



Ha-VIS RFID RF-R400 Reader

## Advantages

- Applicable in rough, metal-containing industrial environments
- Robust aluminium housing
- High transponder population
- Very fast multiplexing speed
- Robust M12 and M8 connectors

## Technical characteristics

|                                            |                                                                                                                                                                                                                        |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Transponder protocol</b>                | EPC Class 1 Gen 2<br>(ISO 18 000-6-c on request)<br>EPC Class 1 Gen V2                                                                                                                                                 |
| <b>UHF RFID antenna interface</b>          |                                                                                                                                                                                                                        |
| Antenna connection                         | 4 x SMA connector (50 Ohm);<br>Reader internally multiplexed                                                                                                                                                           |
| Output power                               | max. 2 W (configurable)                                                                                                                                                                                                |
| Frequency area                             | 860 MHz ... 928 MHz<br>(depending on specific reader)                                                                                                                                                                  |
| <b>Interfaces</b>                          | <ul style="list-style-type: none"> <li>• Ethernet (TCP/IP) 10/100 Mbit/s;<br/>Full Spec. 802.3</li> <li>• RS 232</li> <li>• USB</li> </ul>                                                                             |
| Inputs                                     | <ul style="list-style-type: none"> <li>• 2 optocoupler<br/>(max. 24 V DC / 20 mA)</li> </ul>                                                                                                                           |
| Outputs                                    | <ul style="list-style-type: none"> <li>• 2 optocoupler (24 V DC / 20 mA)</li> <li>• 2 relays (24 V DC / 1 A)</li> </ul>                                                                                                |
| <b>LED Diagnosis</b>                       |                                                                                                                                                                                                                        |
| 8 LEDs (from left to right)                | <ul style="list-style-type: none"> <li>• Run</li> <li>• Host communication</li> <li>• Warning</li> <li>• Input / output</li> <li>• Antenna 1</li> <li>• Antenna 2</li> <li>• Antenna 3</li> <li>• Antenna 4</li> </ul> |
| <b>Performance</b>                         |                                                                                                                                                                                                                        |
| Bulk-reading capability                    | < 150 Transponder / s                                                                                                                                                                                                  |
| Max. reading distance                      | up to 16 meters, depending on kind<br>of transponder & environmental<br>conditions                                                                                                                                     |
| <b>Protocol modi</b>                       | <ul style="list-style-type: none"> <li>• Host Mode</li> <li>• Scan Mode</li> <li>• Notification Mode</li> <li>• Buffered Read Mode</li> </ul>                                                                          |
| <b>Power supply</b>                        |                                                                                                                                                                                                                        |
| Power supply                               | + 24 V DC (± 5 %)                                                                                                                                                                                                      |
| Current consumption                        | max. 2 A                                                                                                                                                                                                               |
| <b>Design features</b>                     |                                                                                                                                                                                                                        |
| Material of housing                        | Aluminium, powder coated                                                                                                                                                                                               |
| Dimensions (W x H x D)                     | 261.3 x 157.3 x 68 mm                                                                                                                                                                                                  |
| Weight                                     | 2000 g                                                                                                                                                                                                                 |
| Degree of protection<br>acc. to DIN 60 529 | IP 64 (with protection cap)<br>IP 53 (without protection cap,<br>with rubber plug)                                                                                                                                     |
| Installation on DIN rail                   | DIN rail mounting kit<br>(optional accessories)                                                                                                                                                                        |

## General description

The Ha-VIS RF-R400 is a powerful 4 port UHF RFID reader. With the robust M12 (Ethernet) and M8 (power, IO and serial) connectors the reader is designed for the harsh industrial and railway environment. Even in time critical applications multiple antennas could be used due to its internal high speed multiplexer.



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### Environmental conditions

|                       |                                                   |
|-----------------------|---------------------------------------------------|
| Operating temperature | -25 °C ... +55 °C                                 |
| Storage temperature   | -25 °C ... +85 °C                                 |
| Relative humidity     | 5 % ... 95 % (non-condensing)                     |
| Vibration             | EN 60 068-2-6<br>10 Hz ... 150 Hz: 0.075 mm / 1 g |
| Shock                 | EN 60 068-2-27<br>Acceleration: 30 g              |

### Norms & safety

|                |                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------|
| Radio license  | <ul style="list-style-type: none"> <li>• EN 302 208</li> <li>• FCC 47 FCR Part 15</li> <li>• IC RSS-GEN, RSS-210</li> </ul> |
| EMC            | EN 301 489                                                                                                                  |
| Low voltage    | EN 60 950                                                                                                                   |
| Human Exposure | EN 50 364                                                                                                                   |
| RoHS compliant |                                                                                                                             |

## Technical characteristics

### Others

- RSSI
- Action on EPC
- Configuration cloning

### Software

|                                  |                                                                                                                                                       |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Demo- and configuration software | Ha-VIS RFID config                                                                                                                                    |
|                                  | <ul style="list-style-type: none"> <li>• Windows® 7 (32 / 64 Bit) or Windows® 10</li> <li>• Hard disk with minimum free 30 MB memory space</li> </ul> |
|                                  | Ha-VIS Middleware                                                                                                                                     |

### Railway (rolling stock) – available end of Q2/2017

|                   |                            |
|-------------------|----------------------------|
| Isolation         | EN 50 155                  |
| EMC               | EN 50 121-3-2              |
| EMC               | EN 50 121-4                |
| Vibration         | EN 61373 Cat 1B            |
| Shock             | EN 61373 Cat 1B            |
| Wet heat (cyclic) | EN 50 155 / EN 60 068-2-30 |
| Fire protection   | EN 45545                   |

| Identification                                   | Part number        | Drawing | Dimensions in mm |
|--------------------------------------------------|--------------------|---------|------------------|
| Ha-VIS RFID RF-R400                              |                    |         |                  |
| EU version                                       | 20 91 107 1101     |         |                  |
| US version                                       | 20 91 107 1102     |         |                  |
| <b>Optional accessories</b>                      |                    |         |                  |
| DIN rail mounting kit                            | 20 93 102 0201     |         |                  |
| Protection cap                                   | 20 93 901 0101     |         |                  |
| M8 cable assembly (2 m, for power supply - VCC)* | 21 34 810 0489 020 |         |                  |
| M8 cable assembly (2 m, for RS 232, relay)*      | 21 34 B20 0821 020 |         |                  |
| M8 cable assembly (2 m, for IO)*                 | 21 34 730 0821 020 |         |                  |
| M12 D-coded Ethernet cable (3 m)*                | 09 45 700 5025     |         |                  |

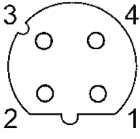


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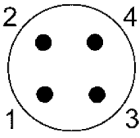
## Technical characteristics

### Connectors / Pin assignment

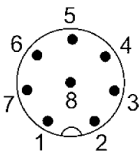
| LAN (D-coded) |     |
|---------------|-----|
| 1             | TX+ |
| 2             | TX- |
| 3             | RX+ |
| 4             | RX- |

| VCC |         |
|-----|---------|
| 1   | 24 V-in |
| 2   | 24 V-in |
| 3   | GND-in  |
| 4   | GND-in  |

| RS232 / RELAY |             |
|---------------|-------------|
| 1             | RS232-RxD   |
| 2             | RS232-TxD   |
| 3             | GND         |
| 4             | +24 VDC     |
| 5             | RELAIS1-NO  |
| 6             | RELAIS1-COM |
| 7             | RELAIS2-NO  |
| 8             | RELAIS2-COM |

| IO |             |
|----|-------------|
| 1  | OPTO-OUT1-E |
| 2  | OPTO-OUT1-C |
| 3  | OPTO-OUT2-E |
| 4  | OPTO-OUT2-C |
| 5  | OPTO-IN1-   |
| 6  | OPTO-IN1+   |
| 7  | OPTO-IN2-   |
| 8  | OPTO-IN2+   |

