

# RAC6180 Industrial Computers

## Rugged Computing Power in a Small Form Factor

### Product Profile

#### Rugged

If you're looking for a truly rugged industrial computer, look no further. With extraordinary resistance to shock, vibration, dirt, washdowns and high temperatures, the RAC6180 Industrial Computers are built to withstand even the most severe factory environments.



Just a few of many industrial design characteristics include:

- high temperature rating
- high shock and vibration ratings
- shock mount for hard drives (patent pending)
- corrosive resistant chassis and electrical connections
- thick heavy duty circuit boards
- high component standards
- filtered ventilation
- secured critical connections
- parity system memory
- secured option modules
- strict component derating guidelines
- mounting methods optimized for factory enclosures
- integral pointing devices

#### Flexible

"Build to order" flexibility is the order of the day for the space-saving display and non-display versions. Choose from a wide range of options, including intuitive touch screens, pre-installed communications cards and high-resolution displays — up to 15" — sized to meet your application requirements. The common denominator — powerful Pentium®, Pentium® II and Pentium® III processors with PCI and ISA backplanes.



*RAC6180 with 12.1" display option*

#### Open

The RAC6180 Series Industrial Computers can be ordered with pre-installed software products, including popular operating systems, HMI and control software. Through complete adherence to today's PC standards, these products can effortlessly accommodate your evolving requirements.



Bringing Together Leading Brands in Industrial Automation



12.1" Display with  
Function and  
Numeric Keys;  
Touch Screen  
Optional



15" Display with  
Function and  
Alphanumeric Keys;  
Touch Screen  
Optional

## Front Panel Description — Integrated 12.1"/15" Flat Panel Display

<b>Front Panel Configurations</b>	RAC6180 w/ 12.1" Display <ul style="list-style-type: none"> <li>• Front Panel with function &amp; numeric keys, integral mouse &amp; optional touch screen</li> </ul>	RAC6180 w/ 15" Display <ul style="list-style-type: none"> <li>• Front Panel with Function Keys and Alphanumeric Keys (touch screen optional)</li> <li>• Front Panel with No Keys (touch screen optional)</li> </ul>
<b>Keypad Description</b>		
Function Keys (left of display)	10 keys labeled K1-K10 (not changeable) generate codes F1-F10 (configurable with Keypad Configuration Utility).	12 keys labeled K1-K12 (not changeable) generate codes F1-F12 (configurable with Keypad Configuration Utility).
Function Keys (below display)	28 keys labeled A-Z, windows logo key (left) and application logo key generate key codes accordingly. These labels are changeable via a slide-in insert. The reverse side top row of the factory installed insert is labeled F1-F12, windows logo key (left) and 1 blank. The reverse side bottom row of the factory installed insert is labeled S1-S12, application logo key and 1 blank. The key codes are configurable with the Keypad Configuration Utility.	
Numeric Keys (right of display)	29 keys labeled 0-9, Back Space, NumLock, -, +, ↑, ↓, ←, →, End, PgUp, PgDn, Del, Ins, Enter, Cntrl, Alt, Esc, Tab, CapsLock, Shift, Space, /, *, period. These labels and key codes cannot be changed.	28 keys labeled 0-9, Back Space, NumLock, -, +, ↑, ↓, ←, →, End, PgUp, PgDn, Del, Ins, Enter, Cntrl, Alt, Esc, Tab Rt, Tab Lft, CapsLock, Shift, Space, /, *, period. These labels and key codes cannot be changed.
Integral Mouse	Round membrane mouse control with right and left mouse button (membrane) provides handy, permanent, sealed mouse operation.	N/A
Brightness Control	Increase and decrease keys on front panel can optionally be disabled with keypad configuration software	
<b>Display Size</b>	12.1" diagonal, flat TFT (thin film transistor) 800x600 resolution, brightness control (keys located on front panel for versions with keypads, knob access right-side for other versions)	15" diagonal, flat TFT (thin film transistor) 1024x768 resolution, brightness control (keys located on front panel for versions with keypads, knob access right-side for other versions)
<b>Display Back Light</b>	Two bright, snap-in cold-cathode florescent lamps are mounted horizontally, 1 across the top and 1 across the bottom of the display. Lamps are easily replaceable by swinging open the chassis where it is hinged to (or detachable from) the unit's front panel. Removal of unit from user enclosure is often not required.	
<b>Removable Media Options</b>	STANDARD HALF-HEIGHT BAY (lower rear access): For CDROM, ZIP drive or 1.44 Mb Floppy. STANDARD 1-INCH PERIPHERAL BAY (upper rear access): For 1.44 Mb Floppy Drive. FACTORY INSTALLED OPTIONS: 1) CDROM Drive or ZIP drive, 2) 1.44 Mb Floppy Drive, or 3) Both. If one drive is selected, then it is factory installed in the half-height bay. If both are selected, then the Floppy Drive occupies the 1-inch Peripheral bay. Note: Series A units instead included the Peripheral Bay on the chassis left side.	
<b>Front Panel Ports</b>	Infrared (IrDA) data port	
<b>Key Type</b>	Membrane type with tactile feedback. Rated for one million operations.	
<b>Touch Screen Option</b>	Resistive membrane, analog, drivers for Windows® 95/98 or Windows NT® Workstation 4.0	
<b>Front Panel LED Indicators</b>	Power on, hard drive access, over-temperature (also caps-lock and insert for front panel with keypads)	
<b>Configurable Key Codes</b>	A Keypad Configuration Utility (for Windows 95/98 or Windows NT Workstation 4.0) allows modification of key codes generated by individual keys below and at the sides of the display. Users can disable individual keys, Ctrl-Alt-Del combination and select various modes of operation.	



10.4" Display,  
Numeric Front Panel,  
Integral Mouse,  
Front Access



10.4" Display,  
Alphanumeric Front  
Panel, Front Access

## Front Panel Description — Integrated 10.4"/11.3" Flat Panel Display

<b>Front Panel Configurations</b>	Front Panel with Function & Numeric Keys, Integral Mouse & optional touch screen Front Panel with Function and Alphanumeric Keys (10.4" version only)
<b>Numeric Front Panel (10.4"/11.3")</b>	
FKeys (below display)	26 keys total. The top row labeled F1-F12 generates codes F1-F12. The bottom row labeled S1-S12 generates codes shift F1 — shift F12. These labels are changeable via two slide-in inserts (reverse sides labeled A-Z). These key codes are configurable with the Keypad Configuration Utility.
Numeric Keys (right of display)	36 keys labeled 0-9, Pause, Break and Print Screen, NumLock, -, +, ≠, Ø, ", Æ, End, PgUp, PgDn, Del, Ins, Enter, Cntrl, Alt, Esc, Tab Rt, Tab Lft, CapsLock, Shift, Space, /, *, Period. Labels and codes cannot be changed.
Integral Mouse	Round membrane mouse button with right and left button pad provides handy, permanent mouse operation.
Brightness Control	Increase and decrease keys on front panel can optionally be disabled with Keypad Configuration Utility.
<b>Alphanumeric Front Panel (10.4")</b>	
FKeys (left of display)	8 keys labeled K1-K8 (not changeable) generate codes Ctrl F1 - Ctrl F8 (configurable with Keypad Configuration Utility).
Alphanumeric Keys (right of display)	8 keys labeled K9-K16 (not changeable) generate codes Ctrl F1 - Ctrl F8 (configurable with Keypad Configuration Utility).
FKeys (below display)	Top row keys labeled F1-F10 generate codes F1-F10. Bottom row keys labeled F11-F20 generate codes shift F1-shift F10. These labels are changeable via two slide-in inserts. The key codes are configurable with the Keypad Configuration Utility.
Data Keys (right of display)	28 keys labeled A-Z, 0-9, NumLock, -, +, ≠, Ø, ", Æ, End, PgUp, PgDn, Del, Ins, Enter, Cntrl, Alt, Esc, Tab Rt, Tab Lft, BackSpace, CapsLock, Shift, Space, /, *, period, &, (, ), \$, %, !, @, #, <, >, [, ] and others. These labels and key codes cannot be changed.
<b>Display</b>	10.4" or 11.3" diagonal, flat TFT (thin film transistor, active matrix), 800x600 resolution.
<b>Display Back Light</b>	Integral to 11.3" display. Replaceable on 10.4" display. Replaceable back light assembly includes 7 cold-cathode florescent tubes and is accessed by swinging open the chassis where it is hinged to (or detachable from) the unit's front panel.
<b>Left Front Access Door</b>	Removable media access.
<b>Right Front Access Door</b>	Access to on-off button, InfraRed (IrDA) port, PS/2 Mouse and keyboard ports.
<b>Removable Media Access</b>	Same as for RAC6180 computers without integral display. See rack mount with front access (page 4).
<b>Key Type</b>	Membrane type with tactile feedback. Rated for one million operations.
<b>Touch Screen Option</b>	Resistive membrane, analog, drivers for Windows 95/98 or Windows NT Workstation 4.0.
<b>Front Panel LED Indicators</b>	Power on, hard drive access, over-temperature (also caps-lock and insert for front panel with keypads).
<b>Configurable Key Codes</b>	A Keypad Configuration Utility (for Windows 95/98 or Windows NT Workstation 4.0) allows modification of key codes generated by individual keys below and to the left of the display. Users can disable individual keys, Ctrl-Alt-Del combination and select various modes of operation.

## Installation — All RAC6180 Computers with Integrated Flat Panel Display

<b>Mounting Methods</b>	Panel mount through cutout, secure with integral bezel studs through panel stud holes, or secure unit with inside-panel clips (no stud holes required, bezel studs are removable).
<b>Dimensions (Approximate)</b>	Front Panel Height = 14" (355.6mm) / 8U, Width = 19" (482.6mm) Depth into Enclosure: = 8.38" (212.85mm)
<b>Cutout Dimensions</b>	16.9" (429.26mm) W x 12.85" (325.39mm) H, see cutout drawing for stud hole locations (same for all 6180)
<b>Unit Weight</b>	37 lbs. (16.65 kg)
<b>Input Voltage Requirements</b>	85-132, 170-264 VAC auto-switching, 47-63 Hz
<b>Input Power Requirements</b>	MAXIMUM: 230 watts (785 BTU/hr) max, 465 VA max TYPICAL: 96 watts (328 BTU/hr) with Pentium II, 333Mhz, A-B PCI Video Card, ISA Keyboard/Touch Interface card, and one additional ISA option card
<b>Output Power</b>	155 watts max. at 50°C (180/210 W Power Supply)
<b>Chassis Ventilation Fans</b>	Main Ventilation Fan (changeable filter, chassis left side) Power Supply Fan (chassis right side)
<b>Peripheral Ports</b>	The pre-installed ISA keyboard interface card (KIC) monitors the front panel's keys, PS/2 ports, touch screen and the KIC's rear PS/2 port (for external panel mount keyboard). Two pre-installed external PS/2 jumper cables complete a connection from the KIC to the motherboard's PS/2 ports. A connection to the front panel PS/2 keyboard port will disable a connection to the KIC's rear PS/2 port.



*Computer without  
Integral Display;  
Inside-Panel Mount*



*Computer without Integral  
Display; Rack Mount with  
Front Access*

## Description — RAC6180 Computers without Integrated Display

<b>Mounting Panel Types</b>	Inside-panel Mount (metal bezel, no front panel) Rack Mount with Front Panel Access
<b>Inside-panel Mount Type</b> (metal bezel)	Instead of an integral flat display, the front panel is a flat metal bezel that can be mounted via four bolt holes flush to a surface or sub-panel inside of an enclosure. The chassis rear becomes the front for removable media access. Also 19" rack mountable. Monitor ordered separately.
Removable Media Access	Standard half-height bay (lower rear access): For CDROM, ZIP drive or 1.44 Mb floppy Standard 1-inch peripheral bay (upper rear access): For 1.44 Mb floppy Factory installed options: 1) CDROM or ZIP drive, 2) 1.44 Mb floppy drive, or 3) Both. If one drive is selected, then it is factory installed in the half-height bay. If both are selected, then the floppy drive occupies the 1-inch peripheral bay.
<b>Rack Mount with Front Panel Access</b>	Molded plastic bezel includes two front access doors and front panel LED indicators but excludes integral display. 19" rack mountable. Monitor ordered separately.
Left Front Access Door	Removable media access.
Right Front Access Door	Access to on-off button, InfraRed (IrDA) port, PS/2 Mouse and keyboard ports.
Front Panel LED Indicators	Power on, hard drive access, over-temperature.
Removable Media Access	Standard bi-directional half-height bay: For CDROM, ZIP drive or 1.44 Mb floppy. Access is provided either behind the front left door (device forward) or at the chassis rear (device reversed). Standard 1-inch peripheral bay (upper rear access): For 1.44 Mb floppy. Access is located at the chassis rear (series-A computers provided access at the chassis left side instead). Factory installed options: 1) CDROM or ZIP drive, 2) 1.44 Mb floppy drive, or 3) Both. If one drive is selected, then it is mounted facing forward behind the front left door. If both are selected, then the CDROM or ZIP drive is mounted facing forward behind the front left door and the 1.44 Mb floppy drive is installed in the rear facing one inch peripheral bay.

## Installation — RAC6180 Computers without Integrated Display

<b>Mounting Methods</b> (Front access version)	Panel mount through cutout, secure with integral bezel studs through panel stud holes, or secure unit with inside-panel clips (no stud holes required, bezel studs are removable).
<b>Dimensions (Approximate)</b> (Front access version)	Front Panel Height = 14" (355.6mm) / 8U, Width = 19" (482.6mm) Depth into Enclosure = 8.38" (212.85mm)
<b>Cutout Dimensions</b>	16.9" (429.26mm) W x 12.85" (325.39mm) H. (for front access version).
<b>Unit Weight</b>	37 lbs. (16.65 kg).
<b>Input Voltage Requirements</b>	85-132, 170-264 VAC auto-switching, 47-63 Hz.
<b>Input Power Requirements</b>	MAXIMUM: 230 watts (785 BTU/hr) max, 465 VA max TYPICAL: 96 watts (328 BTU/hr) with Pentium II, 333Mhz, A-B PCI Video Card and one additional ISA option card.
<b>Output Power</b>	155 watts max. at 50°C (180/210W Power Supply).
<b>Chassis Ventilation Fans</b>	Main Ventilation Fan (changeable filter, chassis left side). Power Supply Fan (chassis right side).

## Environmental Specifications — All RAC6180 Industrial Computers

<b>Front Panels</b>	NEMA 4X (indoor use only) when panel mounted (excludes non-display metal bezel).
<b>Front Panel Materials</b>	Amorphous thermoplastic polyetherimide resin, high chemical resistivity.
<b>Ambient Temperature</b>	Operating: 5 to 50°C., Non-operating: -25 to 60°C.
<b>Relative Humidity</b>	8% to 80% non-condensing.
<b>Operating Vibration</b>	Swept sine input, 0.006 inch displacement 10-57 Hz, 1.0g acceleration, 57-150 Hz.
<b>Operating Shock</b>	15G (1/2 Sine, 11 msec duration).
<b>Agency Certifications</b>	UL, ULc, CE.

## Computer Specifications - All RAC6180 Industrial Computers

<b>Processor Motherboard Type</b>	ATX design standard, advanced power management supported by BIOS
<b>Chassis Access (right side)</b>	The chassis' right side (front panel view) provides access to option slots, power on-off button, standard IEC power cord connector, 2 serial (9-pin) and 1 parallel (25-pin) ports, 1 PS/2 keyboard port, 1 PS/2 mouse port, brightness control knob (display units without front panel keypads), 2 USB ports (Pentium II, Pentium III only)
<b>Computer Options</b>	
<i>Pentium Processor</i>	166 Mhz
System Memory	16 Mb, 32 Mb, 64 Mb, 128 Mb
ISA/PCI Slots Available	2 PCI, 2 ISA + 1 shared
<i>Processor</i>	Pentium II 400 Mhz, Pentium III 450 Mhz, 500 Mhz
System Memory	64 Mb, 128 Mb, 256 Mb, 384 Mb
ISA/PCI Slots Available	2 PCI + 0 ISA + 1 shared (PCI or ISA)
Slot Availability Exceptions	For units with no keypads AND no touch screen, add 1 ISA slot to the total available. Additionally, add 1 PCI slot for Pentium units that exclude an integral display (for your choice of a pre-installed video card). Any drive in the reversible lower left bay will limit the ISA slots to half-length cards. Otherwise all slots are full length.
Video Card Pre-installed	Computers with an integrated flat display include a PCI video card which drives the flat display and includes a standard HD15 video output for an optional remote monitor (simultaneous video).
Hard Drive Options	3+, 8+, 13+ GB, 3.5" EIDE, pre-installed in shock mount isolation kit (patent pending) mounted in one of two available internal bays
Communications Options	Ethernet (PCI), 1784-KTX, KTXD, KTC, KTCX (ISA), Ethernet and 1784 combinations
Operating Systems Options	Windows 95/98, Windows NT Workstation 4.0
Application Software Options	RSView32 RT x with RSLINX (where x = 150, 300, 1500, 32K or 70K versions)

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