The Unitronics V570-57-T34 offers the following onboard I/Os via HE-10 connectors:

- 16 isolated Digital Inputs, configurable via wiring to include2 HSC/Shaft-encoder Inputs
- 2 Analog Inputs
- 16 isolated Transistor Outputs

Note that you cannot wire HE-10 I/Os directly into the PLC. HE-10 connector cables and DIN-rail connector unit are available by separate order. Check the Accessories section for additional information.

Using your own cable, you can also connect the PLC I/Os directly to your machine.

You can find additional information, such as wiring diagrams, in the product's installation guide located in the Technical Library at www.unitronics.com.

Technical Specifications

Controller Power Supply

Input voltage	24VDC
Permissible range	20.4 VDC to 28.8VDC (ripple < 10%)
Max. current consumption	270mA@24V

Digital I/Os Power Supply

Input voltage	24VDC
Permissible range	20.4 VDC to 28.8VDC (ripple < 10%)
Max. current consumption	30mA@24V. See Note 1

Notes:

1. Maximum current consumption does not provide for pnp output requirements. The additional current requirement of pnp outputs must be added.

Digital Inputs

Number of inputs	16. See Note 2	
Input type	See Note 2	
Galvanic isolation	Yes. See Note 3	
Nominal input voltage	24VDC	
Input voltage	Normal digital input	High Speed Input. See Note 4
pnp (source)	0-5VDC for Logic '0' 17-28.8VDC for Logic '1'	0-3VDC for Logic '0' 21.6-26.4VDC for Logic '1'
npn (sink)	17-28.8VDC for Logic '0' 0-5VDC for Logic '1	21.6-26.4VDC for Logic '0' 0-3VDC for Logic '1
Input current	3.7mA@24VDC	
Input impedance	6.5KΩ	
Response time	10mS typical, when used as normal digital inputs	
Input cable length	Up to 30 meters, unshielded	
High speed inputs	Specifications below apply when wired as HSC/shaft-encoder. See Note 4	

Frequency

Driver type	pnp/npn	Push-pull
HSC	30kHz maximum	50kHz maximum
Shaft-encoder	15kHz maximum	25kHz maximum

Duty cycle	40-60%
Resolution	32-bit

Notes

2. Input functionality can be adapted as follows:
   All 16 inputs may be used as digital inputs. All 16 may be wired in a group, via a pin on the connector, as either npn or pnp. In addition, according to jumper settings and appropriate wiring:

   Inputs 160 & 162 can function as either a high-speed counter, as part of a shaft-encoder, or as a normal digital input

   Inputs 161 & 163 can function as either a counter reset, as part of a shaft-encoder, or as a normal digital input

   If inputs 160 & 162 is set as a high-speed counter (without reset), inputs 161 & 163 can function as normal digital inputs

3. The digital inputs and outputs are not isolated from each other. They are isolated from the analog inputs and from the controller.
4. If you configure an input as high-speed, you can use an end-device that comprises push-pull drive type. In this case, the high-speed input voltage ratings for npn/pnp apply.

Analog Inputs

Number of inputs	2
Input type	Current
Input range	0-20mA, 4-20mA
Input impedance	250Ω
Maximum input rating	±30mA, 7.5V
Galvanic isolation	None
Conversion method	Succesive approximation
Normal mode	
Resolution, except 4-20mA	10-bit (1024 units)
Resolution, at 4-20mA	204-1023 (820 units)
Conversion time	One configured input is updated per scan. See Note 5
Full-scale error	±3 LSB (0.3%)
Linearity error	±3 LSB (0.3%)
Status indication	Yes - if an analog input deviates above the permissible range, its value will be 1024.

Notes:

5. For example, if 2 inputs are configured as analog, it takes 2 scans to update all analog values.

Digital Outputs

Number of outputs	1 transistor npn (sink)	15 transistor pnp (source)
Output type	N-MOSFET (open drain)	P-MOSFET (open drain)
Galvanic isolation	Yes. See Note 3	Yes. See Note 3
Output current (resistive load)	50mA maximum	0.3A maximum per output 5A maximum total per common
Maximum frequency (resistive load)	100KHz (at maximum load resistance of 1.5kΩ)	50Hz
Short circuit protection	No	Yes
Short circuit indication	No	Via software
On voltage drop	0.4VDC maximum	0.5VDC maximum
Voltage range	3.5V to 28.8VDC, unrelated to the voltage of either the I/O module or the controller	See Digital I/Os Power Supply page 1

Graphic Display Screen	See Note 6
LCD Type	TFT
Illumination backlight	White LED
Display resolution, pixels	320x240 (QVGA)
Viewing area	5.7"
Colors	256
Touchscreen	Resistive, analog
'Touch' indication	Via buzzer
Screen brightness	Via software (Store value to SI 9).
Keypad	Displays virtual keyboard when the application requires data entry.

Notes:

6. The LCD screen may have a single pixel that is permanently either black or white.

Program

Memory size	Application Logic – 2MB, Images – 6MB, Fonts – 1MB		
Operand type	Quantity	Symbol	Value
Memory Bits	8192	MB	Bit (coil)
Memory Integers	4096	MI	16-bit
Long Integers	512	ML	32-bit
Double Word	256	DW	32-bit unsigned
Memory Floats	64	MF	32-bit
Timers	384	T	32-bit
Counters	32	C	16-bit
Data Tables	120K dynamic data (recipe parameters, datalogs, etc.) 192K fixed data (read-only data, ingredient names, etc)		
HMI displays	Up to 1024		
Program scan time	9 µsec per 1K of typical application		

Removable Memory

SD card	Compatible with fast SD cards; store datalogs, Alarms, Trends, Data Tables, backup Ladder, HMI, and OS. See Note 7

Notes:

7.User must format via Unitronics SD tools utility.

Communication

Serial ports	2. See Note 8	
RS232		
Galvanic isolation	Yes	
Voltage limits	±20VDC absolute maximum	
Baud rate range	300 to 115200 bps	
Cable length	Up to 15m (50')	
RS485		
Galvanic isolation	Yes	
Voltage limits	−7 to +12VDC differential maximum	
Baud rate range	300 to 115200 bps	
Nodes	Up to 32	
Cable type	Shielded twisted pair, in compliance with EIA RS485	
Cable length	1200m maximum (4000')	
CANbus port	1	
Nodes	CANopen: 127	Unitronics' CANbus protocols: 60
Power requirements	24VDC (±4%), 40mA max. per unit	
Galvanic isolation	Yes, between CANbus and controller	
Cable length/baud rate	25 m 100 m 250 m 500 m 500 m 1000 m* 1000 m*	1 Mbit/s 500 Kbit/s 250 Kbit/s 125 Kbit/s 100 Kbit/s 50 Kbit/s 20 Kbit/s
	* If you require cable lengths over 500 meters, contact technical support.	
Optional port	User may install a single Ethernet port, or an RS232/RS485 port. Available by separate order.	

Notes:

8. The standard for each port is set to either RS232/RS485 according to DIP switch settings. Refer to the Installation Guide.

I/O Modules

Snap-in I/O modules	Plugs into rear port to create self-contained PLC with up to 43 I/Os. Number of I/Os and types vary according to module.
Expansion modules	Local adapter (P.N. EX-A1), via I/O Expansion Port. Integrate up to 8 I/O Expansion Modules comprising up to 128 additional I/Os. Remote adapter (P.N. EX-RC1), via CANbus port. Connect up to 60 adapters; connect up to 8 I/O expansion modules to each adapter.
Exp. port isolation	Galvanic

Notes:

9. V570 supports digital, high-speed, analog, weight and temperature measurement I/Os via:
   - Snap-in I/O Modules
     Plug into the back of the controller to provide an on-board I/O configuration
   - I/O Expansion Modules
     Local or remote I/Os may be added via expansion port or CANbus.

Miscellaneous

Clock (RTC)	Real-time clock functions (date and time).
Battery back-up	7 years typical at 25°C, battery back-up for RTC and system data, including variable data.
Battery replacement	Yes, without opening the controller.

Dimensions

Size	197 X 146.6 X 68.5mm (7.75" X 5.77" X 2.7"). See Note 10
Weight	833 g (29.3 oz)

Notes:

10. For exact dimensions, refer to the product's Installation Guide.

Mounting

Panel-mounting	Via brackets

Environment

Inside cabinet	IP20 / NEMA1 (case)
Panel mounted	IP65 / NEMA4X (front panel)
Operational temperature	0 to 50ºC (32 to 122ºF)
Storage temperature	-20 to 60ºC (-4 to 140ºF)
Relative Humidity (RH)	10% to 95% (non-condensing)

Accessories

HE-10 I/O connection cable	P/N: HE1-CA100 20-wire ribbon cable, length 1 meter, ended by HE-10 sockets
HE-10 I/O connection kit	P/N: HE-IO34-100
Kit contents	▪ HE-10 I/O connector unit, with screw terminal blocks, DIN-mounted ▪ Two HE1-CA100 cables

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