DYALOX INDUSTRIAL PC

The reliable industrial dialogue

» All industrial-grade components
» Fan-less and HDD-less concept
» Windows XP embedded

Advanced Industrial Automation

OMRON

OMRON

DyaloX...
the reliable choice

Created specifically for operation 24/7 in even the most demanding industrial environments, Omron's DyaloX industrial PC is setting new standards in industrial reliability. We've achieved this exceptional reliability by using only the highest industrial grade components and by eliminating every potential source of failure – such as moving parts like hard disks and cooling fans.

What's more, drawing on our many years' experience in the manufacture of industrial-class standalone PC-based equipment (like Automated Teller Machines), we've created unique self-diagnostic hardware and software, such as O-RAS, to ensure that DyaloX IPCs will keep on running long after other IPCs have given up. In short, the new DyaloX gives you the highest possible reliability and operational continuity in your PC-based industrial-automation system.

Continuity

- 3 years warranty
- 5 years guaranteed delivery
- 7 years repair after purchase

Reliability

- No fan or rotating parts
- No HDD but reliable Disk on Module
- Intel industrial grade CPU

Expandability

- 1 x CF
- 1 x ETN
- 2 x USB
- 2 x RS-232C
- 2 x PCI

A DyaloX IPC can manage a complete machine and can, when fitted with the optional PLC board, even control a complete machine.

Reliable hardware

Exceptional service

Unique software

Features

- Tough 12-inch Omron TFT touch screen
- Industrial-grade 1.3 GHz Intel Celeron CPU
- 1 GB Disk-on-Module storage
- Compact Flash memory for extended storage
- Fan-less heatsink cooling for enhanced reliability
- Courier repair service, 3 year warranty, 5 year delivery, 7 year repair
- Two PCI slots

24/7

Guaranteed continuity

The DyaloX IPC is designed to provide exceptional performance operating round-the-clock throughout its lifetime. If something should go wrong with our product and it needs repair, we will provide a courier service to collect the product from your customer (within most European countries) and to deliver it back to the same address repaired within 5 working days. Besides this, Omron offers you a full 3 year warranty, a minimum of 5 years' delivery of the same product and a guarantee of repair of your DyaloX IPCs for up to 7 years after purchase. So unlike many office-PC type of products that have, for instance, very short life cycles, the DyaloX is a product with guaranteed continuity.

Trusted industrial-grade components

DyaloX IPCs are built using state-of-the-art supplier-guaranteed components, including industrial-grade power supply and Celeron CPU. Motherboards are designed and assembled in-house by Omron Europe, so we're in complete control of the process and not dependent on other motherboard suppliers. This assures high, consistent quality and means that, in the unlikely event of a failure, we can guarantee repair within 5 days in Europe, assuring you minimum disruption to your industrial processes.

Embedded software

DyaloX IPCs are delivered with pre-installed software. Besides the O-RAS utility software that acts as the interface to our unique RAS (Reliability, Availability, Serviceability) board, pre-installed software includes a special highly-stable 'industrialized' version of the Windows XP Embedded operating system.

OMRON RAS Solution
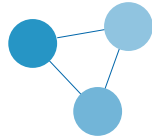
RAS board for continuous monitoring

Inside the DyaloX IPC series, a separate RAS board, interfaced by embedded RAS utility software, continually monitors the motherboard. Because the RAS board is a stand-alone board, it can gather data from the motherboard no matter what the Operating System or hardware conditions are.
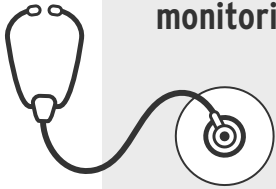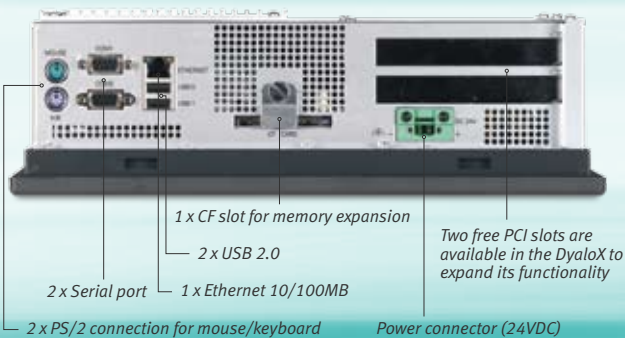
Logging data

Warning levels of monitor values can be set manually in the RAS utility. Data logged at time of failure, such as motherboard temperature, voltages, date and time, LCD conditions and other relevant data can all be displayed automatically on restart or manually by making use of the RAS utility software. So whatever the reason for failure, the RAS board is able to provide a system snapshot just before failure occurs. By analyzing the log data, the trend and cause of failures can be quickly found and rectified for higher reliability in the future.

1 x CF slot for memory expansion

2 x USB 2.0

2 x Serial port — *1 x Ethernet 10/100MB*

2 x PS/2 connection for mouse/keyboard

Two free PCI slots are available in the DyaloX to expand its functionality

Power connector (24VDC)

No moving parts to fail

Fewer moving parts mean fewer potential causes of failure and hence a more reliable product. So instead of a hard disk drive, the new DyaloX IPC series uses a 1 GB silicon storage module that offers fast access and exceptional ruggedness. And instead of an electric fan to cool the CPU, heat is radiated away by a heavy heatsink with cooling fins.

No hard disk drive

"Disk on Module" is a very reliable silicon storage type with bad sector management and industrial operating temperatures.

No Fan

A fan is a very unreliable part of a PC. If the fan fails the complete system eventually breaks down. That's why we chose for a fan-less concept.

IP 65 sealed front

*Heatsink to dissipate heat
generated by the CPU and
other components in the
DyaloX*

Compact and expandable

The functionality of DyaloX IPCs is also expandable via
PCI slots, USB and serial ports plus Ethernet ports and
a PS/2 interface. Expansion possibilities include:

- A special PLC PCI option board, featuring an Omron
  CS1 PLC. This board enhances reliability by adding
  a second CPU independent of the motherboard to control
  your machine. It also means that you can provide real
  PLC control in your automation system using standard
  Omron PLC software such as CX-One.

- DeviceNet master interface

- Compact Flash data storage extension
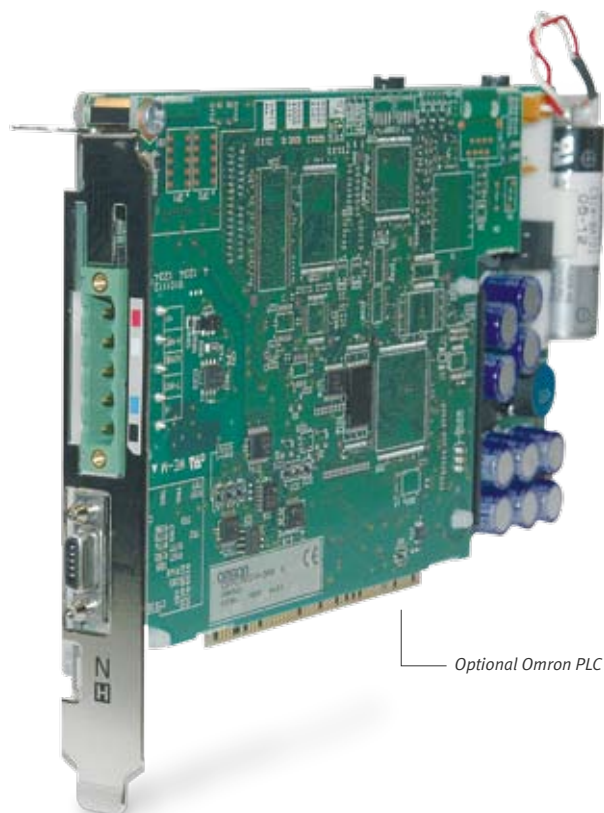
Optional Omron PLC board

OMRON

Ratings and specifications

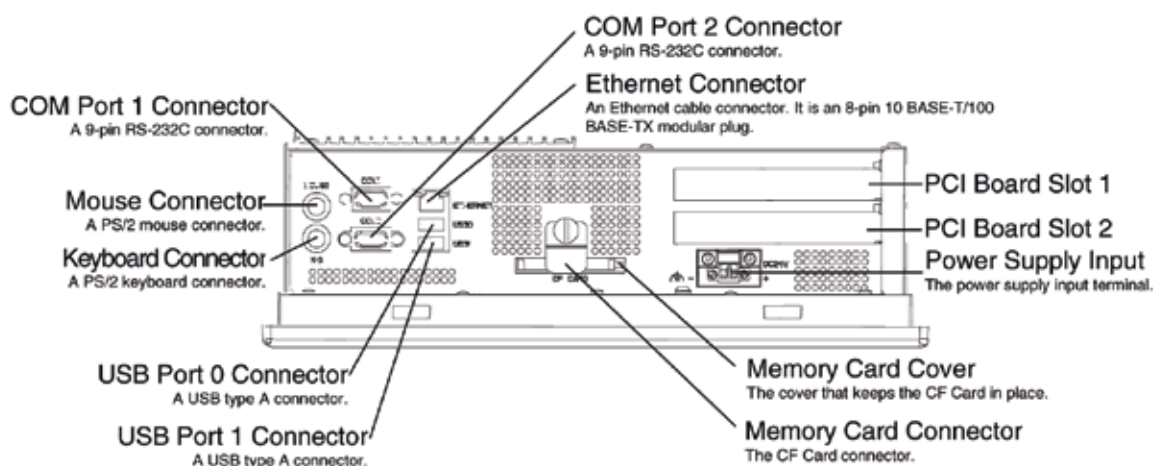| Item		Specifications
OS		Preinstalled Windows XP Embedded
Processor		1.3 GHz Intel Celeron® M Processor
Storage device	Type	DiskOnModule (flash memory)
	Capacity	1 Gbyte
	Service life (write cycles)	300,000 cycles
Memory	Main memory	512 Mbyte DDR-SDRAM (No-ECC)
	Cache memory	512 Kbyte Level 2 cache memory (built into the CPU)
Display panel	Type	TFT color LCD
	Size	12.1 inches
	Resolution	1024 x 768 dots
	Contrast	300 cd/m^2 (typical) (See note 1.)
	Viewing angle	130° left to right, 90° up and down
	Colors displayed	262,144
Backlight	Type	2 cold-cathode fluorescent lamps (CCFL)
	Contrast adjustment	Three-level software adjustment. (See note 2.)
	Backlight not lit detection	The software reads the lamp burnout detection signal from the inverter. (See note 3.)
	Service life	50,000 hours min. (See note 4.)
Touch panel	Type	Analog resistive type
	Effective input area	247 mm x 185.5 mm
	Operating service life	10,000,000 operations (with non-stop key stroking using fingers to input) 100,000 characters (with non-stop character entry using a stylus to input)
Interface	Keyboard	PS/2 keyboard with 6-pin Mini DIN connector
	Mouse	PS/2 mouse with 6-pin Mini DIN connector
	Serial ports	2 ports conforming to EIA RS-232C for 9-pin D-SUB female connectors Pin No. 6 output: +5 V (250 mA max.) (See note 5.)
	Ethernet	One 10 BASE-T/100 BASE-TX port for an RJ45 connector
	USB ports	2 USB 2.0/1.1 ports for USB-type A connectors
	Memory Card	Type I CF Card, 1 slot
Expansion slots		PCI expansion bus, 2 slots
Special RAS board	External input port	3-pin connector port for the UPS power interruption signal
	Status LED indicators	4 (RUN/BATLOW/ERR/DIAG)
RAS functions	Special RAS board functions	Alive connection monitoring, device restart, timer start, startup and shutdown monitoring, backlight lit time measurement, UPS power interrupt signal output, and logging functions
	Motherboard RAS functions	Standard PC RAS info, post error logging, post error retry, CMOS data recovery
POWER indicator		Yes (green)
Service life		50,000 hours at 40°C (See note 6.)
Battery life	Main board	5 years at 25°C (NSA-BAT01)
	RAS board	5 years at 25°C (NSA-BAT02)

Note 1: This contrast value is strictly a reference value at maximum contrast.

2: The contrast cannot be adjusted significantly.

3: It is not the service life, but rather lamp failure due to hardware problems such as a broken wire that is detected. Backlight not lit detection means both backlight lamps have burnt out.

4: The service life is a guideline for maximum contrast at room temperature with normal humidity and is provided strictly for reference. It varies significantly with the ambient temperature. The service life will be shorter under extreme (high or low) temperature conditions and falls off sharply particularly under low-temperature conditions.

5: Serial ports 1 and 2 cannot output +5 V at the same time.

6: The service life is a guideline that is provided strictly for reference. It varies with factors such as the installation location and operating conditions.

General specifications

Item	Specifications
Rated supply voltage	24 V DC
Allowable supply voltage range	20.0 V DC to 27.6 V DC (24 V DC±15%)
Power consumption	80 W max.
Ambient operating temperature	0 to 50°C (See notes 1 and 2.)
Ambient storage temperature	−10 to 55℃ (See note 2.)
Ambient operating humidity	35% to 80% with no condensation (See note 2.)
Ambient storage humidity	10% to 85% with no condensation (See note 2.)
Operating atmosphere	Must be free of corrosive gases. Must be fairly dust free.
Noise resistance	Conforms to IEC6100-4-4, power supply line: 2 kV
Vibration resistance (in operation)	Conforms to JIS C0041, 0.05-mm amplitude at 10 to 55 Hz for 50 min each in the X, Y, and Z directions
Shock resistance (in operation)	Conforms to JIS C0041, 196 m/s^2 three times each in the X, Y, and Z directions
Dimensions (excluding protrusions)	322 mm x 264 mm x 100 mm (W x H x D)
Weight	5 kg max.
Degree of protection	Front panel: IP65 or the equivalent (display side only) (See note 3.)

Note 1: The ambient operating temperature may be restricted as described below depending on whether a PCI Board is installed, the type of Board installed, and the mounting angle of the Unit.

Item	Specifications	Item	Specifications
NSA12-TX01B-E	DyaloX Industrial PC 12"	NSA12-TX01S-E	DyaloX Industrial PC 12"
	1.3Ghz Celeron		1.3Ghz Celeron
	512MB RAM		512MB RAM
	1GB storage		1GB storage
	XPe		XPe
	No Fan		No Fan
	No HDD		No HDD
	black		silver
NSA-BAT01	DyaloX Industrial PC Main board battery	NSA-BAT02	DyaloX Industrial PC RAS board battery

OMRON EUROPE B.V. Wegalaan 67-69, NL-2132 JD, Hoofddorp, The Netherlands. Tel: +31 (0) 23 568 13 00 Fax: +31 (0) 23 568 13 88 www.omron-industrial.com

Austria
Tel: +43 (0) 1 80 19 00
www.omron.at

Belgium
Tel: +32 (0) 2 466 24 80
www.omron.be

Czech Republic
Tel: +420 234 602 602
www.omron.cz

Denmark
Tel: +45 43 44 00 11
www.omron.dk

Finland
Tel: +358 (0) 207 464 200
www.omron.fi

France
Tel: +33 (0) 1 56 63 70 00
www.omron.fr

Germany
Tel: +49 (0) 2173 680 00
www.omron.de

Hungary
Tel: +36 (0) 1 399 30 50
www.omron.hu

Italy
Tel: +39 02 326 81
www.omron.it

Middle East & Africa
Tel: +31 (0) 23 568 11 00
www.omron-industrial.com

Netherlands
Tel: +31 (0) 23 568 11 00
www.omron.nl

Norway
Tel: +47 (0) 22 65 75 00
www.omron.no

Poland
Tel: +48 (0) 22 645 78 60
www.omron.pl

Portugal
Tel: +351 21 942 94 00
www.omron.pt

Russia
Tel: +7 495 745 26 64
www.omron.ru

Spain
Tel: +34 913 777 900
www.omron.es

Sweden
Tel: +46 (0) 8 632 35 00
www.omron.se

Switzerland
Tel: +41 (0) 41 748 13 13
www.omron.ch

Turkey
Tel: +90 (0) 216 474 00 40
www.omron.com.tr

United Kingdom
Tel: +44 (0) 870 752 08 61
www.omron.co.uk

More Omron representatives
www.omron-industrial.com

Authorised Distributor:

Control Systems
• Programmable logic controllers • Human-machine interfaces • Remote I/O

Motion & Drives
• Motion controllers • Servo systems • Inverters

Control Components
• Temperature controllers • Power supplies • Timers • Counters • Programmable relays
• Digital panel indicators • Electromechanical relays • Monitoring products • Solid-state relays
• Limit switches • Pushbutton switches • Low voltage switch gear

Sensing & Safety
• Photoelectric sensors • Inductive sensors • Capacitive & pressure sensors • Cable connectors
• Displacement & width-measuring sensors • Vision systems • Safety networks • Safety sensors
• Safety units/relay units • Safety door/guard lock switches

OMRON