

Product News

Omron magazine 2008

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CP1L-M60
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DYALOX INDUSTRIAL PC SERIES

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round-the-clock operation

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Never stop, never fail, just create...



It's what we make - it's what we know!

Dear readers,

Visitors to the Omron Electronics website now have access to an entirely new and very versatile feature. 'Expert Area' are being introduced in recognition of the fact that most people come to the site with a problem, and that they are looking for solutions rather than for a specific product. Over the years, as the website has developed, it has included news about product developments and product applications, as well as case studies about users of Omron systems. Now the Expert Area will draw all of this information together, to show customers and potential customers what expertise Omron has in their particular sector.

By the end of 2008 there will be three of these Expert Areas on the website, dealing with the automotive business, SEI (Semiconductor, Electronics Industry & Photo Voltaic), and food processing/packaging. Within each area, users will be able to look at a specific process, and within that process they will find related applications and case studies.

 Visit: www.industrial.omron.eu/expert_area



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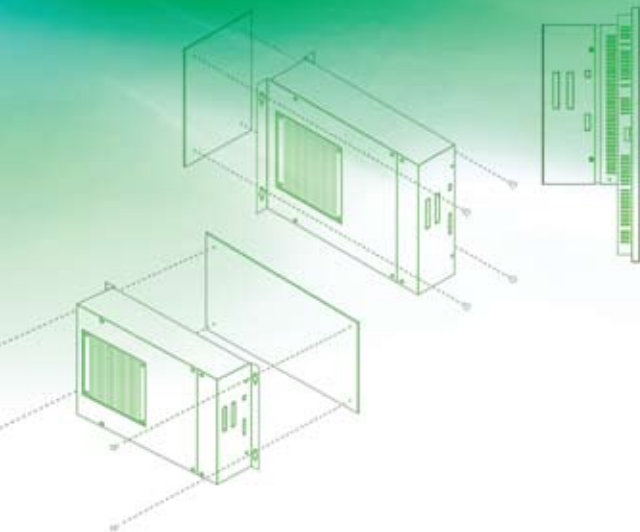
Ruggedized for reliable round-the-clock operation

The DyaloX industrial PC sets new standards in reliable 24/7 operation, even in the most demanding industrial environments. Its exceptional reliability starts with the design and goes through to production, assembly and final inspection. Potential source of failure, or other moving parts, are eliminated at the design stage and only the highest industrial-grade components are used to minimize the risk of failure and ensure suitability for any industrial environment. This followed by exhaustive quality testing and inspection.

Reliability is also enhanced through the use of Omron's unique RAS self-diagnostic hardware and software, which gives a warning if conditions become unstable. The RAS concept is based on our many years of experience in automating industrial-class stand-alone equipment, such as cash machines (ATMs), point of sale terminals and ticketing/vending machines. With RAS we monitor several parameters, including voltages, temperatures and software behaviour, and can take corrective action while protecting stored data.

Omron offers a full 3-year warranty, and guarantees that repairs can be made up to 7 years after purchase.





Features and benefits of the new 600 MHz model:

- Reliable 24/7 operation in even the harshest conditions
- Industrial-grade 600 MHz Intel Celeron M CPU
- No moving parts, fan-less design and reliable silicon storage up to 8 GB
- High-quality touch screen with 2 x USB on front
- Serial, USB and Ethernet connections
- 3-year warranty, 5-year guaranteed delivery, 7-year repair service

New 600 MHz model

In addition to the existing 1.3 GHz CPU model, which is available in a panel and box version with 12" to 17" screens, Omron now offers a 600 MHz CPU model in both 12" and 15" panel size.

This new model is ideal for running a wide range of basic applications and still leaves you with many possibilities for expansion. It comes with two Ethernet ports and a single PCI slot to give you maximum flexibility for connecting other devices, including USB devices – via two rear-mounted ports and two IP65-protected ports on the front.

Memories range from 256 MB up to 1 GB of RAM. Storage possibilities include reliable silicon storage and a conventional HDD. The DyaloX IPC comes with the extended version of Windows XP Embedded installed on a 2, 4 or 8 GB CF memory card.

Machine visualization

For HMI software; Omron offers CX-Supervisor, an open software package targeting machine visualization, and NS-Runtime for running (re-using) projects developed for NS-series HMI. For more information contact your local Omron office.

CP1L compact machine controller



New CPU models increase scalability and cost effectiveness

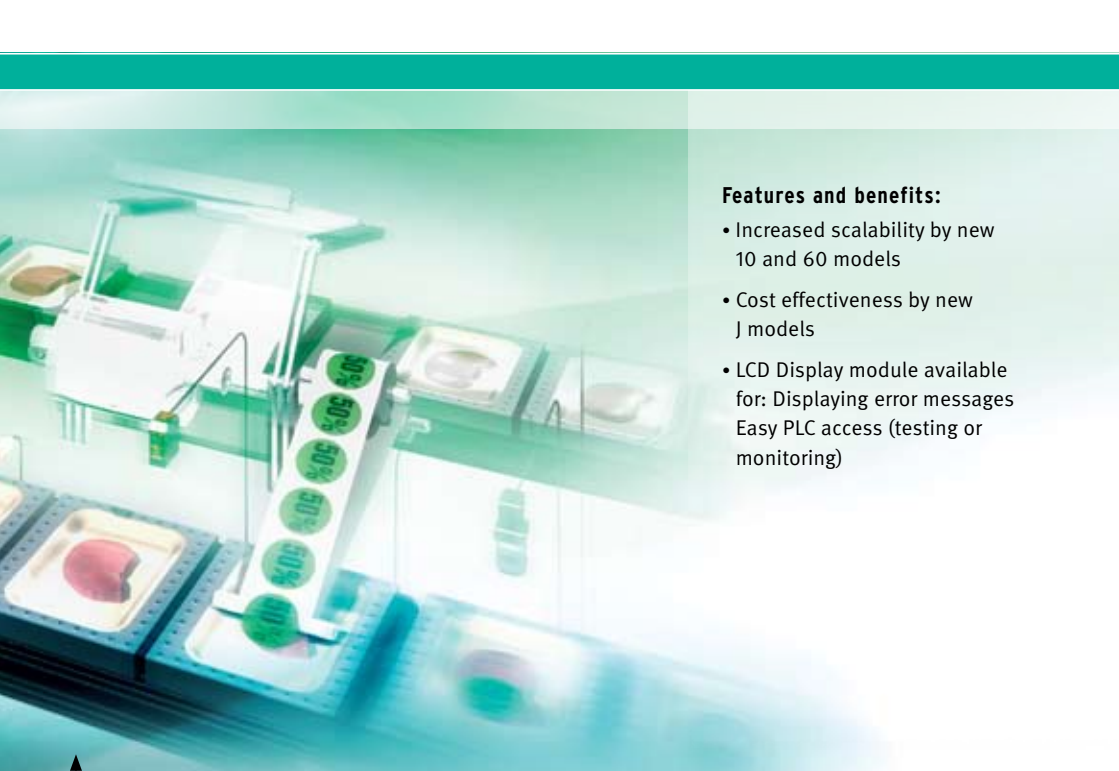
In addition to current CP1L CPUs with 14, 20, 30 and 40 I/O, Omron now offers CPUs with 10 and 60 I/O built in. Available with an AC or DC supply and with relay or transistor outputs, these new CPUs give even greater flexibility to create precisely the application that fits your requirement. The new CP1L-J CPUs offer a cost effective solution and can be expanded up to 60 I/O, just like the CP1L-L, but have limited capacity and functionality.

LCD option board - powerful display and setting functions

The LCD option board (see picture) is an easy to use monitoring and setting plug-in module that offers powerful display and setting functions, and can be used with CP1L and CP1H CPUs. In the monitoring mode it can display PLC data, error messages, or user-specified messages.

In set-up mode, the displayed data can also be modified. For errors and alarms the backlight of the LCD display can be changed from green to red, or even set to blink.





Features and benefits:

- Increased scalability by new 10 and 60 models
- Cost effectiveness by new J models
- LCD Display module available for: Displaying error messages
Easy PLC access (testing or monitoring)



GRT1-CRT SmartSlice CompoNet communication unit

Features and benefits:

- Plug-and-work installation
- Cost-efficient network cabling
- Supports all SmartSlice units



SmartSlice on CompoNet

Not only is the choice of SmartSlice I/O units expanding, but also the range of networks supported by SmartSlice is growing steadily. Following the introduction of DeviceNet, PROFIBUS-DP and PROFINET-IO (see page 11) for general-purpose field networking, and the MECHATROLINK-II unit that links SmartSlice to the Trajexia motion controller, we now introduce SmartSlice on CompoNet.

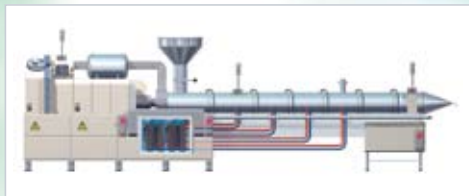
CompoNet was developed for efficient communication with a large numbers of small nodes on the simplest possible cable. Its plug-and-work configuration and free-topology cabling

reduce installation costs, yet it is also capable of sub-millisecond cycle times and message communication with intelligent field devices.

With the GRT1-CRT you can now use all the intelligent SmartSlice I/O units on this simple but versatile network. All features of SmartSlice, like hot-swapping with automatic parameter backup and restore, maintenance data collection and data pre-processing, are supported. You can decide to simply click units together and let the auto-configuration function do its work, or you can use CX-One, which provides the configuration tools to set up the communication and access all unit parameters.



EJ1N-HFUB-DRT CelciuX° DeviceNet communications unit



Extruder Multi-loop Temperature Control

Use the reliable temperature control performance of CelciuX° and connect to the Master of the machine using DeviceNet or any other available connectivity option.

Features and benefits:

- Allows connection of CelciuX° to DeviceNet
- Improved maintenance as TC unit parameters can be backed up and restored with DIP switch
- Easy setting up as I/O can be assigned without the need for configuration software
- Settings also possible using Omron DeviceNet Configurator (CX-Integrator)
- Compatible with third-party DeviceNet configurators using the full EDS file

Gateway between CelciuX° DeviceNet

This unit enables connection of CelciuX° TC2/TC4 temperature control modules to DeviceNet networks. With the standard parameters of the temperature control loops allocated in the DeviceNet master, it is possible to read and write data and operate the control units without any communications protocol programming.

A new function enables parameter templates to be created and selected to display the parameters of any desired loop, saving memory allocation space. All the parameters of connected TC-units can be uploaded or downloaded in one operation, using a DIP switch. In the unlikely event of TC replacement, configuration can be easily recalled without the need for PC software tools.



NS HMI series web viewer

Features and benefits:

- See remotely what the operator sees locally
- Connect to any NS HMI over the internet
- Read and download files from NS CF card



Remote machine servicing using NS HMI

Omron has extended the functionality of the successful HMI series with a web interface built into the HMI terminal. The web-interface function allows you to see the local NS HMI screen, which is also seen by the operator, remotely in any standard web browser without the need to install software on your PC. This makes it very easy to see what is happening at the site where the machine is located. You can see the alarms and actual values and even operate the HMI from your remote location.

The web interface can run in a monitor mode, which allows you to only monitor certain screens,

or it can run in the operation mode so that you can operate the HMI terminal as if you were located at the machine. You can also show all the files stored on the local CF card, e.g. log files created by the NS data logger, and open or download these files from your remote location.

Omron makes troubleshooting and maintenance of your machines 'one click away' with the new web interface of the NS HMI series.

Note: Web-Interface function will be delivered with CX-One v3.1



PROFINET-IO**Features and benefits:**

- Open, Ethernet-based field networking
- Open software tools
- Redundant ring support



Omron and PROFINET – future proof technology without extra complexity

Omron's first PROFINET-IO products available soon

Omron has taken the first step towards Ethernet-based field networking based on open standards and offering interoperability with products from leading European vendors.

The CJ1 IO-Controller and SmartSlice IO-Device offer high-speed data exchange and standardised message communication, while keeping the configuration as straightforward as conventional field networks. If you are using CX-One, you already own the software tools to set up a PROFINET network. The open FDT technology of CX-Configurator FDT supports our PROFINET DTMs, as well as conventional GSDML files for third-party products.

Our devices also support Omron's existing FINS communication, which will allow you to use NS-series HMIs, or PC-based visualisation software, to connect to your PLCs without additional cabling.

In a line architecture, the SmartSlice unit's built-in Ethernet switch directly interconnects with the I/O stations, eliminating the need for external industrial-grade switches. SmartSlice stations can also be integrated in a ring network so that a single cable failure will not affect the network operation.



CX-One v3.0 - did you know?



Features and benefits:

- Integrated simulation
- Program comparison



Features that save time, reduce mistakes and integrate machines

Integrated simulation

Omron's integrated simulation environment helps reduce the total lead-time for design, development, and startup of equipment and devices. One click is all it takes to simulate the interaction between your PLC and HMI. Using the advanced PLC Error generator you can also easily test all your troubleshooting SAPs (Smart Active Parts) in your HMI application.

Program comparison

Adding to CX-Programmer's existing easy to use comparison features, v3.0 adds the ability to compare ST and SFC programs at task level or in function blocks. Detailed online comparison with the PLC, or comparison of two CX-Programmer project files is easily achieved.



Sequential Function Chart

SFC (Sequential Function Charts) enables program flow to be understood at a glance, as well as helping to achieve a structured program, easy monitoring and debugging.



Enhanced program comparison enables detailed comparison of function blocks and structured text, while support for program conversion from C500/C120/C_P enables easy handling of equipment changes.



**Features and benefits:**

- Software protection without USB dongle
- Better support for CX-Supervisor v1.3

New features with free upgrade

CX-Supervisor v2.1 is a free maintenance upgrade for registered v2.0 customers. This release now officially supports Windows VISTA*. The following new features have been added to the product:

- **SoftTOK** is a new form of software protection for use in hazardous areas that require an intrinsically safe environment. SoftTOK enables you to move the token from a USB dongle and install as a software token. This enables CX-Supervisor to run without the USB dongle in the PC.
- **Set Target v1.3** for our customers who would like to use the new features of v2.0 development environment (docking windows, project analysis, etc.) but have to support existing installations of CX-Supervisor v1.3 Runtime. We have now added a feature to set the Target as v1.3. This makes CX-Supervisor v2.0 Developer produce Runtime projects (.sr2) that can be run on v1.3.

*Supported VISTA Editions: Ultimate and Business



New Communications Option boards



V1000: Open &...

With the transparency required for current industrial controllers, V1000 requires one software, one connection and one-minute to set up.

SI-P3/V : V1000 PROFIBUS-DPV1

- Smart Platform integration
- Nodes numbers set-up by PROFIBUS-DP
- Automatic baudrate detection
- Messaging support
- Flexible I/O map
- DB9 Connector

SI-S3/V : V1000 CANopen

- Smart Platform integration
- DSP301 Communication profile
- DSP402 Drive Profile
- Inverter parameters access
- I/O data access
- Request/Response parameter update time < 1ms
- Pluggable standard connectors

SI-N3 : V1000 DeviceNet

- Smart Platform integration
- Nodes numbers set-up by DeviceNet
- Automatic baudrate connection
- Messaging support
- Pluggable standard connectors

New V1000 Solutions



...Flexible!

...to follow market and customers needs. V1000 has been designed with the flexibility to allow product customization of both hardware and software, in line with market requirements and customer needs.

V1000 Built-in filter

A built-in EMC filter will save you the task of having special precautions for EMC shielding during installation. The optional, factory installed filter will not only save on installation costs, it also saves on external parts and simplifies logistics.

V1000 IP66

This High IP protected version of the V1000 enables the inverter to be installed close to the drive, even where there is dust or high-pressure water present, without the need for additional protection. The digital operator is on the front cover plate, to enable easy set-up and monitoring. The IP66 unit has a built-in EMC Class C1 filter.

24 V DC Power supply option

This option ensures the uninterrupted power supply that is critical for many applications. It cuts in if there is a power failure, to keep the V1000 working and to ensure that data and communications continue to flow.



ATEX servo motors for Sigma II



Features and benefits:

- Complies ATEX directive 94/9/EC
- Compact design and robust construction
- Built-in power and encoder cables from 3 m to 50 m
- Output range from 500 W to 3 kW
- Built-in, high-resolution serial encoder

A new flameproof servo motor

The new SGMZH line of servo motors is specifically designed for use in hazardous areas, i.e., locations where the potential for fire or explosion exists due to gases, dust, or easily ignitable fibers

in the atmosphere. The explosion-proof series complies with the European directive 94/9/EG for equipment intended for use in potentially explosive atmospheres.

Models are available for use in gaseous atmospheres (II2G Exd II BT4, Tamb 0 - 40 °C) and dusty atmospheres (II2D ExDA21, IP64, T 120 °C).

CanOpen Xtradrive

XtraDrive expands its communications capabilities

CANopen is a leading serial bus system for embedded control development used in a very broad range of application fields. XDA-CAN helps OEMs to simplify machine wiring and assembly and offers an easy integration with a very popular industrial communication system.

All-in-one servo drive and motion controller integrated

XtraDrive with XDA-CAN option board is a compact and cost effective solution for applications demanding high performance, accuracy and network connectivity.



Features and benefits:

- CANopen DS-301 specification
- Drive profiles according to DSP-402 V2.0
- Rotary switches for setting node ID – up to 127 nodes
- Communication rate of up to 1 Mbps
- Interoperability of different devices
- Port galvanic isolation to provide efficient noise immunity
- Supports all XtraDrive models



**Features and benefits:**

- True colour system:
16 million colours
- High resolution cameras:
2 million pixels
- 2D and 3D inspections
- Touch-screen for easy operation
- Industrial-PC platform
- Real colour increases the total stability of the inspection
- Simple set-up and maintenance

Performance in touch with simplicity

Omron's Xpectia is defining a new class of vision systems: real colour sensing, high resolution, 3D functionality and Intuitive User guidance combined, provides you pure simplicity, no matter how complex the inspection.

Like the human eye, Xpectia can identify any object with any colour mix, at any distance and any size. It features an easy-to-use touchscreen and "Auto" functions, making vision applications simple and straightforward.

Xpectia is available with a range of controllers with and without the touchscreen, and supports up to four cameras. By combining the benefits of compact system with the power and flexibility of an industrial PC platform, it is, quite simply, the best of both worlds.

**Standard colour system:**

Low contrast -> internal processing using a filtered monochrome image

**Xpectia:**

High contrast -> stable inspections using real-colour sensing



ECM Search



Defect



Fine matching

Scan edge
positionScan edge
width

Edge position



Edge pitch



Set unit figure

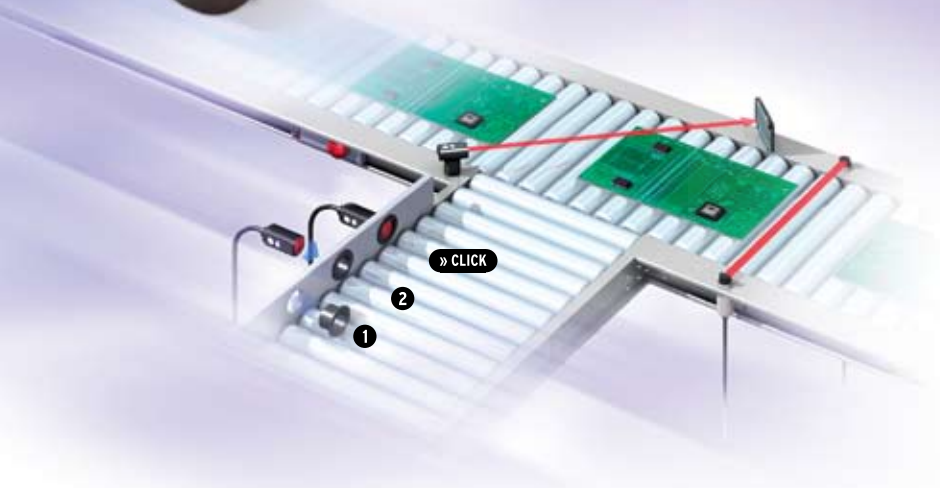
E3FZ photoelectric sensor

FAST >>>>
INSTALLATION



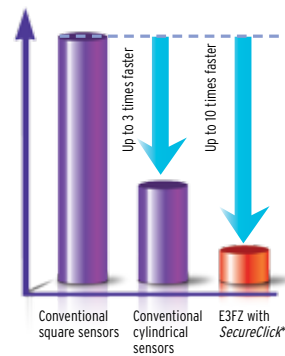
Features and benefits:

- Short M18 sized housing for reduced mounting space
- High power LED for enhanced sensing distance
- *SecureClick* snap mounting for fast installation



Object detection - up to 10 times faster installation

Equipped with the modular sensing technology of Omron's most popular E3Z photoelectric sensor, the E3FZ combines reliable object detection in a compact housing with fast and simple mounting. The *SecureClick* snap mounting technology provides fast installation in two easy steps and up to 10 times faster than conventional square sensors.



**SecureClick* has been tested and found to be severe-vibration proof.



EE-SX67 photo-micro sensors

FAST >>>>
INSTALLATION



Position detection of machine parts in an easy-to-mount housing

The small-sized EE-SX67 photo-micro sensors provide fast and reliable position detection of moving machine parts in an easy-to-install, fork-shaped housing. The family has been extended with new housing shapes and 10 cm cable connectors for simplified mounting in different positions.

Features and benefits:

- Wide range of fork-shaped housings for easy installation
- 10 cm cable-connector models for simplified installation and connection

E32-[J]11N fiber-optic sensors

FAST >>>>
INSTALLATION



Easy mounting and cable breakage prevention



Features and benefits:

- 90° cable exit and high-flex fiber to prevent cable breakage prevention
- Hexagonal back for simplified one-nut mounting
- M3 through-beam and M6 diffuse-reflective models
- M3 and M6 coaxial diffuse reflective models for high-precision detection

Accurate sensing in small spaces in an easy-mounting housing

E32 fiber-optic sensors provide reliable and accurate object detection in the smallest spaces and with the highest precision. The new fibers with hexagonal back further simplify the installation and reduce the probability of cable breakage.



V680 RFID series



Features and benefits:

- Controller range for single and double antenna applications
- 13,56 MHz ISO 18000-3 (ISO 15693) compliant
- Innovative FRAM technology operates without battery
- Antenna range for multiple applications and shapes
- Up to 27,000 bps data transmission speed
- Serial and DeviceNet communication
- PLC unit for CJ1 or CS1 PLC series
- Easy set up and maintenance functionality built in

Identification made for flexible integration

Traceability and reliable identification combined with a smart concept of RFID controller and antennas result in a high degree of control system integration flexibility. The V680 series offers a wide choice of controllers, communication interfaces and antennas, as well as RFID controllers for direct integration into the CJ1 or CS PLC systems.

Compliance is no longer an issue using the globally ISO harmonized 13,56MHz frequency. The V680 RFID system is capable of reading and writing either V680 system tags or third-party

ISO 18000-3 (ISO 15693) tags. Driven by the demand to improve production throughput, a data transmission speed of up to 27,000 bps can be realized.

Using newest FRAM technology in the V680 tags, it is no longer necessary to have battery powered tags in the process. The highest system reliability and up to 10 billion read/write cycles reduce maintenance.

Advanced diagnosis tools in the controller are designed for easy set up and diagnosis of the system. A wide variety of tags for several applications and environments ensures that traceability is integrated into your machine both simply and flexibly.

H7BX multi-function pre-set counter

A large display that is easy to view

The new H7BX succeeds the popular H7BR pre-set counter. Its DIN 72 x 72 mm housing has a 6-digit double display measuring 13.5 mm in height with 9 mm high digits for the set value. The negative, transmissive LCD provides excellent reading under all conditions. As with all our display products, we now also offer two colours (red/green) for the PV in the H7BX. The setting of the pre-set value is very easy, as each digit has a key. It is not only a pre-set counter, but can also be used for counting totals, as a batch counter, a dual counter and tachometer.



Features and benefits:

- Performs all basic counter functions and more
- Available for 1-stage and 2-stage
- Relay and transistor output as standard
- Accepts a wide range of inputs: contact input, NPN/PNP inputs and 2-wire DC sensors
- Front protection to IP54
- Complies with UL, CSA and CE requirements



S8VS industrial compact power supplies

Range extended with 20 A / 24 V DC model

The S8VS range of single-phase, compact power supplies is extended with the S8VS-48024 - a 20 A / 24 V DC version measuring H 115 x W 150 x D 127.2 mm. The supply voltage is 100 to 240 V AC 50/60 Hz. Load connection is through 2 terminals with both 3 connections for +V and -V. Efficiency is 83 % min. and power factor 0.95 min. Output ripple is within 2 % max. (p-p) and the output voltage is adjustable from -10 % to +15 % at the front. Peak output current 30 A for 2 seconds. It also has over-voltage protection.



Features and benefits:

- Compact with 20 A / 24 V DC output power
- Peak output current 30 A
- Output indicator LED (green)
- DIN rail mounting
- RoHS compliant
- Range also includes 15 W / 0.65 A, 30 W / 1.3 A, 60 W / 2.5 A, 120 W / 5 A and 240 W / 10 A versions
- Complies with UL, CSA and CE requirements

MS48/MS28 Safety sensor range



Features and benefits:

- Easy to design-in, install and set-up
- Safety type 2 respectively type 4 according EN 61496
- 14 mm and 30 mm resolution for finger and hand protection
- Maximum operating ranges of 7 m and 20 m
- Protective height up to 2120 mm in 40 mm steps
- Integrated intelligent alignment aid
- Basic and advanced functionality version available
- Cascadeability of up to 4 systems, mixed resolution possibility

The key to simplicity in safety - made in Germany

Simple to select, order, install, set-up and maintain, the MS28/48 range supports the “ALL IN ONE” machine-design process.

Conventional safety light curtains cover only particular segments of applications, and so require different accessories, installation and maintenance tools. Given the need to reduce taken to design and produce machines, the use of safety sensors became an obstacle in improving machinery.

The MS28/48 range is designed to address these issues. Whether the requirement is for Type 2 or Type 4 safety, finger or hand protection, basic or advanced functionality, the cables, accessories, set-up and maintenance are exactly the same.

Investments in engineering and training can be reused on the next machine project, regardless of the specific safety requirements.

There is no need for a programming tool or console for setup, maintenance and alignment. Easily accessible DIP switches and the innovative integrated alignment aid are enough for fast set up and maintenance of the MS/safety sensors. High durability and reliability are provided by solid mechanical parts and the latest safety circuit design inside.

Offering the highest flexibility in both availability and variety, the MS28/48 is produced at OMRON Manufacturing of Germany, near Stuttgart.

NE1A-L stand-alone safety controller



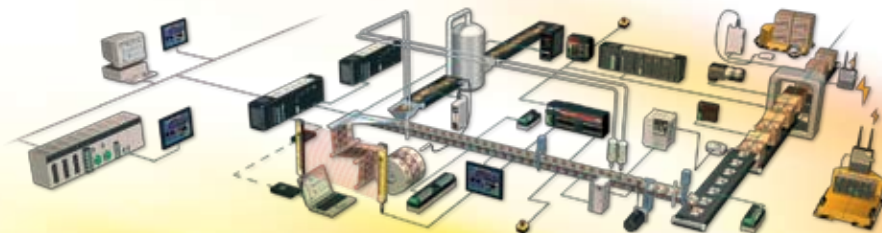
Features and benefits:

- Predefined and certified function blocks for easy programming
- System status on DeviceNet for easy troubleshooting and predictive maintenance
- Removable spring clamp terminals for fast and easy installation
- Models with 16 and 40 inputs available

Scalability and transparency in stand-alone safety control

Based on the DeviceNet safety controller family, the new NE1A-SCPU-L stand-alone controllers cover small and mid-sized machine applications. Having 16 or 40 local inputs, the NE1A hosts the safety application program in which programming can be easily set up by using the pre-defined and certified function blocks.

All system and maintenance information is available in the PLC system via the integrated DeviceNet slave functionality to ensure minimum machine downtime.



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- 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