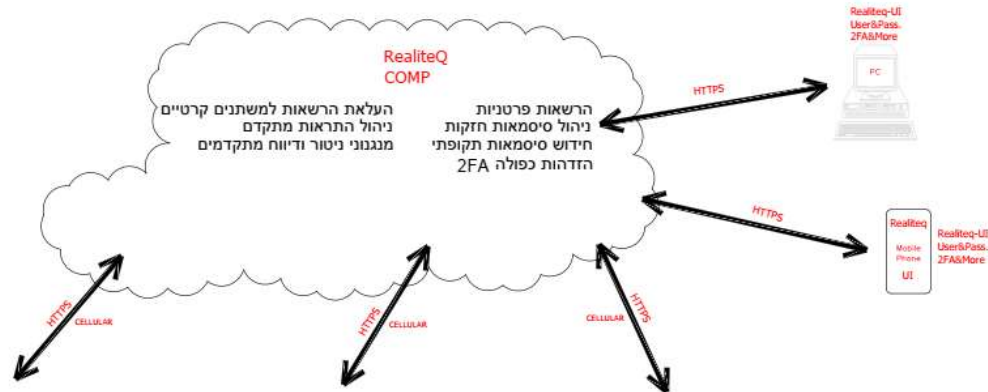


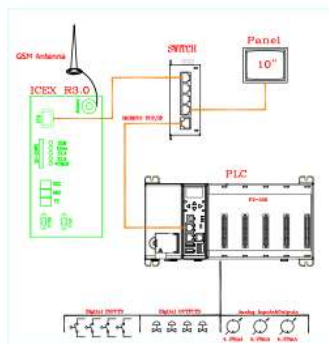
מפרט טכני לציוד הבקרה והתקשורת לתחנה באשכול

תצורת מערכת בקרה ומרכז בקרה - תחנות ביוב אשכול

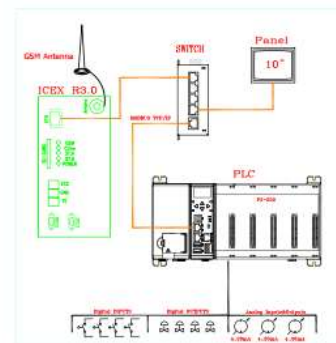
מועצה אשכול - מערך סילוק שפכים



תחנות שאיבה לכל יישוב



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מפרט כרטיסי בקר בתחנה -תחנות ביוב אשכול



Power Supply:	CPU:	Module:	Module:	Module:	Module:	Module:	Module:	Module:	Module:	Module:	Module:	Module:
Edit	Edit	Edit	Edit	Edit	Edit	Edit	Edit	Edit	Edit	Edit	Edit	Edit
P2-01DCAC	P2-550	P2-16ND3-1	P2-16ND3-1	P2-16ND3-1	P2-16TR	P2-16TR	P2-08AD-1	P2-FILL	P2-FILL	P2-FILL	P2-FILL	P2-FILL

Power Supply, 12-24VDC or 24VAC	P2000 CPU	16 PT INPUT 12-24VDC SINK/SOURCE	16 PT INPUT 12-24VDC SINK/SOURCE	16 PT INPUT 12-24VDC SINK/SOURCE	16 PT OUTPUT RELAY (16 FORM A)	16 PT OUTPUT RELAY (16 FORM A)	8 CH 16-BIT CURRENT ANALOG INPUT	Filler Module	Filler Module	Filler Module	Filler Module	Filler Module
---------------------------------	-----------	----------------------------------	----------------------------------	----------------------------------	--------------------------------	--------------------------------	----------------------------------	---------------	---------------	---------------	---------------	---------------

P2-01DCAC

The P2-01DCAC Input Power Supply provides isolated power to the Productivity2000 base from an external 24VAC or 12-24 VDC source.

No power budgeting is required. Any combination of I/O modules may be installed in any slots without power budget considerations.



AC/DC Input Power Supply

IMPORTANT!



Hot-Swapping Information

Note: This device cannot be Hot Swapped.

Power Supplies

P2-01DCAC Specifications

P2-01DCAC User Specifications		
Input Voltage Range (Tolerance)	24VAC (-10% / +20%)	12-24 VDC (-10% / +20%)
Maximum Input Power	72VA	45W
Maximum Input Ripple	Less than ±5%	
Cold Start Inrush Current	45A, 4μs @ 24VDC	
Maximum Inrush Current (Hot Start)	Same as Cold Start Inrush Current	
Rated Operating Frequency	50 to 60 Hz with ±5% tolerance	
Input Fuse Protection (Internal)	Micro Fuse 250V, 6.3 A Slow Blow Non-replaceable	
Input Fuse Protection (External)	6A Slow Blow (Recommended)	
Input Reverse Polarity Protection	Yes	
Output Voltages	24VDC, 0.65 A 3.3 VDC, 3.81 A	
Maximum Output Power	32W Combined	
Isolated User 24VDC Output	None	
Output Protection for Over Current, Over Voltage, and Over Temperature	Self resetting for both voltage outputs to base	
Under Input Voltage Lock-out	Yes, <10VDC	
Over Input Voltage Lock-out	No	
Input Transient Protection	Transorb Plus Input Choke/Filter	
Operating Design Life	10 years at full load at 40°C ambient and 5 years at 60°C ambient	

P2-01DCAC General Specifications	
Operating Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	-20° to 70°C (-4° to 158°F)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Enclosure Type	Open Equipment
Voltage Withstand (dielectric)	750VDC applied for 2 seconds
Insulation Resistance	>10MΩ @ 500VDC
Module Location	Power Supply slot in a Productivity2000 System.
EU Directive	See the "EU Directive" topic in the Productivity Suite Help File. Information can also be obtained at: www.productivity2000.com
Weight	284g (10 oz)
Agency Approvals	UL508 File E139594, Canada & USA CE (EN61131-2*)

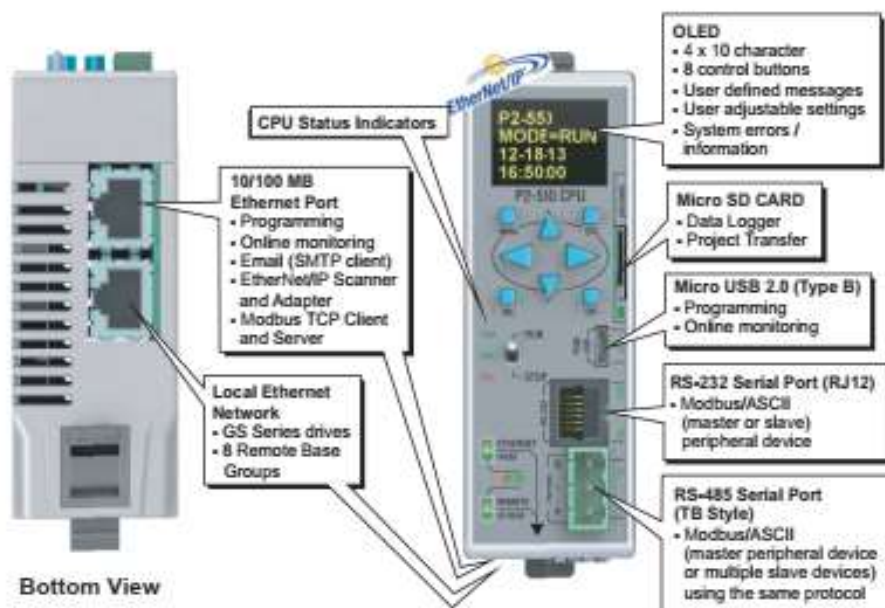
*Meets EMC and Safety requirements. See the Declaration of Conformity for details.
**To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific component part number web page.

Terminal Block Specifications	
Number of Positions	4 Screw Terminals
Wire Range (Use copper conductor, 75°C or equivalent)	22-14 AWG (0.324 to 3.31 sq. mm) Solid Conductor 22-14 AWG (0.324 to 3.31 sq. mm) Stranded Conductor 3/64 inch (1.2 mm) Insulation maximum
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3
Screw Torque	7-9 Inch-pounds (0.882-1.02 N-m)

P2-550

The P2-550 is a high-performance CPU which has communications ports that support Ethernet and serial devices. The P2-550 also includes a 4-line x 10-character OLED local display and a USB programming port.

CPU Modules



Each Productivity2000 system base requires a CPU module be mounted in the controller slot of the unit. The CPU stores and executes the user's program.

CPU Modules

CPU Run/Stop Switch

RUN position	Executes user program, run-time edits possible
STOP position	Does not execute user program, normal program load position

CPU Status Indicators

PWR	Green LED is illuminated when power is ON
RUN	Green LED is illuminated when CPU is in RUN mode
CPU	Red LED is illuminated during power ON reset, power down, or watch-dog time-out



CPU Specifications

User Memory	50MB (includes program, data and documentation)	
Memory Type	Flash and Battery Backed RAM	
Retentive Memory	500kB	
Scan Time	500µs (3K Boolean, 240 I/O)	
Display	OLED, 4x10 characters, 8 control buttons; OLED characters are 7x12 with a dot pitch of 0.245 mm; 1.72 mm x 2.94 mm	
Communications; 5 Integrated Ports	USB IN: Programming, Monitoring, Debug, Firmware ETHERNET: (10/100 Mbps Ethernet) Programming, Monitoring, Debug, Firmware, Email SMTP Client, Modbus TCP Client (32 Servers) and Server (16 Clients), EtherNet/IP Scanner (32 Adapters) and Adapter (4 scanners) with 8 connections per device. REMOTE I/O: 16 GS-EDRV100 (GS Drives), 8 Remote Base Groups RS-232: (RJ12, 1200-115.2k baud) ASCII, Modbus RS-485: Removable Terminal Included, (1200-115.2k baud) ASCII, Modbus RTU	
Data Logging/Project Transfer	Micro SD card slot	
Hardware Limits of System	240 Hardware I/O Points: All 16-point I/O Modules 16 GS Series Drives as Local Network I/O 8 Remote Base Groups	
Instruction Types	Application Functions Array Functions Counters/Timers Communications Data Handling Drum Sequencers Math Functions	PID Program Control String Functions System Functions Contacts Coils
Real Time Clock Accuracy	±5s per day typical at 25°C -15s per day maximum at 60°C	



IMPORTANT!



Hot-Swapping Information

Note: This device cannot be Hot Swapped.

Dimensions and Installation

Mounting Clearances

Provide a minimum clearance of 2 inches (50mm) between the bases and all sides of the enclosure. Allow extra door clearance for operator panels and other door mounted items. There should be a minimum of 3 inches (76mm) clearance between the base and any wire duct, and a minimum of 7.2 inches (183mm) from base to base in a multiple base installation.

Grounding

A good common ground reference (earth ground) is essential for proper operation of the Productivity2000 system. One side of all control circuits, power circuits and the ground lead must be properly connected to earth ground by either installing a ground rod in close proximity to the enclosure or by connecting to the incoming power system ground. There must be a single-point ground (i.e. copper bus bar) for all devices in the enclosure that require an earth ground.

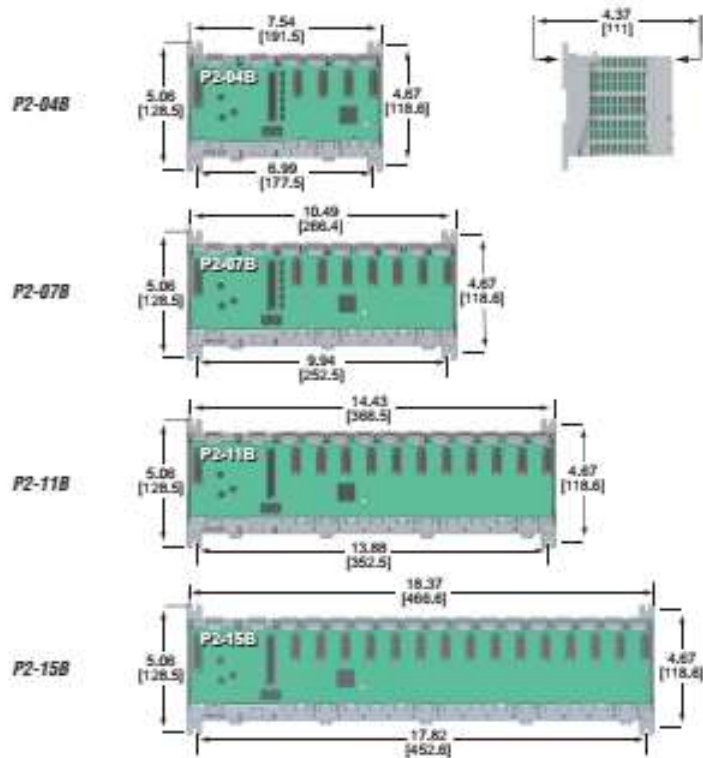
Temperature Considerations

The Productivity2000 system should be installed in an environment operating within the equipment operating temperature specifications. If the temperature deviates above or below the specification, measures such as cooling or heating the enclosure should be taken to maintain the specification.

Power Considerations

The Productivity2000 system is designed to be powered by the 110/240 VAC Productivity2000 power supply. The Productivity2000 has achieved CE certification without requiring EMP/RFI line noise filters on the AC power supply. Please review the "EU Directives" document, located in the User Manual or at www.productivity2000.com, for applications which require CE Compliance.

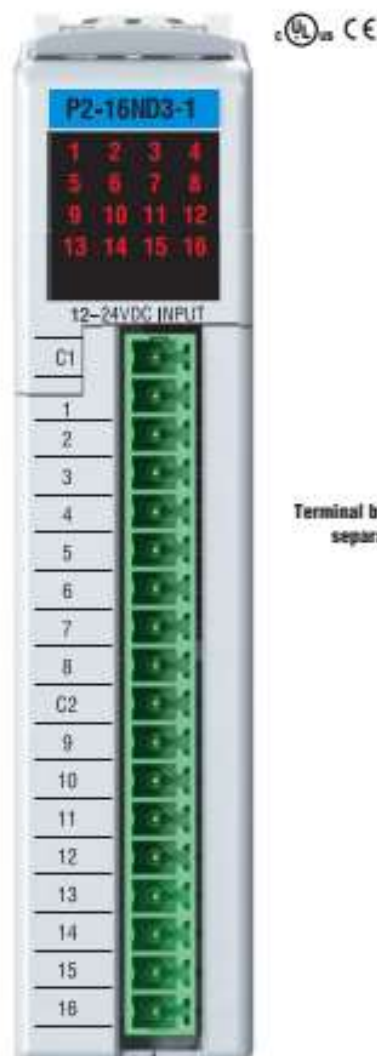
Base Dimensions, inches[mm]



P2-16ND3-1

Discrete Input

The P2-16ND3-1 DC Input Module provides sixteen 12-24 VDC sinking/sourcing inputs.



Input Specifications

Inputs per Module	16 (Sink/Source)
Operating Voltage Range	12-24 VDC
Input Voltage Range	10.2-26.4 VDC
Peak Voltage Range	30VDC
Input Current (typical)	3.5 mA @ 12VDC 7.5 mA @ 24VDC
Maximum Input Current	10mA @ 26.4 VDC
ON Voltage Level*	> 9.5 VDC
OFF Voltage Level	< 7VDC
Minimum ON Current	2mA
Maximum OFF Current	1.6 mA
OFF to ON Response	Max. 2ms Typical 1ms
ON to OFF Response	
Status Indicators	Logic side (16 points)
Commons per Module	2 Isolated (8 points/common) Isolated

General Specifications

Operating Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	-20° to 70°C (-4° to 158°F)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1800VAC applied for 1 second
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	400mW
Enclosure Type	Open Equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in a Productivity2000 System.
Field Wiring	Use ZIPLink Wiring System or removable terminal block (not included). See Wiring Solutions.
EU Directive	See the "EU Directive" topic in the Productivity Suite Help File. Information can also be obtained at: www.productivity2000.com
Connector Type (Sold separately)	18-position removable terminal block
Weight	90g (3.2 oz)
Agency Approvals**	UL61010-2-201 file E139594, Canada & USA CE (EN61131-2 EMC and EN61010-2-201 Safety)†

*Meets EMC and Safety requirements. See the Declaration of Conformity for details.
†To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific component part number web page.

CPU Productivity Suite

P2-550 Version 3.1.x.x or later

We recommend using pre-wired ZIPLink cables and connection modules. See Wiring Solutions.
If you wish to hand-wire your module, removable terminal blocks are sold separately. Order part number P2-RTB or P2-RTB-I



Relay Output Modules

P2-16TR

Relay Output

The P2-16TR Relay Output Module provides sixteen 1.0 A surge protected relay outputs with two isolated commons.



Terminal block sold separately.

We recommend using prewired ZIPLink cables and connection modules. See Wiring Solutions.

If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P2-RTB or P2-RTB-1.



Output Specifications

Outputs per Module	16
Operating Voltage Range	(CE) 6.25-24 VDC (-15%/+20%) 6-240 VAC (-15%/+10%) (UL) 6-27 VDC (-15%/+10%) 6-240 VAC (-10%/+10%)
Output Type	Relay, form A (SPST)
AC Frequency	47-63 Hz
Maximum Output Current @ Temp	1A/ point, 8A/7 common @ 80°C for both AC and DC
Minimum Load Current	5mA @ 5VDC
Maximum Inrush Current	4A for 10ms
OFF to ON Response	≤ 10ms
ON to OFF Response	≤ 10ms
Status Indicators	Logic Slide (16 points)
Commons	2 Isolated (8 point / common)
External Fuses (user supplied)	8A Max

General Specifications

Operating Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	-30° to 70°C (-4° to 158°F)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Slide Isolation	1800VAC applied for 1 second
Insulation Resistance	>10MD @ 500VDC
Heat Dissipation	2.73 W
Enclosure Type	Open Equipment
Module Keying to Backplane	Electronic
Module Location	Any IO slot in a Productivity2000 System.
Field Wiring	Use ZIPLink Wiring System or removable terminal block (not included). See Wiring Solutions.
EU Directive	See the "EU Directive" topic in the Productivity Suite Help File. Information can also be obtained at: www.productivity2000.com
Connector Type (Sold separately)	16 position removable terminal block
Weight	188g (6.64 oz)
Agency Approvals**	UL508 file E139594, Canada & USA CE (EN61131-2*)

*Meets EMC and Safety requirements. See the Declaration of Conformity for details.

**To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific component part number web page.

Typical Relay Life

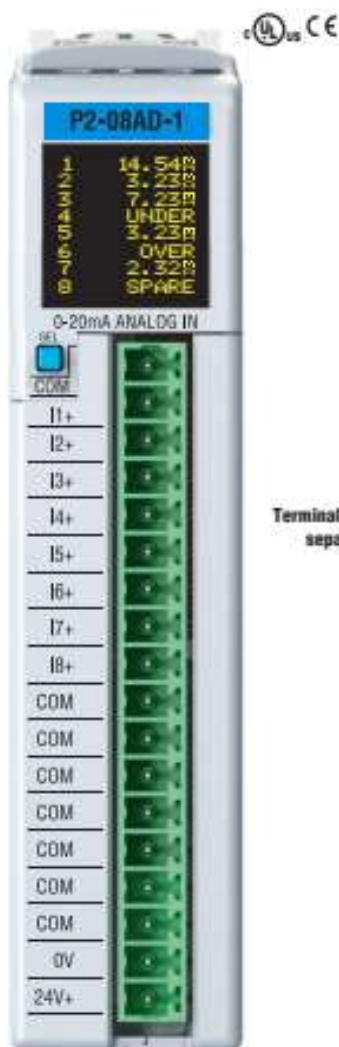
Voltage & Type of Load	Operations at 1A load current
30VDC Resistive	100,000
30VDC Solenoid	
120VAC Resistive	
120VAC Solenoid	
240VAC Resistive	
240VAC Solenoid	

Analog Input Modules

P2-08AD-1

Current Analog Input

The P2-08AD-1 Current Input Analog Module provides 8 channels for receiving 0 to 20 mA signals.



Terminal block sold separately.

Input Specifications

Input Channels	8 sinking
Module Signal Input Range	0-20 mA
Signal Resolution	16-bit
Resolution Value of LSB (least significant bit)	0-20mA = 0.305 μ A per count (1 LSB = 1 count)
Data Range	0 to 65535 counts
Input Type	Single-ended (1 common)
Maximum Continuous Overload	± 31 mA
Input Impedance	250 Ω $\pm 0.1\%$ 1M Ω W
Filter Characteristics	Low Pass, -3dB @ 100Hz
Sample Duration Time	9ms per channel (does not include ladder scan time)
All Channel Update Rate	80ms
Open Circuit Detection Time	Zero reading within 1s
Conversion Method	Successive approximation
Accuracy vs. Temperature	± 25 PPM / $^{\circ}$ C maximum
Maximum Inaccuracy	0.1% of range (including temperature drift)
Linearity Error (end to end)	$\pm 0.015\%$ of range Monotonic with no missing codes
Input Stability and Repeatability	$\pm 0.015\%$ of range (after 10 min warmup)
Full Scale Calibration Error (not including offset)	$\pm 0.015\%$ of range maximum
Offset Calibration Error	$\pm 0.015\%$ of range maximum
Max Crosstalk	-76dB, ± 10 LSB
Recommended Fuse (external)	Edison 0500-32-R, 0.032 A fuse
External DC Power Required	24VDC (-20% / +25%) 35mA

General Specifications

Operating Temperature	0 $^{\circ}$ to 60 $^{\circ}$ C (32 $^{\circ}$ to 140 $^{\circ}$ F)
Storage Temperature	-20 $^{\circ}$ to 70 $^{\circ}$ C (-4 $^{\circ}$ to 158 $^{\circ}$ F)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1800VAC applied for 1 second
Insulation Resistance	>10M Ω @ 500VDC
Heat Dissipation	800mW
Enclosure Type	Open Equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in a Productivity2000 System
Field Wiring	Use ZIPLink Wiring System or removable terminal block (not included). See Wiring Solutions.
EU Directive	See the "EU Directive" topic in the Productivity Suite Help File. Information can also be obtained at: www.productivity2000.com
Connector Type (not included)	18-position removable terminal block
Weight	90g (3.2 oz)
Agency Approvals**	UL508 File E139594, Canada & USA CE (EN61131-2*)

We recommend using prewired ZIPLink cables and connection modules. See Wiring Solutions.

Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P2-RTB or P2-RTB-1.



*Meets EMC and Safety requirements. See the Declaration of Conformity for details.

**To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific component part number web page.



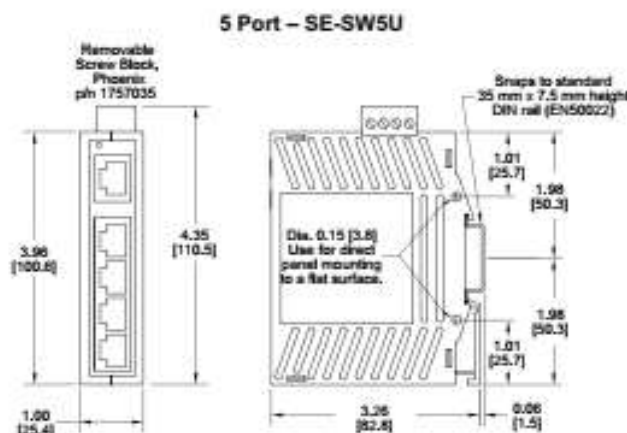
Stride Unmanaged Industrial Ethernet Switches

5-Port Ethernet Switch - Plastic Case

STRIDE SlimLine Industrial Unmanaged Ethernet Switch, plastic case, -10 to +60 °C operating temperature range, five 10/100BaseT RJ45 Ethernet ports. Redundant power inputs with surge and spike protection, auto-crossover, DIN rail mounting. Supports Store and Forward wire speed switching and full-duplex with flow control. UL/CUL1604 (Class I, Div. 2, Groups A, B, C, D) and CE marked.

Dimensions

Inches [mm]



SE-SW5U

ACT/LNK LED

This is the **Yellow** LED on models with a Yellow and a Green LED per RJ45 port.

ON (yellow) (not flashing)	Indicates that there is a proper Ethernet connection (Link) between the port and another Ethernet device, but no communications activity is detected.
ON (yellow) (flashing)	Indicates that there is a proper Ethernet connection (Link) between the port and another Ethernet device, and that there is communications activity.
OFF	Indicates that there is not a proper Ethernet connection (Link) between the port and another Ethernet device. Make sure the cable has been plugged securely into the ports at both ends.

Speed 10/100 LED

This is the **Green** LED on models with a Yellow and a Green LED per RJ45 port.

ON (green)	A 100 Mbps (100BaseT) connection is detected.
OFF	A 10 Mbps (10BaseT) connection is detected.

Specifications

The following are specifications relevant to the SE-SW5U 5-Port Ethernet Switch.

Input power (typical with all ports active at 100 Mbps)	2.0 W
Weight	4 oz (0.11 kg)
Power connector max. screw torque	5.0 lb-in (0.57 Nm)

eSMART10 Tech-Note

The eSMART Series HMI products combine state-of-the-art features and top performance with an outstanding design. They have been designed to offer an outstanding price/performance ratio for challenging applications. They are the ideal choice for HMI applications including factory and building automation.

eSMART10 features a bright 10.1" TFT widescreen (16:9) display with a fully dimmable LED backlight



- 10.1" TFT color display, LED backlight
- 1024x600 pixel (WVGA) resolution, 64K colors
- Resistive touchscreen
- Ethernet port
- USB port

Highlights

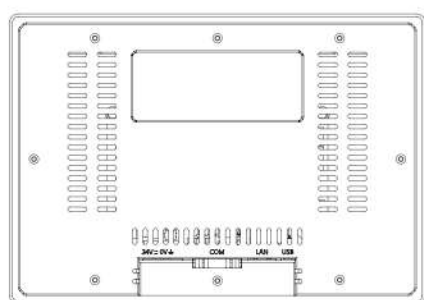
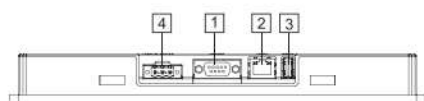
The eSMART HMI products have been designed to run the JMobile software.

- Compatible with JMobile Studio.
- Full vector graphic support. Native support of SVG graphic objects, transparency and alpha blending.
- Screen object dynamics: control visibility and transparency, move, resize, rotate any object on screen. Change properties of basic and complex objects.
- Multilanguage applications with TrueType fonts. Easily create, install and maintain applications in multiple languages to meet global requirements.
- Data display in numerical, text, bargraph, analog gauges and graphic image formats.
- Rich set of state-of-the-art HMI features: data acquisition and logging, trend presentation, alarm handling, scheduler and timed actions (daily and weekly schedulers, exception dates), recipes, security and user management, e-mail and RSS feeds.
- Wide selection of communication drivers available with multiple-driver communication capability.
- Remote monitoring and control with Client-Server functionality.
- Off-line and on-line simulation with JMobile Studio.
- Powerful scripting language for automating HMI applications. Efficient script debugger improves productivity in application development.
- Rich gallery of objects and symbols

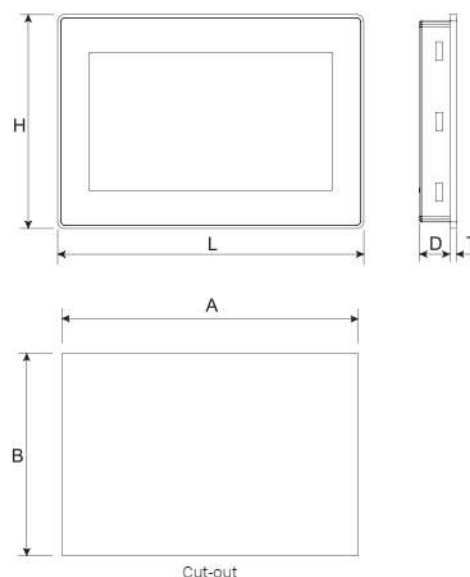
Technical Data



System Resources	
Display - Colors	10.1" TFT 16:9 - 64K
Resolution	1024x600, WVGA
Brightness	200 Cd/m² typ.
Dimming	Yes
Touchscreen	Resistive
CPU	ARM Cortex-A8 - 1 GHz
Operating System	Linux 3.12
Flash	4 GB
RAM	512 MB
Real Time Clock, RTC Back-up, Buzzer	Yes
Interface	
Ethernet port	1 (port 0 - 10/100)
USB port	1 (Host v. 2.0, max. 500 mA)
Serial port	1 (RS-232, RS-485, RS-422, software configurable)
SD card	No
Expansion	No
Ratings	
Power supply	24 Vdc (10 to 32 Vdc)
Current Consumption	0.38 A at 24 Vdc (max.)
Input Protection	Automatic
Battery	Yes (Supercapacitor)
Environment Conditions	
Operating Temp	0 to 50 °C (vertical installation)
Storage Temp	-20°C to +70°C
Operating / Storage Humidity	5-85% RH, non condensing
Protection Class	IP66, Type 2 and 4X (front); IP20 (rear)
Dimensions and Weights	
Faceplate LxH	282x197 mm (11.10x7.80")
Cutout AxB	271x186 mm (10.66x7.32")
Depth D+T	29+6 mm (1.14+0.23")
Weight	Approx 1.0 Kg
Approvals	
CE	Emission EN 61000-6-4, Immunity EN 61000-6-2 for installation in industrial environments Emission EN 61000-6-3, Immunity EN 61000-6-1 for installation in residential environments
UL	cULus: UL508
UL	cULus: Class 1 Div 2
ATEX	Zone 2: II 3 G Ex ic ec IIC T6 Gc
DNV-GL	Yes
EU RO MR	Yes



- 1 Serial Port
- 2 Ethernet Port
- 3 USB port (version 2.0 - 1.1)
- 4 Power Supply



Ordering Information

Model	Part Number	Description
eSMART10	+ESMA10U301	10" widescreen TFT color touchscreen with Ethernet and USB interfaces. JMobile runtime.



Connecting devices to iCex ICX-T245/255

V1.0

1. Preliminary

iCex supports the following physical interface:

- Ethernet (LAN) port
- RS232 port
- RS 422/485 port
- Analog input – 0 – 30.000 V
- Digital inputs (sink/PNP; logic can be reverted via software)

Note: RS232 and RS422/485 can be used simultaneously.

Different devices can be connected to iCex via this interface, like:

- PLC
- Smart instruments
- Sensors
- Dry contacts.



Note: Before continuing with this document and starting to connect devices to iCex, it's highly recommended to review [iCex spec \(link\)](#) and [Getting started \(link\)](#).

2. Connecting via LAN

iCex is equipped with standard LAN RJ45 10/100 Mbs/s port. Device can be connected with standard LAN cables – direct or via Switch.



Fig. 1 Connect direct iCex to device (PLC) via Ethernet



Fig. 2 Connecting multiple devices (PLC) to iCex via Ethernet Switch