V600 RFID System

Intelligent Flag III

V600-HAM42-DRT
Intelligent Flag Amplifier
for CompoBus/D

Multi-functional amplifier conforming to OMRON's Network CompoBus/D compatible with DeviceNet

System Configuration

Master Unit

CompoBus/D (DeviceNet-compatible)

I/O

V600-HAM42-DRT (Amplifier)

V600-HS (Sensors)

V600-D (Data Carriers)
Intelligent Flag III
V600-HAM42-DRT

An RFID system that is as easy and simple to use as a sensor. No programming required.

- Conforms to DeviceNet standards.
- Uses the same main functions (Read, Write, Bit Set, Bit Clear, etc.) as those of the V600-HA Intelligent Flag Series.
- Responds flexibly to applications with data reading up to 24 bits.
- Allows data to be written in units of up to 16 bits.
- CE marking/FCC approvals.

Ordering Information/Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>V600-HAM42-DRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications power supply voltage</td>
<td>11 to 25 VDC (provided from communications connector)</td>
</tr>
<tr>
<td>Internal circuit power supply voltage</td>
<td>18 to 26.4 VDC</td>
</tr>
<tr>
<td>Internal current consumption</td>
<td>Communications power supply: 40 mA max.</td>
</tr>
<tr>
<td></td>
<td>Internal circuit power supply: 150 mA max.</td>
</tr>
<tr>
<td>Noise immunity</td>
<td>Internal circuit power supply normal: ±600 V</td>
</tr>
<tr>
<td></td>
<td>Internal circuit power supply common: ±1,500 V</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>50/60 Hz at 500 V AC for 1 minute; leakage current 10 mA max.</td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>10 to 55 Hz, 1.5-mm double amplitude, with 4 sweeps of 8 min each in 3 directions</td>
</tr>
<tr>
<td>Shock resistance</td>
<td>294 m/s², 3 times each in 3 directions (18 times total)</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>0 to 55°C (with no icing)</td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>35% to 85% RH (with no condensation)</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-25 to 65°C</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IEC 60529: IP20 (panel mounted)</td>
</tr>
<tr>
<td>Mounting method</td>
<td>DIN track or direct mounting using accessory fittings (M4 screws)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 150 g</td>
</tr>
</tbody>
</table>
### Sensor

<table>
<thead>
<tr>
<th>Item</th>
<th>V600-HS51</th>
<th>V600-HS61</th>
<th>V600-HS63</th>
<th>V600-HS67</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oscillation frequency</strong></td>
<td>530 kHz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>−10 to 60°C</td>
<td>−10 to 70°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Storage temperature</strong></td>
<td>−25 to 75°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ambient humidity</strong></td>
<td>35% to 95%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Insulation resistance</strong></td>
<td>50 MΩ (at 500 V DC)</td>
<td>between cable terminal and case</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dielectric strength</strong></td>
<td>1,000 V AC, 50/60 Hz for 1 min between cable terminal and cable (leakage current 1 mA max.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Degree of protection</strong></td>
<td>IEC 60529: IP67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vibration resistance</strong></td>
<td>10 to 2,000 Hz, 3-mm double amplitude, with 2 sweeps of 15 min each in 3 directions</td>
<td>10 to 500 Hz, 2-mm double amplitude, with 3 sweeps of 11 min each in 3 directions</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shock resistance</strong></td>
<td>981 m/s², 3 times each in 3 directions (18 times total)</td>
<td>490 m/s², 3 times each in 3 directions (18 times total)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cable length</strong></td>
<td>2 m (fixed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wireless transmission error direction</strong></td>
<td>16-bit CRC (Cyclic Redundancy Check) in both directions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Indicator</strong></td>
<td>---</td>
<td>Power: green</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Approx. 70 g</td>
<td>Approx. 190 g</td>
<td>Approx. 540 g</td>
<td></td>
</tr>
<tr>
<td><strong>Number of Master words</strong></td>
<td>Input: 2; output: 2 (total: 4 words)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number of sensor connections</strong></td>
<td>1 channel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Applicable sensors</strong></td>
<td>V600-HS51, V600-HS61, V600-HS63, V600-HS67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Read</strong></td>
<td>DATA READ mode</td>
<td>Read 24 bits of data from the set address</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Write</strong></td>
<td>BYTE mode</td>
<td>Write 8-bit or 16-bit data from the set address</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BIT SET mode</strong></td>
<td>Set (write &quot;1&quot;) only the data for the bits that are set (with &quot;1&quot;) at the set address</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BIT CLEAR mode</strong></td>
<td>Clear (write &quot;0&quot;) only the data for the bits that are set (with &quot;1&quot;) at the set address</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
System Configuration

Host System
Programmable Controller
Master Unit

Amplifier
V600-HAM42-DRT

Sensor
V600-HS51, V600-HS61, V600-HS63, V600-HS67

Data Carriers

Amplifier
V600-HAM42-DRT

I/O

I/O

Host System
Programmable Controller
Master Unit
Transmission Distance Specifications

<table>
<thead>
<tr>
<th>Data Carrier</th>
<th>Amplier Sensor</th>
<th>V600-HS51</th>
<th>V600-HS61</th>
<th>V600-HS63</th>
<th>V600-HS67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>EEP-ROM Type</td>
<td>V600-D23P53</td>
<td>0.5 to 3.0 mm</td>
<td>0.5 to 3.0 mm</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>V600-D23P54</td>
<td>0.5 to 5.0 mm</td>
<td>0.5 to 5.5 mm</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>V600-D23P55</td>
<td>0.5 to 7.0 mm</td>
<td>0.5 to 7.0 mm</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>V600-D23P61</td>
<td>0.5 to 8.0 mm</td>
<td>0.5 to 9.0 mm</td>
<td>2 to 16 mm</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>V600-D23P65N</td>
<td>---</td>
<td>---</td>
<td>5 to 30 mm</td>
<td>5 to 35 mm</td>
</tr>
<tr>
<td></td>
<td>V600-D23P65SP</td>
<td>---</td>
<td>---</td>
<td>5 to 25 mm</td>
<td>5 to 30 mm</td>
</tr>
<tr>
<td></td>
<td>V600-D23P71</td>
<td>---</td>
<td>---</td>
<td>5 to 35 mm</td>
<td>10 to 65 mm</td>
</tr>
<tr>
<td></td>
<td>V600-D23P72</td>
<td>---</td>
<td>0.5 to 18 mm</td>
<td>5 to 35 mm</td>
<td>10 to 45 mm</td>
</tr>
<tr>
<td>Memory</td>
<td>S-RAM Type</td>
<td>V600-D8KR12</td>
<td>5 to 15 mm</td>
<td>5 to 18 mm</td>
<td>5 to 45 mm</td>
</tr>
<tr>
<td></td>
<td>V600-D8KR13</td>
<td>---</td>
<td>---</td>
<td>2 to 15 mm</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>V600-D2KR16</td>
<td>---</td>
<td>---</td>
<td>2 to 15 mm</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>V600-D8KR04</td>
<td>---</td>
<td>---</td>
<td>10 to 65 mm</td>
<td>10 to 90 mm</td>
</tr>
</tbody>
</table>

Note: 1. Sensor installation conditions
   - V600-HS51: When flush-mounted in iron
   - Axial offset from the Data Carrier ±2.0 mm
   - V600-HS61: When surface-mounted on metal (ferrous)
   - Axial offset from the Data Carrier: ±2.0 mm
   - V600-HS63: When surface-mounted on metal (ferrous)
   - Axial offset from the Data Carrier: ±10.0 mm
   - V600-HS67: When surface-mounted on metal (ferrous)
   - Axial offset from the Data Carrier: ±10.0 mm

2. Data Carrier installation conditions
   - V600-D23P53/-P54: When flush-mounted in iron
   - V600-D23P55: When flush-mounted in iron, the transmission distance decreases greatly.
   - V600-D23P65N/P65S/-P71/-P72: When surface-mounted on resin (no metal on the backside)
   - V600-D23P61: When surface-mounted on metal (ferrous)
   - V600-D8KR12/13/04: When surface-mounted on metal (ferrous)
   - V600-D2KR16: When the Data Carrier attached to the holder is mounted on metal (ferrous)

3. The transmission distance specified in the specifications is also applicable when the Data Carrier is mounted on non-metallic surfaces.
4. The Data Carrier is stationary.

Characteristic Data (Typical)

Transmission Range

Note: All units are in millimeters unless otherwise indicated.

Combinations with the V600-HS51 Sensor

V600-HS51 & V600-D23P53

V600-HS51 & V600-D23P54

V600-HS51 & V600-D23P55

V600-HS51 & V600-D23P61

V600-HS51 & V600-D8KR12
Combinations with the V600-HS61 Sensor

V600-HS61 & V600-D23P53

V600-HS61 & V600-D23P54

V600-HS61 & V600-D23P55

V600-HS61 & V600-D23P61

V600-HS61 & V600-D23P62

V600-HS61 & V600-D8KR12

Combinations with the V600-HS63 Sensor

V600-HS63 & V600-D23P55

V600-HS63 & V600-D23P61

V600-HS63 & V600-D23P66N

V600-HS63 & V600-D23P66SP

V600-HS63 & V600-D23P71

V600-HS63 & V600-D23P72

V600-HS63 & V600-D8KR12

V600-HS63 & V600-D8KR13

V600-HS63 & V600-D8KR04

V600-HS63 & V600-D2KR16
Combinations with the V600-HS67 Sensor

V600-HS67 & V600-D23P66N

V600-HS67 & V600-D23P66SP

V600-HS67 & V600-D23P71

V600-HS67 & V600-D23P72

V600-HS67 & V600-D8KR12

V600-HS67 & V600-D8KR13

V600-HS67 & V600-D8KR04

■ Transmission Time

The transmission time is the time required for transmission between the Sensor and the Data Carrier.

<table>
<thead>
<tr>
<th>Model</th>
<th>V600-HAM42-DRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read</td>
<td>Write</td>
</tr>
<tr>
<td>DATA READ mode</td>
<td>BYTE mode</td>
</tr>
<tr>
<td>Battery-less type</td>
<td>79 ms</td>
</tr>
<tr>
<td>Built-in battery type</td>
<td>64 ms</td>
</tr>
</tbody>
</table>

Battery-less type: V600-D23P53, V600-D23P54, V600-D23P55, V600-D23P61, V600-D23P66N, V600-D23P66SP, V600-D23P72, V600-D23P71, V600-D23P72

Dimensions

Note: All units are in millimeters unless otherwise indicated.

Amplifier

V600-HAM42-DRT

Sensor

V600-HS51

V600-HS61
V600-series Data Carrier

Built-in-battery DCs

V600-D8KR12

V600-D8KR04

Intelligent Flag III V600-HAM42-DRT
Replaceable-battery DCs

V600-D2KR16

Battery-less DCs

V600-D23P53

V600-D23P54

V600-D23P55

V600-D23P61

V600-D23P66N

V600-D23P66SP

V600-D23P71

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.
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