OMRON

MECHATRONIC SOLUTIONS

Barcode reading at its best

Omron Fixed Mount Code Readers

INTEGRATED | INTELLIGENT | INTERACTIVE

OMRON

Your **trusted** partner in traceability

The history of Omron Microscan

As the inventor of the first laser diode barcode scanner and the DataMatrix barcode symbology, Microscan Systems became part of Omron Automation in 2017. With this acquisition, Omron now holds one of the world's most extensive patent portfolios for barcode reading technology.

A new line of code readers was launched in 2016 to cover a variety of 1D and 2D code reading needs with an extremely small footprint. Now updated with new features and additional models that further address pressing traceability requirements, the latest generation of code readers continues to provide incredible value and performance in almost any industrial application.

Designed to perform

Take code reading to the next level

Addressing the challenge of reliably reading a variety of barcodes on different surfaces at high speeds in difficult factory environments, Omron barcode readers use powerful X-Mode algorithms to render damaged and incomplete symbols readable. For reliable decoding at the speed you need, they come standard with speeds up to 60 Frames Per Second.

Design your next-level solution for traceability with a technology that combines advanced optics with monochrome and color image sensors of up to a 5MP resolution and a variety of fixed-focus and autofocus lens options.

A wide range of hardware options to meet almost any industrial need, solving the toughest barcode reading challenges.

Automotive

- Powertrain components
- Safety systems
- Steering and braking
- Labeling
- Electronic assemblies

Electronics

- Component and PCB traceability
- Sub-assembly tracking
- Automated line changeover
- Quality assurance
- WIP tracking

Life Sciences

- Sample tracking
- Medical device tracking
- Test level traceability
- Vial reading and verification

Packaging

- Matching inserts to packaging
- Item traceability
- Quality assurance
- Anti-counterfeiting measures
- Package sortation
- Carton coding
- Print and apply labeling

Meeting traceability objectives for Industry 4.0

An integral component of a robust traceability system that covers a

Life Sciences

- Regulatory compliance via barcoding on labels and direct part marked products
- Anti-counterfeiting via serialization
- Automation and accuracy assurance of laboratory samples

Automotive

- Tool and process quality control tracking
- Matching paired components
- Unit level tracking of components, quality issue containment and rapid response
- Anti-counterfeiting via serialization and barcode-embedded information

wide range of industry-specific objectives

Consumer Packaging

- One-step-forward/one-step-backward traceability regulations
- Raw material inventory optimization
- OEE measurement and process optimization via lot and unit-level quality tracking
- Reject/recall containment and response efficiency

Electronics

- Analyzing traceability data to determine which machines and processes require optimization
- Scanning barcodes to follow production "recipes" and enable lights-out manufacturing
- Using traceability to streamline testing processes

Intuitive and simple to use

Setup your application and start reading codes quickly

OMRON
WEBLINK

Connects via LAN or WiFi

Omron code readers lead the industry for effortless setup and installation. Simply connect the code reader to power and to your PC, laptop, or tablet via USB, Ethernet, or serially, and configure your application.

Providing the most intuitive controls of any barcode reading setup tool, WebLink ushers in the age of usability to this essential task.

WebLink Browser Based Interface

- World's first web-based barcode reader interface
- No software to download or install
- One-click symbol training and optimization tools
- Automatic image storage from camera to external server

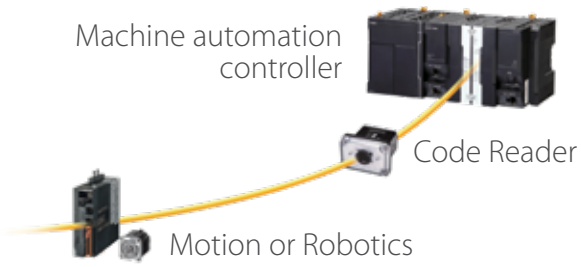
Integrates easily with a compact footprint

Supporting a variety of industrial communication protocols and on-board I/O, Omron code readers allow you to securely and efficiently integrate your data with factory automation applications. The platform interfaces easily with Omron's control hardware and also integrates in devices supporting EtherNet TCP/IP, EtherNet/IP and PROFINET.

Designed specifically for integration into the tightest of spaces, these code readers are the most compact, lightweight and durable devices for tough industrial environments. In fact, the V430 is the smallest IP67-rated barcode reader available on the market today.

High Speed Data

High-speed data transmission via EtherNet/IP or PROFINET enables smooth and flexible communication.



Integrated

Omron's commitment to easy integration is evident with the code reader's seamless interface with our control hardware and third-party devices supporting EtherNet TCP/IP, EtherNet/IP and PROFINET.

Intelligent

Powerful decoding algorithms, thorough barcode quality monitoring, advanced password management and other key features make this smart solution stand out in today's automation technologies.

Interactive

Using the highly intuitive browser based WebLink interface you are able to quickly configure and monitor your Code Reader, instantly seeing the result of configuration settings.

Key Technology Features

- X-mode decoding algorithms
- High-speed liquid lens autofocus
- Daisy chain networking
- Onboard configuration database
- Barcode quality monitoring
- Advanced password management
- Rapid Capture mode
- Enhanced integrated lighting
- Expandable platform with Machine Vision software upgrade option

Advanced Barcode Reading Technologies

X-mode decoding algorithms

When there's no way to predict barcode quality or control marking variations, X-Mode's aggressive symbol location, analysis, and reconstruction algorithms minimize no-reads by decoding reliably in some of the most challenging circumstances.

Daisy chain networking

Users can combine up to 8 readers with an EtherNet switch for 360-degree product inspection and code reading when code location is unpredictable or when a combined output string from multiple codes is needed.

Barcode Quality Monitoring

Using ISO standard grading methods, this feature provides in-line monitoring of print or mark quality during production along with the ability to trigger an output should quality fall below a user-defined threshold.

Rapid Capture Mode

This feature ensures that the reader can capture up to 32 images with a single trigger input in high-speed applications with user configurable intervals as small as 32 microseconds. It can be combined with Power Strobe operation.

High-speed liquid lens autofocus

MicroHAWKs with liquid lenses can automatically adjust focus at short and long ranges to read high-density, 3.3-mil Data Matrix symbols on complex PCBs, large linear barcodes on packages over a distance ranging from 50mm to 1200mm.

Onboard configuration database

The platform supports high-mix manufacturing by cycling through multiple configuration settings to apply the best options based on barcode type, size, label media and location to maximize read rate and line speed.

Advanced Password Management

With three user access levels, Weblink provides control over editing settings to qualified personnel only while supporting requirements in validated and other high-security applications.

Enhanced integrated lighting

For low-contrast codes, specular surfaces, DPMs and other challenging applications, most models offer additional integrated lighting options and polarizing filter accessories.

Fixed Mount Code Readers

Product Comparison Table

Feature	V320-F	V330-F
Barcode Symbol Types	1D, 2D, Direct Part Marks	1D, 2D, Direct Part Marks
Sensor Resolutions Available	752 (H) x 480 (0.3MP) (V) Mono 1280 (H) x 960 (1.2MP) (V) Mono 2592 (H) x 1944 (V) (5.0MP) Color	752 (H) x 480 (0.3MP) (V) Mono 1280 (H) x 960 (1.2MP) (V) Mono 2592 (H) x 1944 (V) (5.0MP) Color
Illumination Standard	8 LED White/Red	8 LED White/Red
Illumination Optional	Standard Lighting Only	Standard Lighting Only
Lens Option	Wide, Medium, Narrow	Wide, Medium, Narrow
Lens Focal Length Available	Fixed Focus; 50, 64, 102, 190, 300 mm	Fixed Focus; 50, 64, 102, 190, 300 mm
Maximum Capture Speed	Up to 52 frames per second	Up to 60 frames per second
I/O	N/A	1 input/1 output
Communication	RS-232, USB 2.0 Full-Speed (Ethernet over USB and HID)	Ethernet TCP/IP, EtherNet/IP, PROFINET
Power Input Required	5VDC	IEEE 802.3af PoE-compliant 36 to 57 V, Class 0
Environmental Degree of Protection	IP40	IP40
Housing Dimensions	24.1mm H x 51.5mm W x 38.8mm D	24.1mm H x 40.0mm W x 63.0mm D
Read Range	see product datasheet	see product datasheet

V420-F	V430-F	V440-F
1D, 2D, Direct Part Marks	1D, 2D, Direct Part Marks	1D, 2D, Direct Part Marks
752 (H) x 480 (V) (0.3MP) Mono 1280 (H) x 960 (V) (1.2MP) Mono 2592 (H) x 1944 (V) (5.0MP) Color	752 (H) x 480 (V) (0.3MP) Mono 1280 (H) x 960 (V) (1.2MP) Mono 2592 (H) x 1944 (V) (5.0MP) Color	2464(H) x 2056(V) (5.0MP) Mono
8 LED White/Red	8 LED White/Red	External Lighting Required
8 LED, White, Red, Blue, IR	8 LED or 24 LED (Ring Light), White, Red, Blue, IR	Direct connection for NER SMART SERIES Ring Lights
Wide, Medium, Narrow, Long Range	Wide, Medium, Narrow, Long Range	C-Mount Lens Compatible
1200mm Autofocus, 50-300mm Autofocus, 75- Fixed Focus	50-300mm Autofocus, 75-1200mm Autofocus, Fixed Focus	Lens Dependant
Up to 60 frames per second	Up to 60 frames per second	35 frames per second for full 5.0MP
3 inputs/3 outputs	3 inputs/3 outputs	3 inputs/3 outputs
RS-232C, USB 2.0 High Speed, Ethernet over USB/HID	RS-232C, Ethernet TCP/IP, EtherNet/IP, PROFINET	RS-232C, Ethernet TCP/IP, EtherNet/IP, PROFINET
5VDC	5 to 30 VDC	24VDC or 48vdc Power over Ethernet
IP54	IP65/67	IP40
25.4mm H x 44.5mm W x 38.1mm D	25.4mm H x 44.5mm W x 44.5 mm D	30mm H x 40mm W x 61mm D
see product datasheet	see product datasheet	see product datasheet

Fixed Mount Code Reader features overview

	V320-F	V330-F	V420-F	V430-F	V440-F
1D Omni-directional Barcodes	•	•	•	•	•
1D/2D Barcodes	•	•	•	•	•
Damaged Barcodes	•	•	•	•	•
Direct Part Mark (DPM)	•	•	•	•	•
Enclosure	IP40	IP40	IP54	IP65/67	IP40
EtherNet TCP/IP		•		•	•
EtherNet/IP		•		•	•
PROFINET I/O®		•		•	•
EtherNet over USB	•		•		
Serial (RS-232)	•		•	•	•
USB 2.0 / HID	•		•		
Power over Ethernet (PoE)		•		•[1]	•[2]
2x Illumination Option			•	•	
4x Ring Light Option				•	
Liquid Lens Autofocus			•	•	
High-Density	•	•	•	•	
Color Sensor	•	•	•	•	
Barcode Quality Check	•	•	•	•	•
WebLink User Interface	•	•	•	•	•

1. 24V Passive Power over Ethernet, Type B **2.** 48V Power over Ethernet, for use with standard PoE Switches or Injectors

V440-F

5-Megapixel C-Mount Code Reader

The new V440-F Series offers advanced decode algorithms and improved data output configuration especially for Matrix reading. The V440-F expands on the strength of V430 platform with high resolution sensor and C-mount lens for wider configuration of working distance and Field of View.

5 Megapixel with C mount lens powerful for your small code reading

Not many compact code readers offer larger than 3MP in the lineup. This results in using complex vision system with higher resolution camera to read small codes. V440 offers better imaging with it's 5MP resolution and optics that include Macro or Telecentric lensing to read small codes.

Omron Vision Solutions

Your trusted partner in vision

HAWK MV-4000 high-power smart camera

HAWK MV-4000 is a high-performance smart camera that boasts four times the processing power and six times the frame rate of the previous generation, making it a powerful option for all automation needs.

FHV7 high-performance smart camera

The FHV7 series Smart Camera provides a wide variety of sensors, optics, and lighting with high-processing speeds and a compact footprint while using the powerful FH series image inspection software.

FH multi-camera vision system

Omron's FH series Vision System is a compact yet powerful solution for advanced defect detection featuring top-of-the-line sensing and processing capabilities to maximize production line performance and flexibility.

Omron Sentech industrial machine vision cameras

The new Omron Sentech area scan and line scan industrial cameras for machine vision, medical, and laboratory applications include models with Camera Link, CoaXPress, GigE, USB 2.0, USB 3.0, analog, UVC, MIPI and HD output. Compatible with Omron Autovision software.

FHV7 series Smart Camera provides a wide variety of sensors, optics, and lighting with high-processing speeds and a compact footprint while using the powerful FH series image inspection software

PC-based FH with top-of-the-line sensing, processing capabilities, and machine vision software designed to maximize production line performance and flexibility by exceeding the sensitivity of human vision

OMRON AUTOMATION AMERICAS HEADQUARTERS • Chicago, IL USA • 847.843.7900 • 800.556.6766 • automation.omron.com

OMRON CANADA, INC. • HEAD OFFICE
Toronto, ON, Canada • 416.286.6465 • 866.986.6766 • automation.omron.com

OMRON ELECTRONICS DE MEXICO • HEAD OFFICE
Ciudad de México • 52.55.5901.4300 • 01.800.386.6766 • mela@omron.com

OMRON ELECTRONICS DE MEXICO • SALES OFFICE
San Pedro Garza García, N.L. • 81.12.53.7392 • 01.800.386.6766 • mela@omron.com

OMRON ELECTRONICS DE MEXICO • SALES OFFICE
Eugenio Garza Sada, León, Gto • 01.800.386.6766 • mela@omron.com

OMRON ELETRÔNICA DO BRASIL LTDA • HEAD OFFICE
São Paulo, SP, Brasil • 55 11 5171-8920 • automation.omron.com

OMRON ARGENTINA • SALES OFFICE
Buenos Aires, Argentina • +54.11.4521.8630 • +54.11.4523.8483
mela@omron.com

OTHER OMRON LATIN AMERICA SALES
+54.11.4521.8630 • +54.11.4523.8483 • mela@omron.com

Note: Specifications are subject to change.

© 2022 Omron. All Rights Reserved.