

# Ha-VIS RFID RF-R500 Reader



Ha-VIS RFID RF-R500-c  
Ha-VIS RFID RF-R500-p

## Advantages

- Applicable in rough, metal-containing industrial environments
- Robust aluminium housing
- High transponder population
- Very long antenna cable possible
- **New:** Additional 8-fold antenna multiplexer (optional)
- **New:** Web interface for configuration
- **New:** Sample function blocks for Siemens Simatic® and S7®
- **New:** PROFIBUS®, PROFINET® optional via gateway

## General Description

The Ha-VIS RF-R500-c and Ha-VIS RF-R500-p RFID readers are two high performance Long Range Readers licensed according to ETSI, FCC, IC, SRRRC (China) and GOST-R (Russia).

Characteristics:

- High receiver sensitivity for enlarged and homogeneous tag detection range
- Powerful tag response decoding, e.g. for Dense Reader Mode
- 5 hardware interface ports: Ethernet, RS 232, RS 485, USB and USB-Port
- Reader protection against fault conditions like antenna shortcut, antenna mismatching and electrostatic discharge
- RSSI data readout

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS RFID RF-500-c 2 W output power			
EU version	20 91 104 1103		
US version	20 91 104 1104		
Ha-VIS RFID RF-500-p with PoE / 4 W output power			
EU version	20 91 104 1101		
US version	20 91 104 1102		
Optional accessories			
DIN Rail mounting Kit for RF-R500	20 93 102 0201		
Protection cap Ha-VIS RF-R500	20 93 901 0101		

All data represent the current state of development at the time of print and are therefore non-binding.

HARTING reserves the right to modify designs without prior notice.

## Technical characteristics

<b>Transponder protocol</b>	EPC Class 1 Gen 2 (ISO 18000-6-c)
<b>UHF RFID antenna interface</b>	
Antenna connection	4 x SMA connector (50 Ohm); Reader internally multiplexed
Output Power	
Ha-VIS RFID RF-R500-c	0.3 W ... 2 W (configurable)
Ha-VIS RFID RF-R500-p	0.3 W ... 4 W (configurable)
Frequency area	860 MHz ... 960 MHz (depending on specific reader)
Supply voltage on antenna outputs	24 V DC / 200 mA (Ha-VIS RFID RF-R500-p only)
<b>Interfaces</b>	
	<ul style="list-style-type: none"> <li>• Ethernet (TCP/IP) 10/100 Mbit/s; Full Spec. 802.3</li> <li>• RS 232 / RS 485</li> <li>• USB / USB-Port for WLAN dongle or external memory</li> </ul>
Inputs	5 Optocoupler (max. 24 V DC / 20 mA)
Outputs	<ul style="list-style-type: none"> <li>• 2 Optocoupler (24 V DC / 30 mA)</li> <li>• 3 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-Read capability	
Ha-VIS RFID RF-R500-c	< 150 Transponder/sec
Ha-VIS RFID RF-R500-p	> 150 Transponder/sec
Max. Operating Distance	Up to 16 m, depending on kind of transponder & environmental 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>

## Technical characteristics

### Power Supply

Power supply	
Ha-VIS RFID RF-R500-c	+24 V DC ( $\pm 5\%$ )
Ha-VIS RFID RF-R500-p	+24 V DC ( $\pm 5\%$ ) / Power over Ethernet (PoE)
Current consumption	max. 2 A

### Design features

Material of housing	Aluminium, powder coated
Dimensions (W x H x D)	260 x 153 x 70 mm
Weight	2000 g
Degree of protection acc. to DIN 60 529	IP 64 (with protection cap) / IP 53 (without protection cap)
Installation on DIN rail	DIN rail mounting kit (optional accessories)

### Environmental conditions

Operating temperature	-25 °C ... +50 °C
Storage temperature	-25 °C ... +85 °C
Relative humidity	5 % ... 95 % (non-condensing)
Vibration	EN 60 068-2-6 10 Hz ... 150 Hz: 0.075 mm / 1 g
Shock	EN 60 068-2-27 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> <li>• SRRC (China) (US version)</li> <li>• GOST-R (Russia) (EU version)</li> </ul>
EMC	EN 301 489
Low voltage	EN 60 950
Human Exposure	EN 50 364
RoHS compliant	

### RF diagnosis

- RF Channel monitoring
- Antenna SWR control
- Internal overheating control

## Technical characteristics

### Operating system

Linux (Kernel 3.x.x)  
64 MB RAM, 256 MB Flash

### Others

- Anticollision function
- Real time clock
- RSSI
- Basic SNMP support

### Software

Demo- and configuration software

Ha-VIS RFID config

Minimal hardware requirements

- Personal computer IBM PC Pentium III 1000 MHz or faster recommended
- Windows XP® (32 Bit) with 256 MB RAM or Windows® 7 (32 / 64 Bit)
- Hard disk with minimum free 30 MB memory space
- Windows® compatible mouse
- Windows® compatible super VGA graphic card (800 x 600) (1024x768 recommended)

### Web interface

- Configuration via browser
- Compatible with Ha-VIS Dashboard

### Railway (rolling stock)

Isolation

EN 50 155

EMC

EN 50 121-3-2 (with protection cap and ferrite cores)

EMC

EN 50 121-4 (with protection cap and ferrite cores)

Vibration

EN 61373 Cat 1B

Shock

EN 61373 Cat 1B

Wet heat (cyclic)

EN 50 155 / EN 60068-2-30