The Ultra-small Multi-code Reader
That Can Handle Speed

• Improves Machine Takt Time with the Fastest Reading in the Class:
  Reads Moving Objects at Up to 500 m/min*
• Distance Variations
• Stable Reading of Imperfect Codes
*Performance may depend on the code that is read and the printing conditions.

Refer to Safety Precautions on page 4.

Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi Code Reader</td>
<td>V400-R2CF65</td>
</tr>
<tr>
<td>Working distance 65mm</td>
<td></td>
</tr>
<tr>
<td>Working distance 125mm</td>
<td>V400-R2CF125</td>
</tr>
<tr>
<td>OMRON PLC connecting cable</td>
<td>V509-W011</td>
</tr>
<tr>
<td>D-sub 9-pin, 0.8M</td>
<td></td>
</tr>
<tr>
<td>D-sub 9-pin, 5M</td>
<td>V509-W016</td>
</tr>
<tr>
<td>PC/AT Connecting cable</td>
<td>V509-W011D</td>
</tr>
<tr>
<td>D-sub 9-pin, 0.8M</td>
<td></td>
</tr>
<tr>
<td>D-sub 9-pin, 5M</td>
<td>V509-W016D</td>
</tr>
</tbody>
</table>
## Ratings and Performance

### Model | V400-R2CF65 | V400-R2CF125
---|---|---
### Direction of view
- Front view

### Applicable codes
- **Bar code**: WPC(JAN/EAN/UPC), Codabar(NW-7), ITF, Industrial 2 of 5, Code39, Code93, Code128, GS1-128(EAN-128), GS1-Databar(RSS-14), GS1-Databar Limited(RSS Limited), GS1-Databar Expanded(RSS Expanded), GS1-Databar Composite(RSS Composite)
- **2D code**: QR code, DataMatrix(ECC200), MicroQR code, PDF417, MicroPDF417, AztecCode, MaxiCode, Codablock-F

### Reading performance (*)
- **Number of reading digits**: No upper limit (depends on bar width and reading distance)
- **Light source**: Two red LEDs (wave length: 617 nm)
- **Aiming light**: One green LED (wave length: 528 nm)
- **Minimum resolution**: Bar code: 0.076 mm, 2D code: 0.169 mm
- **Image capture device**: Monochrome CMOS
- **Effective number of pixels**: 754 × 480 pixels
- **Working distance (WD)**: 65mm, 125mm
- **Field of view**: Approximately 48 × 31(for WD = 65 mm), Approximately 93 × 59(for WD = 125 mm)
- **Pitch angle (α)**: ±50º
- **Skew angle (β)**: ±50º
- **Tilt angle (γ)**: ±180º
- **Reading of bar codes on curved surfaces (R)**: R ≥ 20mm (UPC 12 line)

### Interface
- **Communication specification**: RS-232C
- **OK/NG outputs**: NPN open collector output (cable work required)

### Function setting method
- Menu sheet reading method or host command method

### Functional specifications
- **Reading trigger**: External trigger (Transistor input), Trigger by command (RS-232C)
- **OK/NG signals**: OK signal is turned on to indicate a successful read, NG signal is turned on to indicate a successful read of a non-registered label
- **Indication LED**: OK LED (green) illuminates to indicate a successful read, buzzer
- **Buzzer**: Notifies a successful reading with a buzzer sound (Muting available)

### Power supply specification
- **Power voltage**: 4.5 to 5.5 VDC
- **Consumption current**: During operation: 265 mA or less; during standby: 70 mA or less

### Environmental specifications
- **Ambient temperature range**: At operation: 0 to + 45ºC; At storage: -10 to + 60ºC
- **Ambient humidity range**: At operation and storage: 20 to 85% RH (with no icing or condensation)
- **Ambient atmosphere**: No corrosive gases
- **Ambient light**: Fluorescent lamp: 10,000lx or less, Sunlight: 100,000lx or less
- **Vibration resistance**: 10 to 150 Hz, half amplitude 0.35 mm, 3 directions (X/Y/Z), 8 minutes each 10 times

### Degree of protection
- **IP54 (IEC60529)**

### Weight
- **Main unit only**: Approximately 90 g
- **Including accessories**: Approximately 200 g (including mounting bracket and screws)
- **Packaged weight**: Approximately 280 g (including packing carton)

### Dimensions
- **Main unit**: Approximately 41(W) × 33(D) × 24(H) mm
- **Packing carton**: Approximately 240(W) × 110(D) × 40(H) mm

### Input/output connector
- Round DIN connector

### Code length
- Approximately 1.5 m

### Minimum bending radius of cord
- Approximately 23 mm

### Accessories
- Operation manual, menu sheet, mounting bracket, M2 × 6 screws (two), M5 ×10 screws (two)

### Material, Color
- **Case**: PC, PET, black
- **Reading window**: PMMA, transparent
- **Cable**: Polyvinyl chloride (PVC), black
- **Mounting bracket**: SUS304, silver

* Unless otherwise specified, the reading performance is defined with angle α = 0º, β = +15º, γ = 0º, R = 无穷, illumination: 100 to 2001x, reading rate: 90% or more.

*QR code is the registered trademark of DENSO WAVE.
V400-R2 Series
Reading range performance (typical example)

Explained with examples of following conditions:
- Contrast: MRD 63% (PCS = 0.9)
- Installation condition:
  Pitch angle $\alpha = 0^\circ$, skew angle $\beta = 15^\circ$
  Tilt angle $\gamma = 0^\circ$, curvature $R = \infty$
- Reading rate: 90% or more in 10 tries

Safety Precautions

**WARNING**
This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.

- For details, including precautions for correct use, refer to the "Multi Code Reader V400-R2 Series User’s Manual" (Cat. No. Z333) and on your OMRON website.

Refer to the Service & Support on your OMRON website for technical descriptions and FAQs on the product.

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**V400-R2CF125**
2D code (typical example)

<table>
<thead>
<tr>
<th>Code types</th>
<th>Resolution</th>
<th>Reading distance</th>
<th>Field-of-view size at reading distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>QR Code</td>
<td>0.212</td>
<td>90 to 115</td>
<td>67×42 to 85×54</td>
</tr>
<tr>
<td>Data Matrix</td>
<td>0.381</td>
<td>55 to 195</td>
<td>41×26 to 144×91</td>
</tr>
<tr>
<td>PDF417</td>
<td>0.169</td>
<td>80 to 140</td>
<td>59×38 to 104×66</td>
</tr>
<tr>
<td>Code128</td>
<td>0.254</td>
<td>60 to 195</td>
<td>44×28 to 144×91</td>
</tr>
</tbody>
</table>

**Bar code (typical example)**

<table>
<thead>
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<th>Resolution</th>
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<tbody>
<tr>
<td>Code39</td>
<td>0.127</td>
<td>65 to 205</td>
<td>48×31 to 152×96</td>
</tr>
<tr>
<td>Code128</td>
<td>0.254</td>
<td>60 to 295</td>
<td>44×28 to 218×138</td>
</tr>
<tr>
<td>UPC</td>
<td>0.33</td>
<td>50 to 220</td>
<td>37×23 to 163×103</td>
</tr>
</tbody>
</table>

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**V400-R2CF65**
2D code (typical example)

<table>
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<tr>
<td>QR Code</td>
<td>0.169</td>
<td>60 to 80</td>
<td>44×28 to 59×38</td>
</tr>
<tr>
<td>Data Matrix</td>
<td>0.381</td>
<td>35 to 115</td>
<td>26×16 to 85×54</td>
</tr>
<tr>
<td>PDF417</td>
<td>0.127</td>
<td>55 to 90</td>
<td>41×26 to 67×42</td>
</tr>
<tr>
<td>Code128</td>
<td>0.254</td>
<td>55 to 115</td>
<td>41×26 to 85×54</td>
</tr>
<tr>
<td>UPC</td>
<td>0.33</td>
<td>50 to 120</td>
<td>33×21 to 89×56</td>
</tr>
</tbody>
</table>

**Bar code (typical example)**

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<tr>
<td>Code39</td>
<td>0.127</td>
<td>55 to 85</td>
<td>41×26 to 63×40</td>
</tr>
<tr>
<td>Code128</td>
<td>0.18</td>
<td>45 to 100</td>
<td>33×21 to 74×47</td>
</tr>
<tr>
<td>UPC</td>
<td>0.33</td>
<td>45 to 120</td>
<td>33×21 to 89×56</td>
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</tbody>
</table>
Dimensions

Multi Code Reader
V400-R2CF65/R2CF125

V400-R2 Series
(Unit: mm)

Dimensions (Unit: mm)

41.1
33
35.1
24
10.65
1.25
22
10.65

16
37
20
13
10.2

2-M2 Depth 3 max

Vinyl insulated round cord 3.8 dia.
10-core Black
Standard length 1.5 m

Connector

Mounting hole dimensions

5.2 dia
2.2 dia
8.9
Terms and Conditions of Sale

1. Offer, Acceptance. These terms and conditions (these "Terms") are deemed part of all quotations, purchase orders, sales orders, contracts, catalogs, manuals, brochures and other documents, whether electronic or in written form, that constitute an agreement between Buyer and Omron relating to the sale of products or services (the "Products") by Omron Electronics LLC and its subsidiary companies ("Omron"). Omron objects to any terms or conditions proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms.

2. Prices; Payment Terms. All prices stated are current, subject to change without notice, and may be increased by Omron in the event of any price increases on any unshipped portions of outstanding orders. Payments for Products are due net 30 days unless otherwise stated in the invoice.

3. Delivery, Cancellation. If any or all of the net amount of invoices sent to Buyer after deducting transportation charges, taxes and duties, and will be allowed only if (i) the invoice is paid according to Omron's payment terms and (ii) Buyer has no past due amounts.

4. Interest. Omron, at its option, may charge Buyer 1-1/2% interest per month or the highest rate allowable under state law, whichever is less, on any balance not paid within the stated terms.

5. Orders. Omron will accept no order less than $200 net billing.

6. Governmental Approvals. Buyer shall be responsible for, and shall bear all costs involved in, obtaining any government approvals required for the importation or sale of the Products.

7. Taxes. All taxes, duties and other governmental charges (other than general property and income taxes), including any interest or penalties thereon, imposed directly or indirectly on Omron or required to be collected directly or indirectly by Omron for the manufacture, production, sale, delivery, importation, exportation, license or use of the Products sold hereunder (including customs duties and sales, excise, use, turnover and license taxes) shall be charged to and remitted by Buyer to Omron.

8. Financial. If the financial position of Buyer at any time becomes unsatisfactory to Omron, Omron reserves the right to stop shipments or require satisfactory security from Buyer. If Buyer fails to make payment within the terms and conditions of these Terms, then any and all amounts due and owing shall become due and payable immediately. In the event of any payment default, in its discretion, Omron may declare the entire amount due and payable, and may, without notice, cancel any and all unshipped portions of outstanding orders. Payments for Products are due net 30 days unless otherwise stated in the invoice.

9. Cancellation, Etc. Orders are subject to rescheduling or cancellation without notice if Buyer becomes insolvent, if Buyer's credit is unsatisfactory to Omron or for any reason other than non-payment of purchased Products.

10. Force Majeure. Omron shall not be liable for any delay or failure in delivery resulting from causes beyond Omron's control, including earthquakes, fires, floods, strikes or other labor disputes, shortage of labor or materials, accidents to machinery, acts of sabotage, riots, delays in transportation or the requirements of any government authority.

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a. Shipments will be by a carrier selected by Omron; Omron will not drop ship products in "break bulk" shipments.

b. Such carrier shall act as the agent of Buyer and delivery to such carrier shall constitute delivery to Buyer.

c. All sales and shipments of Products shall be FOB shipping point (unless otherwise stated in writing by Omron), at which point title and risk of loss shall pass from Omron to Buyer; provided that Omron shall retain a security interest in the Products until the full purchase price is paid;

d. Delivery and shipping dates are estimates only; and

e. Omron will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.

12. Claims. Claims for shortages against Omron must be presented in writing to Omron within five (5) days of delivery by Buyer. Such claims must be accompanied by a photocopy of any transportation bill signed by the carrier noting that the carrier received the Products from Omron in the condition claimed.

13. Wholesaler's and Retailer's Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve (12) months from the date of shipment by Omron or the date of invoice (whichever is later). Omron disclaims all other warranties, express or implied, and limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY, QUALITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT THE PRODUCTS WILL NOT SUIT THE PURPOSE FOR WHICH THEY ARE USED AND THAT THE PRODUCTS WILL NOT SUIT THE REQUIREMENTS OF THEIR INTENDED USE. Omron MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY TYPE FOR CLAIMS OR LIABILITIES BASED ON CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

14. Payment. All amounts payable shall be paid in United States dollars unless otherwise stated in writing by Omron, and will be paid in U.S. currency (check or money order drawn on a U.S. bank) to Omron's address in Schaumburg, Illinois.

15. Indemnities. Buyer shall indemnify and hold harmless Omron, its officers, directors, employees and agents from and against all liabilities, losses, claims, costs, damages or expenses (including attorney's fees and expenses) relating to or arising from any action brought against Omron Companies to the extent based on a claim that any Product made by Buyer specifications infringed intellectual property rights of any third party.

16. Property; Confidentiality. Any intellectual property in the Products is the exclusive property of Omron and shall remain the exclusive property of Omron, either during or after the term of the agreement, unless otherwise expressly agreed in writing by Omron. Buyer shall be solely responsible for determining appropriateness of the Product in combination with Omron's products or systems, or other application or use. Buyer shall be solely responsible for determining proprietary rights by Omron relating to the Products are confidential and proprietary, and Buyer will limit distribution thereof to its trusted employees and strictly prevent any disclosure to any third party.

17. Export Controls. Buyer shall comply with all applicable laws, regulations, licenses relating to the export of products or information; and (iii) sale of products to "forbidden" or other proscribed persons; and (ii) disclosure to non-citizens of United States technology or information.

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