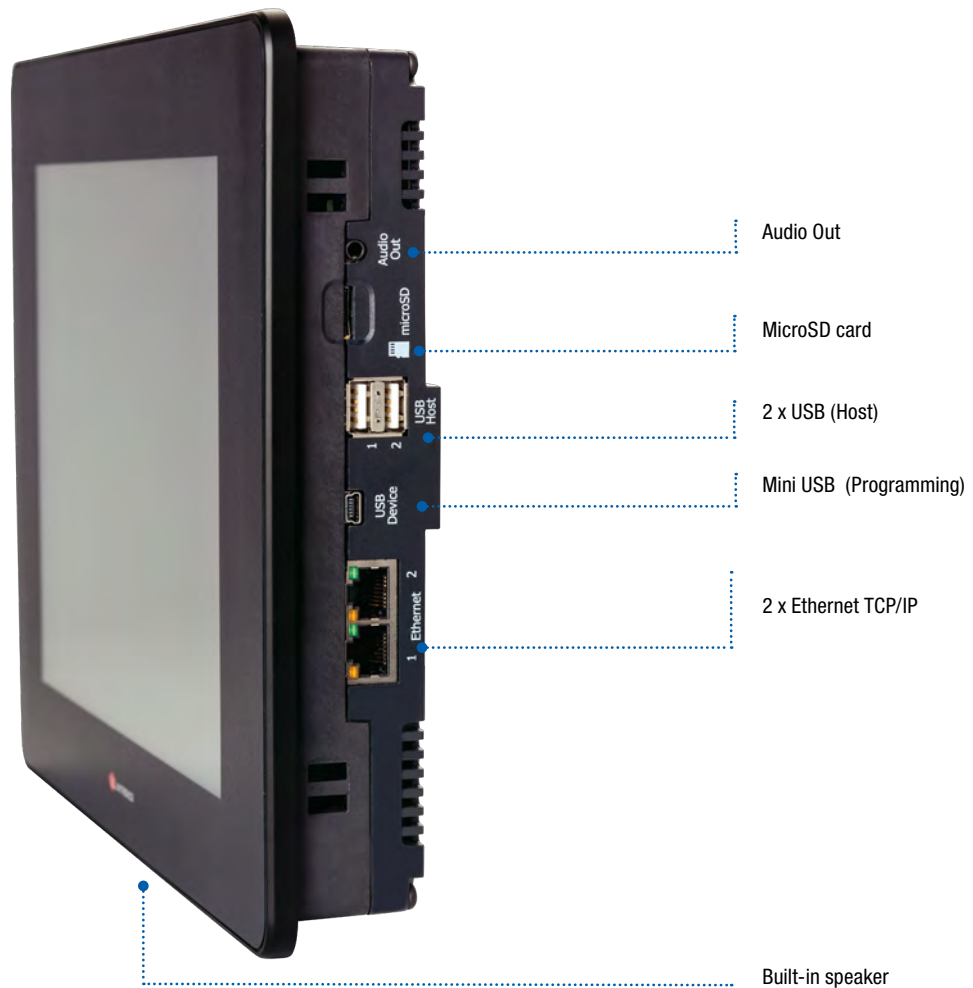
Powerful Award-winning Programmable Logic Controllers

For high-end automation projects, available in two All-in-One series: Modular & Built-in.

UniStream® Modular

Create a custom control solution, perfectly matched to your requirements

Uniquely designed to enable you to create a customized controller in three steps: select an HMI panel, snap in a CPU, and add any I/O or communication modules necessary for your specific application.



UniStream® Built-in

Space-saving PLC that delivers the functionality to control complex machines

PLC+HMI+I/O built into a single, superbly compact unit in a range of built-in I/O configurations. Available in two versions: Built-in and Built-in Pro.



UniLogic

UniStream

All-in-One programming environment:
 configure hardware & communications, program
 Ladder, design HMI & web pages, configure & control VFDs and more

New! Configure & Operate...

Unitronics VFDs using the same, efficient software

Build-it-Once...

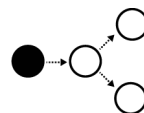
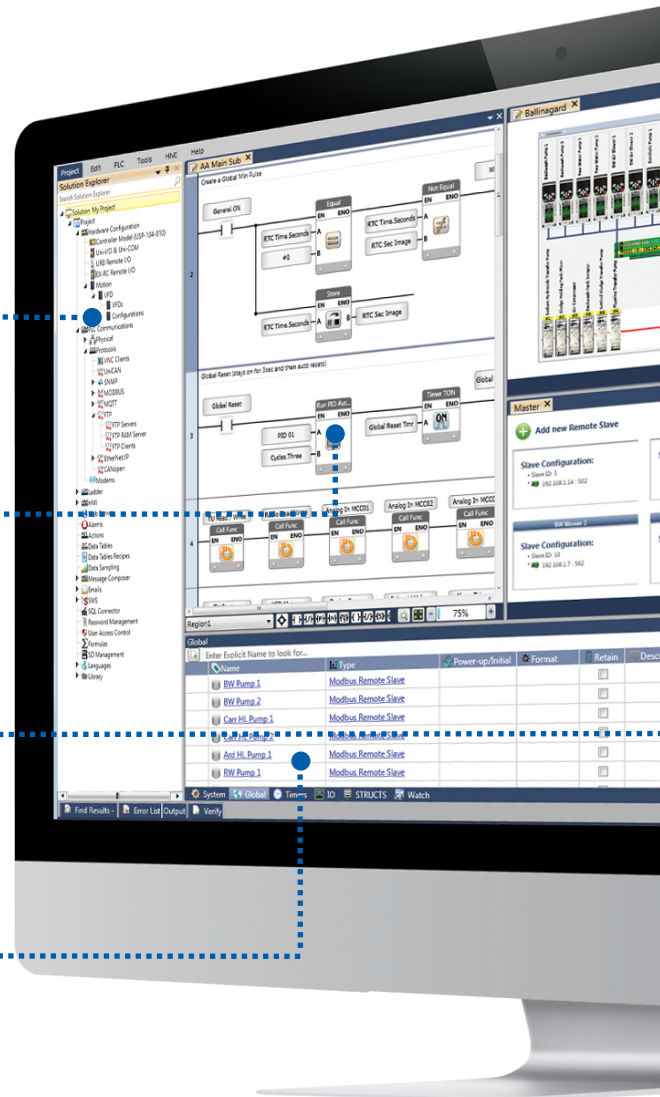
Reuse Library: Functions, HMI & Webpages

Context-sensitive...

Toolbox for Ladder, HMI & Web Elements

Power from C...

Structs & C Functions



MQTT

Via MQTT, UniStream bridges between the production floor all the way up to the MES. Supports MQTT as a 'client' that can both publish and subscribe to messages.



Structs – Tag Database on Steroids

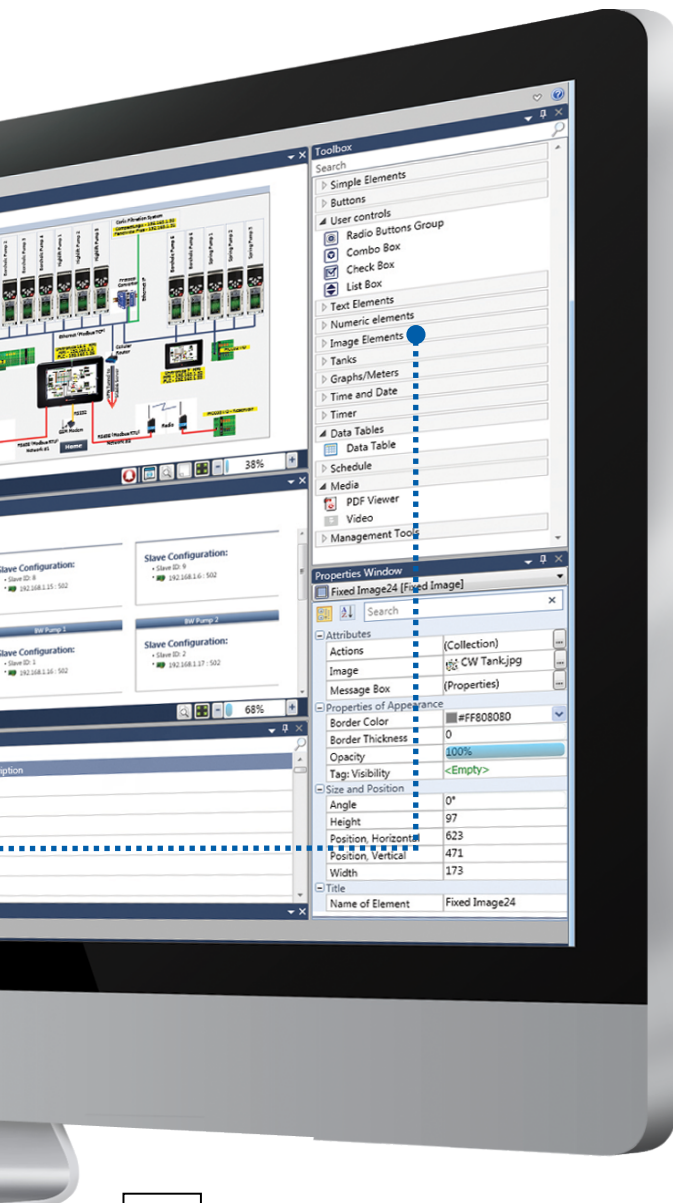
You create Structs - groups of data tags of different types organized into a single, logical unit - and reuse them across programs, especially with UDFBs (User Defined Function Blocks). UniLogic's built-in Structs enable you to configure and control hardware and complex functions such as Communications and PID.



Speed Ladder Programming – plus “C” Power

Build your Ladder: drag & drop elements that snap into place, error-free. Use the built-in C Function editor to write C functions. UniLogic means you 'write-it-once': create code to use, reuse, and export across projects.

Create UDFBs (User Defined Function Blocks) - self-contained functions for tasks such as oven control.



Power Data Tools – Data Sampler, Data Tables, Recipes, SQL

Data Samplers record dynamic application data, such as output values, at fixed intervals into files and display it as Trend graphs on the HMI.

Data Tables organize and manipulate data via Ladder, create data logs, implement Recipes, import/export values from/to Excel, allow users to enter/edit data into Data Tables via HMI panel, and more.

NEW SQL Connector: Access SQL databases, run Queries, connect Data Tables to SQL.



Web Server: Web Pages – No HMTL Required

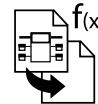
Design elegant web pages via a drag & drop interface, identical to the HMI editor. A rich graphic library is at your disposal.

The Web toolbox offers user controls and widgets, enabling the end user to view and enter application data via any web browser.



Design Beautiful HMI Displays – Stream Video, Audio, PDF

UniLogic's extensive free graphics library & HMI widgets enable you to be a graphic artist. The easy HMI editor supports layers, image transparency, overlap, rotation--plus drag & drop widgets, Video & Audio players, Data Tables, Trend graphs & Gauges to display run-time values, and more.



Build-it-Once, then Reuse – the Ultimate Time Saver

Add your UDFBs, HMI screens, HMI Custom Controls, and Web Pages to the Library-- then drag & drop them where needed; UniLogic takes care of the tags. Import your Library into any project, and share it with others.



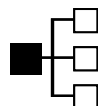
Languages – from Italian to Chinese at the Touch of a Button

UniLogic supports any language that you can type - including Asian languages such as Chinese, Japanese, and Korean. Instantly switch HMI language via user actions or program events.



Built-in Alarms – Easily Boost Application Safety

Compliant with ISA 18.2 standard guidelines for Alarm Management systems in the process industries. Detect & analyze Alarms, and take action. Export Alarm Logs via FTP to send via email, or copy directly from the controller via DOK. Alarms feature full multi-language support.



Communications – Configuration not Programming

Incredibly fast, easy to configure and implement, UniStream data communications run independently of Ladder.

A single PLC can contain multiple slave definitions—and multiple master definitions. Communicate with any device: plug-and-play protocols such as MODBUS, CANopen, SNMP, MQTT, and EtherNet/IP.

Use Message Composer to communicate with devices such as frequency converters and bar-code readers via any Ethernet, CANbus or serial 3rd -party protocol. Also supports CANLayer 2, FTP Client/Server, SMS, email, GSM/GPRS modem.

Features:**HMI**

- Size: 7", 10.4" or 15.6"
- High quality color touchscreen. UniStream 10.4" is also available with Multi-Touch screen
- Multi-language display
- Built-in Alarm Screens
- Media support: Video, Audio and PDF viewer
- Multi-level password protection – easy and fast

PLC

- I/O options include digital, analog, high speed, temperature, and weight measurement
- Expand locally: up to 2048 I/Os
- Expand remotely: via UniStream Ethernet-based I/O
- Auto-tune PID, up to 64 independent loops
- Recipes & data logging via data tables & sampling
- MicroSD card - log, backup, clone & more
- Function Blocks & Structs

Communication**Built-in ports:**

- 1 CANbus
- 2 Ethernet TCP/IP
- 1 RS485
- 2 USB host
- 1 Mini USB for programming

Add-on ports:

- Up to 8 RS232 (Using UAC-02RS2)
- Up to 4 RS232 + 4 RS485 (Using UAC-02RSC)

Protocols:

- MQTT Client
- EtherNet/IP
- MODBUS: Serial & TCP/IP
- CANopen, CANlayer2, UniCAN
- SNMP
- BACnet, KNX and M-Bus via gateway
- Message Composer for 3rd party protocols

General Features:

- SQL Client
- Web Server
- FTP server & client
- E-mail & SMS
- Remote access via VNC
- 3G Modem support

3 steps to an All-in-One controller:

select HMI panel, add the powerful

CPU, and snap on any I/O and COM modules. Expands up to 2048 I/Os.

**UniStream® 7"**

Available with
Multi-Touch

UniStream® 10.4"**UniStream® 15.6"**

Article Number	UniStream 7 USC-P-B10 • USP-070-B08 / USP-070-B10	UniStream 10.4 USC-P-B10 • USP-104-B10 / USP-104-M10	UniStream 15.6 USC-P-B10 • USP-156-B10
I/O Options			
Total supported I/Os	2048 (See I/O Expansion Modules- page 15)		
Onboard I/O modules	Fit up to 3 slim or 2 wide I/Os¹	Fit up to 5 slim or 3 wide I/Os¹	
I/O Expansion	Use Local Expansion Adapters to add up to 80 slim or 50 wide modules1		
Remote I/O via Ethernet	Use UniStream Ethernet-based Remote I/O adapters to add I/Os via Ethernet (See I/O Expansion Modules - page 55)		
Add-on COM modules	Supports up to 3 COM modules1	Supports up to 4 COM modules1	
Program			
Application Memory	8 MB		
HMI Panel			
Color Touchscreen	Resistive, Analog	Resistive, Analog / Multi-Touch	Resistive, Analog
Viewing Area Height x Width (mm)	USP-070-B08: 152.4 x 91.44 USP-070-B10: 154.08 x 85.92	211.2 x 158.4	344.23 x 193.53
Cut Out Height x Width (mm)	134.0 x 196.0	214.0 x 281.0	249.0 x 395.0
Resolution	800 x 480 (WVGA)	800 x 600 (SVGA)	1366 x 768
Keys	Virtual Keyboard		
Environment			
Protection	IP66, IP65 and NEMA4X when panel-mounted²		
Operating Temperature	-20°C to 55°C		0°C to 50°C
Standard	CE, UL, EAC, UL Hazardous Locations, Class I, Division 2⁴		
General			
Battery	4 years typical at 25°C, battery back-up for memory and RTC		
Clock	Real-time clock functions (date and time)		

¹ Add-on Modules, I/O and COM; the total number of modules, both I/O and COM that you can snap onboard an HMI panel is limited by the size of the panel.

I/O modules are "Slim" & "Wide" I/O module = 1.5 "Slim" or COM module.

² UniStream complies with IP66 and NEMA4X only if audio-jack seal is installed. Refer to HMI panel installation guide.

³ 12V applies to PLC power supply only, and not to the I/O

⁴ For a list of relevant models, contact Unitronics

Local Expansion Adapters

UAG-XK125	Short Range Kit, 125 cm
UAG-XKP125	Short Range + embedded Power Supply Kit, 125 cm
UAG-XK300	Short Range Kit, 300 cm
UAG-XKP300	Short Range + embedded Power Supply Kit, 300 cm
UAG-XKPLXXX	Long Range + embedded Power Supply, lengths: 600, 1200, 1500, 2000, 3000 cm

Uni-COM™ Communication Modules¹

UAC-01RS2	1x RS232
UAC-02RS2	2x RS232
UAC-02RSC	1x RS232 port and 1x RS485 port

Features:

HMI

- Size: 5", 7"
- High quality color touchscreen
- Multi-language display
- Built-in Alarm Screens
- Media support: Video*, Audio* and PDF viewer
- Multi-level password protection –easy and fast

PLC

- I/O options include digital, analog, high speed, temperature and weight measurement
- Expand locally: up to 2048 I/Os
- Expand remotely: via UniStream Ethernet-based I/O
- Auto-tune PID, up to 64 independent loops
- Recipes & data logging via data tables & sampling
- MicroSD card - log, backup, clone & more
- Function Blocks & Structs

Communication

Built-in ports:

- 1 Ethernet TCP/IP
- 1 USB host
- 1 Mini USB for programming

Add-on ports:**

- 1 CANbus
- 1 RS485
- 1 RS232

Protocols:

- MQTT Client
- EtherNet/IP
- MODBUS TCP
- CANopen, CANlayer2, UniCAN
- SNMP
- BACnet, KNX and M-Bus via gateway
- Message Composer for 3rd party protocols

General Features:

- SQL Client*
- Web Server*
- E-mail & SMS
- Remote access via VNC
- FTP server & client
- 3G Modem support

* Pro Version only. Model numbers including B5 refer to Built-in, B10 to Built-in Pro.

** Up to 2 serial modules and one CANbus module.

Powerful PLC in a superbly compact hardware profile: PLC+HMI+I/Os built into one single unit.
Available in two versions: Built-in and Built-in Pro.
Expands up to 2048 I/Os.



UniStream® 5"



UniStream® 7"

	UniStream 5	UniStream 7
I/O Options		
Total supported I/Os	2048	
Built-In	According to model (See Built-in I/Os configurations – page 54)	
I/O Expansion	Add Local I/O via expansion port (See I/O Expansion Modules – page 55) ¹	
Remote I/O Expansion	Use UniStream Ethernet-based Remote I/O adapters to add I/Os via Ethernet (See I/O Expansion Modules – page 55)	
Add-on COM Modules	Add up to 3 COM modules ²	
Program		
Application Memory	8 MB	
HMI Panel		
Color Touchscreen	Resistive, Analog	
Viewing Area Height x Width (mm)	108 x 64.8	
Cut Out Height x Width (mm)	93.2 x 148.2	
Resolution Height x Width (mm)	800 x 480 (WVGA)	
Keys	Virtual Keyboard	
Environment		
Protection	IP66, IP65 and NEMA4X	
Operating Temperature	-20°C to 55°C	
Standard	CE, UL, EAC ³	
General		
Battery	4 years typical at 25°C, battery back-up for all memory and RTC	
Clock	Real-time clock functions (date and time)	

¹ UniStream 5" I/O Expansion: the first unit plugged into the I/O expansion jack must be from the CX series I/O expansion - UAG-CX-XKP125 or UAG-CX-XKP300.

The CX end unit may be followed by Uni-I/O modules or UAG-XKPLxxxx adapters.

² Up to 2 serial modules and one CANbus module.

³ For a list of relevant models, contact Unitronics.

Local Expansion Adapters

UAG-CX-XKP125	UniStream CX IO Exp.Kit 1.25m
UAG-CX-XKP300	UniStream CX IO Exp.Kit 3m

Uni-COM™ Communication Modules

UAC-CX-01RS2	Uni-COM: 1x RS232 port
UAC-CX-01RS4	Uni-COM: 1x RS485 port
UAC-CX-01CAN	Uni-COM: 1x CANbus port

UniStream Built-in I/O Configurations

Article*	Summary	Inputs				Outputs				Operating Voltage
		Digital (Isolated)	HSC/Shaft-encoder ¹	Analog	Temperature inputs, RTD/TC	Transistor ² (Isolated)	PWM ²	Relay	Analog	
US5-B5-B1 US5-B10-B1 US7-B5-B1 US7-B10-B1	No built-in I/Os	—	—	—	—	—	—	—	—	12/24VDC
US5-B5-TR22 US5-B10-TR22 US7-B5-TR22 US7-B10-TR22	10 Digital Inputs, 2 Analog Inputs, 2 Transistor Outputs, npn, including 2 PWM Outputs. 8 Relay Outputs	10 Sink/Source	—	2 0-10V, 0-20mA, 4-20mA 12-bit	—	2 Sink (nnp)	2 30kHz	8	—	24VDC
US5-B5-T24 US5-B10-T24 US7-B5-T24 US7-B10-T24	10 Digital Inputs, 2 Analog Inputs, 12 Transistor Outputs, npn, including 2 PWM Outputs	10 Sink/Source	—	2 0-10V, 0-20mA, 4-20mA 12-bit	—	12 Source (pnp)	2 3kHz	—	—	24VDC
US5-B5-RA28 US5-B10-RA28 US7-B5-RA28 US7-B10-RA28	14 Digital Inputs, including 2 HSC, 2 Analog Inputs, 2 Temperature Inputs, 8 Relay Outputs, 2 Analog Outputs	14 Sink/Source	2 90kHz 32-bit	2 (isolated) 0-10V, 0-20mA, 4-20mA 14-bit	2 (isolated) Thermocouple, PT100/NI100/NI120/ PT1000/NI1000	—	—	8	2 0-10V 12-bit, ±10V, 11-bit+sign 0-20mA, 4-20mA 12-bit	24VDC
US5-B5-TA30 US5-B10-TA30 US7-B5-TA30 US7-B10-TA30	14 Digital Inputs, including 2 HSC, 2 Analog Inputs, 2 Temperature Inputs, 10 Transistor outputs, npn, including 2 PWM Outputs, 2 Analog Outputs	14 Sink/Source	2 90kHz 32-bit	2 (isolated) 0-10V, 0-20mA, 4-20mA 14-bit	2 (isolated) Thermocouple, PT100/NI100/NI120/ PT1000/NI1000	10 Source (pnp)	2 3kHz	—	2 0-10V 12-bit, ±10V, 11-bit+sign 0-20mA, 4-20mA 12-bit	24VDC
US5-B5-R38 US5-B10-R38 US7-B5-R38 US7-B10-R38	24 Digital Inputs, including 4 HSC, 2 Analog Inputs, 12 relay Outputs	24 Sink/Source	4 90kHz 32-bit	2 0-10V, 0-20mA, 4-20mA 12-bit	—	—	—	12	—	24VDC
US5-B5-T42 US5-B10-T42 US7-B5-T42 US7-B10-T42	24 Digital Inputs, including 4 HSC, 2 Analog Inputs, 16 Transistor Outputs, npn, including 2 PWM Outputs	24 Sink/Source	4 90kHz 32-bit	2 0-10V, 0-20mA, 4-20mA 12-bit	—	16 Source (pnp)	2 3kHz	—	—	24VDC

* Models R38+T42, as well as all standard (B5) models will be soon UL certified.

¹ Note that the high-speed inputs are included in the total number of digital inputs.² Note that the PWM outputs are included in the total number of transistor outputs.

	Article Number	Inputs				Outputs			
		Digital (Isolated)	HSC/Shaft-encoder ⁴	Analog	Temperature Measurement	Transistor ⁵ (Isolated)	PWM/ HSO ⁵	Relay	Analog
Digital	UID-1600	16 Sink/Source	—	—	—	—	—	—	—
	UID-0808T	8 Sink/Source	—	—	—	8 Source(pnp)	—	—	—
	UID-W1616T ³	16 Sink/Source	—	—	—	16 Source(pnp)	—	—	—
	UID-0808THS ¹	8 Sink/Source	2 250kHz 32-bit	—	—	8 Source(pnp)	2 ² 250kHz 2 3kHz	—	—
	UID-0016T	—	—	—	—	16 Source(pnp)	—	—	—
	UID-0808R	8 Sink/Source	—	—	—	—	—	8	—
	UID-W1616R ³	16 Sink/Source	—	—	—	—	—	16	—
	UID-0016R	—	—	—	—	—	—	16	—
Analog and Temperature	UIA-0006	—	—	—	—	—	—	—	6 (Isolated) 0-10V, 14-bit, ±10V 13-bit+sign, 0-20mA, 4-20mA 13-bit
	UIA-0402N	—	—	4 0-10V, 0-20mA, 4-20mA 13-bit	—	—	—	—	2 0-10V, 14-bit, ±10V 13-bit+sign, 0-20mA, 4-20mA 13-bit
	UIA-0800N	—	—	8 0-10V, 0-20mA, 4-20mA 13-bit	—	—	—	—	—
	UIA-0800NH (coming soon)	—	—	8 0-20mA, 4-20mA With HART communica- tion	—	—	—	—	—
	UIS-04PTN	—	—	—	4 PT100/NI100/NI120	—	—	—	—
	UIS-04PTKN	—	—	—	4 PT1000/NI1000/NI1200	—	—	—	—
	UIS-08TC	—	—	—	8 (Isolated) Thermocouple	—	—	—	—
Digital/Analog	UIS-WCB1 ^{1,3}	10 Sink/Source	2 10kHz 32bit	2 (Isolated) 0-10V, 0-20mA, 4-20mA 14-bit	2 (Isolated) Thermocouple, PT100/NI100/NI120	2 ⁶ Sink (npn)	2 250kHz	8	2 0-10V, 14-bit, ±10V 13-bit+sign, 0-20mA, 4-20mA 13-bit
	UIS-WCB2 ^{1,3}	10 Sink/Source	2 10kHz 32bit	2 (Isolated) 0-10V, 0-20mA, 4-20mA 14-bit	2 (Isolated) Thermocouple, PT100/NI100/NI120	8 Source (pnp) 2 ⁶ Sink(npn)	2 250kHz (Sink outputs only)	—	2 0-10V, 14-bit, ±10V 13-bit+sign, 0-20mA, 4-20mA 13-bit

¹ This module utilizes two high speed blocks that can each be assigned either to the inputs or to the outputs.

² 2 outputs are high-speed, up to 250kHz: function as normal or high-speed PWM (same freq. and different duty-cycles). 2 outputs are normal speed: function as normal-speed PWM outputs (same freq. and same duty cycle).

³ Width: 1 'wide' I/O module = 1.5 'slim' I/O modules

⁴ Note that the high-speed inputs are included in the total number of digital inputs.

⁵ Note that the high-speed outputs are included in the total number of digital outputs

⁶ Not isolated

DIN Rail Power Supplies

UAP-24V24W	24W, 24V, 1A
UAP-24V60W	60W, 24V, 2.5A
UAP-24V96W	96W, 24V, 4A

Modems

GSM-KIT-17J-3G	Cinterion GPRS modem, EHS6T, 3G
----------------	---------------------------------

URA-xxx / URD-xxx / URS-xxx / URP-xxx

Remote I/O Adapter | Input Modules | Output Modules | Power Modules

- Ethernet based
- Up to 63 I/O modules per adapter
- Slim modules - only 12mm
- 16-bit Analog Resolution
- Operating temperature: -40°C to 70°C



Remote I/O Adapter

Article Number	Description
URB-TCP	60W 24V 2.5A

Input Modules

Article	Description	Digital	HSC/Shaft encoder	Analog	Temperature Measurements
URD-0800	8 Digital inputs (sink or source), 10RTB	8	—	—	—
URA-04000	4 Analog Current Inputs 12bit, 10RTB	—	—	4	—
URA-08000	8 Analog Current Inputs 12bit, 10RTB	—	—	8	—
URA-0400P	4 Analog Voltage Inputs 12bit, 10RTB	—	—	4	—
URA-0800P	8 Analog Voltage Inputs 12bit, 10RTB	—	—	8	—
URA-0400T	4 Analog Current Inputs 16bit, 10RTB	—	—	4	—
URA-0400U	4 Analog Voltage Inputs 16bit, 10RTB	—	—	4	—
URS-04TC (Coming soon)	4 Thermocouple, 10RTB	—	—	—	4
URS-04RT (Coming soon)	4 RTD, 10RTB	—	—	—	4
URD-0400C (Coming soon)	4 Digital Inputs, 240VAC, 10RTB	4	—	—	—
URD-0400B (Coming soon)	4 Digital Inputs, 120VAC, 10RTB	4	—	—	—
URD-0200D (Coming soon)	2 Shaft Encoder, 10RTB	—	2	—	—
URD-0200E (Coming soon)	2 High Speed Counter, 10RTB	—	2	—	—

Output Modules

Article	Summary	Outputs		
		Transistor	Relay	Analog
URD-0004RH	4 Relay Outputs, 10RTB	—	—	—
URD-0008NH	8 Digital Outputs (Sink), 10RTB	8 (Sink)	—	—
URD-0008CH	8 Digital Outputs (Source), 10RTB	8 (Source)	—	—
URA-0004W	4 Analog Current Outputs 12bit, 10RTB	—	—	4
URA-0008W	8 Analog Current Outputs 12bit, 10RTB	—	—	8
URA-0004X	4 Analog Voltage Outputs 12bit, 10RTB	—	—	4
URA-0008X	8 Analog Voltage Outputs 12bit, 10RTB	—	—	8
URA-0004Y	4 Analog Current Outputs 16bit, 10RTB	—	—	4
URA-0004Z	4 Analog Voltage Outputs 16bit, 10RTB	—	—	4
URD-0004SN (Coming soon)	4 Solid State Relay, 24VDC/VAC, 2A, 10RTB	—	4	—
URD-0004SM (Coming soon)	4 Solid State Relay, 110VDC/VAC, 1A, 10RTB	—	4	—
URD-0004SK (Coming soon)	4 Solid State Relay, 240VDC/VAC, 0.5A, 10RTB	—	4	—

Power Module

Article Number	Description
URP-PS24V ¹	Input 24VDC, Output system Power 5VDC/1A

¹ To be used when the required system current exceeds 1.5A

UniStream Series

Ethernet | USB | RS485/232 | CANbus | I/O Expansion

IT

FTP

SNMP

EMAIL

SQL

MQTT

Remote Access



WEBSERVER

VNC

OT

SCADA

Ethernet

GSM/GPRS Modem



RS232

I/O Expansion, Local & Remote

USB



Ethernet

CANbus

RS485/232

Local Expansion



Remote IO via Ethernet



NEW!

CANopen



CANopen Slaves

SAE J1939

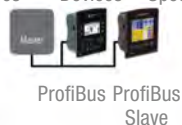


J1939 Devices

UniCAN



Remote High Speed I/O



ProfiBus ProfiBus Slave

FB PROTOCOL



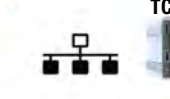
MODBUS RTU Slaves

MODBUS



Barcode Printer Barcode Reader

EtherNet/IP



Ethernet IP (scanner & adaptor)

BACnet, KNX, M-bus Via 3rd-party gateway

MODBUS TCP



MODBUS IP Slaves



Open Protocol

Notes

7.1 Modules & Accessories

	Type	Page
I/O Expansion Modules for Vision series	IO-xxx / EX-xxx / EXF-xxx	60
Snap-In-I/O-Module	V200-18-Exx	61

IO-xxx / EX-xxx / EXF-xxx

Expand your system with local or remote I/O expansion modules

	Expansion Modules Article	Inputs					Outputs				Operating Voltage
		Digital ⁵	HSC ⁵	Analog	Temperature Measurement	Weight Measurement	Transistor ⁶	PWM/HSO ⁶	Re-relay	Analog	
Digital	IO-DI8-T08	8 pnp/npn	1 5 kHz 16-bit	—	—	—	8 pnp	—	—	—	24 V DC ⁹
	IO-DI8-R04	8 pnp/npn	1 5 kHz 16-bit	—	—	—	—	—	4	—	24 V DC ⁹
	IO-DI8-R08	8 pnp/npn	1 5 kHz 16-bit	—	—	—	—	—	8	—	24 V DC ⁹
	EX90-DI8-R08 ³	8 pnp	1 5 kHz 16-bit	—	—	—	—	—	8	—	24 V DC
	IO-DI16	16 pnp/npn	1 5 kHz 16-bit	—	—	—	—	—	—	—	24 V DC ⁹
	IO-T016	—	—	—	—	—	16 pnp	—	—	—	24 V DC
	IO-R08	—	—	—	—	—	—	—	8	—	24 V DC ⁹
	IO-R016	—	—	—	—	—	—	—	16	—	24 V DC ⁹
	IO-DI8ACH	8 AC	—	—	—	—	—	—	—	—	110/220 V AC
Analog, Temperature and Weight/Strain Measurements	IO-AI4-A02	—	—	4 0-10V, 0-20mA, 4-20mA 12-bit	—	—	—	—	—	2 ±10 V 12-bit+sign, 0-20 mA, 4-20 mA, 12-bit	24 V DC
	IO-PT400	—	—	—	4 PT100/Ni100/Ni120	—	—	—	—	—	Not relevant
	IO-PT4K	—	—	—	4 PT1000/Ni1000	—	—	—	—	—	Not relevant
	IO-A06X	—	—	—	—	—	—	—	—	6 (Isolated) 0-10 V, 0-20 mA, 4-20 mA, 12-bit	24 V DC
	IO-LC1	1 pnp	—	—	—	1 Loadcell / Strain gauge	2 pnp	—	—	—	24 V DC
	IO-LC3	1 pnp	—	—	—	3 Loadcell / Strain gauge	2 pnp	—	—	—	24 V DC
	IO-ATC8	—	—	8 Thermocouple, 0-10 V, 0-20 mA, 4-20 mA 14-bit		—	—	—	—	—	Not relevant
	IO-AI8	—	—	8 0-10 V, 0-20 mA, 4-20 mA 14-bit	—	—	—	—	—	—	Not relevant
XL Digital/ Analog	IO-D16A3-R016	16 pnp/npn	2 30 kHz 16/32-bit ⁸	3 0-20 mA, 4-20 mA 10-bit	—	—	—	—	16	—	24 V DC
	IO-D16A3-T016	16 pnp/npn	1 30 kHz 16/32-bit ⁸	3 0-20 mA, 4-20 mA 10-bit	—	—	15 pnp, 1 pnp/npn	1 pnp 0.5 kHz npn 50 kHz	None	—	24 V DC
	EX-D16A3-R08 ⁷	16 pnp/npn	2 30 kHz 16/32-bit ⁸	3 0-20 mA, 4-20 mA 10-bit	—	—	None	None	8	—	24 V DC
	EX-D16A3-T016 ⁷	16 pnp/npn	1 30 kHz 16/32-bit ⁸	3 0-20 mA, 4-20 mA 10-bit	—	—	15 pnp 1 pnp/npn	1 pnp 0.5 kHz npn 50 kHz	None	—	24 V DC
High-speed Remote I/O Module	EXF-RC15 ^{2,4,10}	9 pnp/npn	3 200 kHz 32-bit	—	—	—	4 nnp	4 (up to 3 PTO)	2	—	24 V DC

I/O Expansion Module Adapters

I/O Expansion Module Adapters	Article	Description
	EX-A2X ¹	Local I/O module adapter, Galvanic isolation. Up to 8 modules may be connected to a single PLC ¹ Supports both 12/24 V DC
	EX-RC1 ^{1,4}	Remote I/O module adapter, via CANbus. Multiple adapters may be connected to a single PLC, with up to 8 modules to each adapter ¹ . Supports both 12/24 V DC.

¹ Number of supported I/Os & I/O modules varies according to module.² The EXF-RC15 functions as a node in a Vision UniCAN network and connects to the Vision controller via CANbus and is programmed in VisiLogic. The EXF-RC15 cannot be extended as regular I/O unit. High-speed inputs are configurable as either high-speed counter (HSC) or shaft-encoder.³ The EX90 is housed in an open casing. Only one EX90 can be connected per PLC, as a single expansion module; Expansion adapter not required.⁴ Supported by Samba, Vision and UniStream series.⁵ The total number of digital inputs listed includes high-speed inputs. Example: the IO-D16A3-T016 offers a total of 16 pnp/npn inputs. You can configure I4 as a HSC and I5 as a Counter reset; this reduces the available number of digital inputs to 14.⁶ The total number of digital outputs listed includes high-speed outputs. Example: the IO-D16A3-T016 offers a total of 16 transistor outputs. You can configure 1 to High-speed output, reducing the number of available digital outputs to 15.⁷ Functions as local adapter. Can support up to 7 I/O modules.⁸ 16-bit or 32-bit, depending on the PLC.⁹ Also available as 12VDC – contact us for part number.¹⁰ One HSC may be configured as a shaft encoder.

V200-18-Exx**Compatible with Vision models: V560 | V570 | V700 | V1040 and V1210**

Snap-in I/O Article	Inputs				Outputs				Operating Voltage
	Digital (isolated) ¹	HSC/Shaft-encoder ¹	Analog	Temperature Measurement	Transistor (isolated) ²	PWM/HSO ²	Relay	Analog	
V200-18-E1B	16 pnp/npn	2 10 kHz 32-bit	3 0-10 V, 0-20 mA, 4-20 mA 10-bit	—	4 pnp/npn	2 pnp 0.5 kHz npn 50 kHz	10	—	24V DC
V200-18-E2B	16 pnp/npn	2 10 kHz 32-bit	2 0-10 V, 0-20 mA, 4-20 mA 10-bit	—	4 pnp/npn	2 pnp 0.5 kHz npn 50 kHz	10	2 0-10 V, 0-20 mA, 4-20 mA 12-bit	24V DC
V200-18-E3XB	18 pnp/npn	2 10 kHz 32-bit	4 (Isolated) Thermocouple, PT100, 0-10 V, 0-20 mA, 4-20 mA 14-bit		2 pnp/npn	2 pnp 0.5 kHz npn 50 kHz	15	4 (Isolated) 0-10 V, 4-20 mA 12-bit	24V DC
V200-18-E4XB	18 pnp/npn	2 10 kHz 32-bit	4 (Isolated) Thermocouple, PT100, 0-10 V, 0-20 mA, 4-20 mA 14-bit		15 pnp 2 npn/pnp	2 pnp 0.5 kHz npn 50 kHz	—	4 (Isolated) 0-10 V, 4-20 mA 12-bit	24V DC
V200-18-E5B	18 pnp/npn	2 10 kHz 32-bit	3 0-10 V, 0-20 mA, 4-20 mA 10-bit	—	15 pnp 2 npn/pnp	2 pnp 0.5 kHz npn 50 kHz	—	—	24V DC
V200-18-E6B	18 pnp/npn	2 10 kHz 32-bit	2 Thermocouple, PT100, 0-10 V, 0-20 mA, 4-20 mA 14-bit 3 0-10 V, 0-20 mA, 4-20 mA 10-bit		2 pnp/npn	2 pnp 0.5 kHz npn 50 kHz	15	2 (Isolated) 0-10 V, 4-20 mA 12-bit	24V DC
V200-18-E46B	18 pnp/npn	2 10 kHz 32-bit	6 0-10 V, 0-20 mA, 4-20 mA 14-bit 3 0-10 V, 0-20 mA, 4-20 mA 10-bit	—	2 pnp/npn	2 pnp 0.5 kHz npn 100 kHz	15	2 (Isolated) 0-10 V, 4-20 mA 12-bit	24V DC
V200-18-E62B ³	30 pnp/npn	2 10 kHz 32-bit	2 0-10 V, 0-20 mA, 4-20 mA 10-bit	—	28 pnp 2 npn/pnp	2 pnp 0.5 kHz npn 100 kHz	—	—	24V DC

¹ The total number of digital inputs listed includes high-speed inputs.² The total number of digital outputs listed includes high-speed outputs.³ Not yet UL certified**Vision & Samba COM Modules**

Enhance Vision's communication capabilities

Model	Ethernet	RS232/RS485	Isolated RS232/RS485	CANbus	Profibus
SAMBA	V100-17-ET2	V100-17-RS4	V100-17-RS4X	V100-17-CAN	—
V130, V350, V430 ¹	V100-17-ET2, V100-S-ET2 ⁵	V100-17-RS4	V100-17-RS4X	V100-17-CAN, V100-S-CAN ⁵	V100-17-PB1
V560, V570, V1040, V1210 ²	V200-19-ET2	V200-19-RS4	V200-19-RS4-X	Built-in	—
V700 ⁴	Built-in	V100-17-RS4	V100-17-RS4X	V100-17-CAN	V100-17-PB1

¹ V130/V350/V430: Two ports may be added: 1 for Serial/Ethernet/Profibus and 1 for CANbus.² V560/V570/V1040/V1210: 1 port may be added: Serial/Ethernet.³ Extended temperature cards, operational temperature : -30°C to 60°C (-22°F to 140°F) - for V350-JS-TA24 only.⁴ V700 is supplied with an Built-in Ethernet port. One port may be added: serial/Profibus, and CANbus.⁵ Not yet UL certified**DIN-rail Power Supplies**

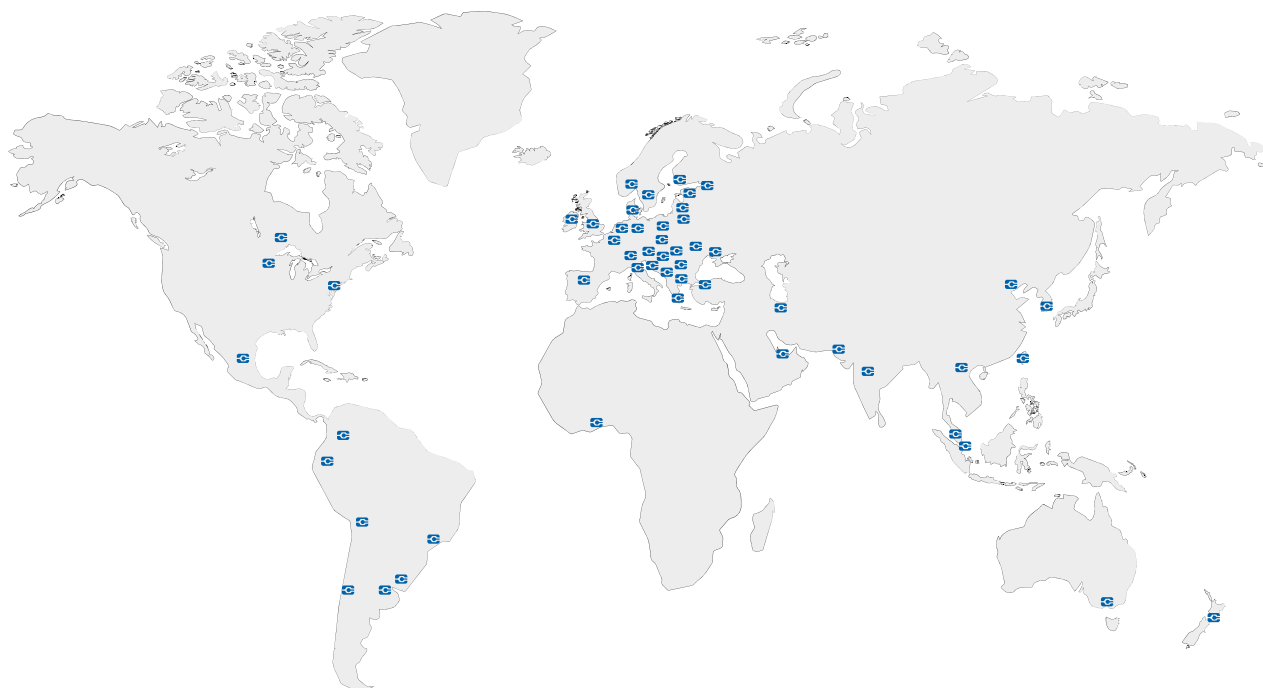
UAP-24V24W	UAP-24V60W	UAP-24V96W
24 W, 24 V, 1 A	60 W, 24 V, 2.5 A	96 W, 24 V, 4 A

GSM

GSM-KIT-17J-3G
KIT, MODEM GPRS, CINTERION, EHS6T

Notes

8 Worldwide Sales Network



ASIA

CHINA

ELCO (TIANJIN) ELECTRONICS CO., LTD.
www.elco-holding.com



SINGAPORE

FUTRON ELECTRONICS PTE. LTD.
www.futronelectronics.com.sg



THAILAND

538 CO., LTD.
538LTD@gmail.com



INDIA

CONCORD AUTOMATION & CONTROLS
www.cacindia.net



SOUTH KOREA

MAHANI ELECTRIC CO., LTD.
www.mec.co.kr



SRINUTCH COMPONENTS CO., LTD.
www.srinutch.com

MALAYSIA

ELECTRICAL MARKETING SDN. BHD
emsb@tm.net.my



TAIWAN

Z-NANOCON & AUTOMATION INT'L CORP
www.e-sensors.com.tw



VIETNAM

PLC PRODUCTION AND TRADE COMPANY LIMITED
plchanoi@gmail.com



OCEANIA

AUSTRALIA

ARLIN PTY LTD.
www.arlin.com.au



NEW ZEALAND

CUTHBERT STEWART LTD.
www.cuthbertstewart.co.nz



EUROPE

AUSTRIA TURCK GmbH www.turck.at		GREAT BRITAIN CAMIS ELECTRONICS LTD. www.camiselectronicsuk.com		REPUBLIC OF MACEDONIA TIPTHEH SKOPJE D.O.O. www.tipteh.mk	
BELGIUM TURCK MULTIPROX N.V. www.multiprox.be		GREECE MEGA EL (VASSILIS GETSOS A.) www.megael.gr		RUSSIA POLIGON LTD. www.poligon.info	
BOSNIA AND HERZEGOVINA TIPTHEH D.O.O. www.tipteh.ba		HUNGARY OEM AUTOMATIC KFT. www.oemautomatic.hu		SERBIA TIPTHEH D.O.O. BEOGRAD www.tipteh.rs	
BULGARIA SENSOMAT LTD. www.sensomat.info		IRELAND TCM CONTROLS LTD. www.tcmcontrols.com		SLOVAKIA MARPEX, S.R.O. www.marplex.sk	
CROATIA TIPTHEH ZAGREB D.O.O. www.tipteh.hr VARGA ELEKTRONIK D.O.O. www.varga-elektronik.hr		ITALY S.P.I.I. S.P.A. www.spil.it SOFTING ITALIA SRL. www.softingitalia.it		SLOVENIA TIPTHEH D.O.O. www.tipteh.si	
CZECH REPUBLIC OEM AUTOMATIC, SPOL. S.R.O. www.oem-automatic.cz TURCK S.R.O. www.turck.cz		LITHUANIA HIDROTEKA ENGINEERING SERVICES www.hidroteka.lt		SPAIN DISAILECO, SL www.disaileco.com	
DENMARK OEM AUTOMATIC KLITSO A/S www.oemklitso.dk		LATVIA OEM AUTOMATIC UAB www.oem.ee		SWEDEN BEVING ELEKTRONIK AB www.beving.se OEM AUTOMATIC AB www.oemautomatic.se	
ESTONIA OEM EESTI OÜ www.oem.ee		NETHERLANDS VIERPOOL BV. www.vierpool.nl		SWITZERLAND COMATRELECO AG www.comatreleco.com	
FRANCE COMATRELECO AG www.comatreleco.com		NORWAY OEM AUTOMATIC AS www.oem.no		TURKEY DESA REPRESENTATION & CONSULTANCY & ENGINEERING LTD. www.desa-trade.com ILERI OTOMASYON SISTEMLERI SAN. LTD. STI. www.ileriotomasyon.com	
FINLAND OEM FINLAND OY www.oem.fi		POLAND ANIM SPÓŁKA Z OGRANICZONA ODPOWIEDZIALNOSCIA SP.K. www.anim.com.pl ASTAT LOGISTYKA SP. Z O.O. www.astat.com.pl OEM AUTOMATIC SP. Z O.O. www.oemautomatic.com.pl		UKRAINE SENSORLINK UA LLC www.sensorlink.com.ua	
GERMANY COMAT RELECO GMBH www.comatreleco.de					

AFRICA

NIGERIA PANKEK GLOBAL SERVICES LTD. www.panekglobal.com/	
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CANADA

TURCK CANADA INC.
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TURCK MEXICO S. DE R.L.DE C.V.
www.turck.com.mx



UNITED STATES

ELECTROTECH SALES GROUP LLC
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www.winters.com.ar



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RHOMBERG LTDA.
www.rhomberg.cl



URUGUAY

ELEKTROSWEDEN S.A.
www.elektrosweden.com.uy



BOLIVIA

LEVCorp S.A.
www.levcorp.bo



COLOMBIA

ACJ HIGH VOLTAGE LTDA.
www.acj.com.co



BRAZIL

COMAT RELECO DO BRASIL
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ECUADOR

IANDCECONTROL, S.A.
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MIDDLE EAST

IRAN

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www.desc-co.com



PAKISTAN

GINZA INTERNATIONAL CORPORATION
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Notes

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