CONTENTS PAGE

C – Ha-VIS RFID components	
Ha-VIS RFID overview	C 2
Ha-VIS RFID Transponder	C·1 1
Ha-VIS RFID Reader	C·2 1
Ha-VIS RFID Antennas	C·3 1
Cables and Accessories	C·4 1

General

HARTING Ha-VIS RFID System components

Real-time information and the close synchronization of computer data and real processes play a critical role in process management and process optimization. Ensuring that information precisely maps and concurs with reality is the only way to control processes optimally and reap savings potentials accordingly.

One important prerequisite for guaranteeing that data and processes are synchronized is an intelligent infrastructure that makes data transparent and available throughout a company in order to achieve the maximum savings potentials.

RFID offers you the full potential to create intelligent infrastructures: benefit from the simultaneous identification of up to several hundred objects - without the need for the direct line of sight as required by barcode solutions. The collected data are immediately ready for further processing throughout the company.

Moreover, a transponder can be used to store information directly on the product at the same time it is identified. This means that these data are also always available wherever the product may happen to be located.

HARTING offers smart infrastructure solutions based on optimally coordinated components from a single source. These solutions enable the reliable control and steering of production and business processes, thereby resulting in lower costs.

The HARTING RFID Reader and components have been designed for harsh industrial applications. Deployed in the transportation, machinery and energy markets, HARTING RFID components guarantee secure and reliable information processing - also under the most challenging environmental conditions



CONTENTS PAGE

RFID Transponder		
	Ha-VIS RFID LT89	C·1 2
	Ha-VIS RFID PT86	C·1 3
	Ha-VIS RFID SL89	C·1 4
	Ha-VIS RFID CT89	C·1 5
	Ha-VIS RFID CF89	C·1 6
	Ha-VIS RFID CS89	C·1 7

Ha-VIS RFID Transponder

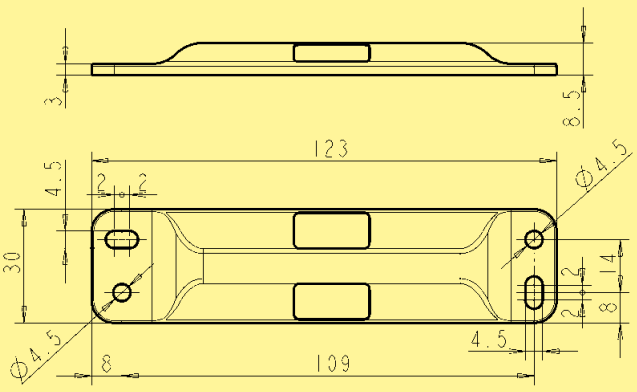


Passive UHF Transponder
Ha-VIS RFID LT 89 (NT)-G2AH3

Technical characteristics

Frequency range	860 MHz ... 960 MHz
Protocol	EPC C1Gen2
Chip	Alien Higgs 3
Memory	512 bit
Lesereichweite (Freiraum, 2 W ERP)	≥ 2.5 m
Abmessungen (B x H x T)	123 x 30 x 8 mm
Degrees of protection	IP 64 / IP 67 / IP 69K
Temperature range	
Operational range (read)	-40 °C ... +85 °C
Operational range (write)	-40 °C ... +85 °C
Storage	-50 °C ... +85 °C
Mounting	M4 screws or rivets with washers
Colour	Black
Merkmale	• On any objects including metallic surfaces like skeleton boxes or over fluids (e.g. container) • Robust housing • EPC C1 Gen2 compatible • Extended memory

Identification	Part number	Drawing	Dimensions in mm
Passive UHF Transponder Ha-VIS RFID LT 89 (NT)-G2AH3			
Package with 10 units	20 92 641 0001		
Package with 50 units	20 92 641 0002		



Ha-VIS RFID Transponder

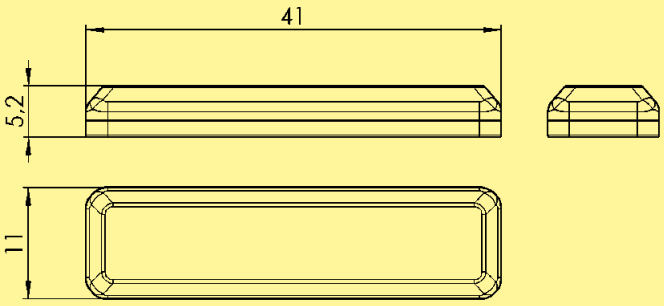


Passive UHF Transponder
Ha-VIS RFID LT 89 (NT)-G2AH3

Technical characteristics

Frequency range	860 MHz ... 960 MHz
Protocol	EPC C1Gen2
Chip	Alien Higgs 3
Memory	512 bit
Lesereichweite (Freiraum, 2 W ERP)	≥ 2.5 m
Abmessungen (B x H x T)	41 x 11 x 5 mm
Degrees of protection	IP 64 / IP 67 / IP 69K
Temperature range	
Operational range (read)	-50 °C ... +85 °C
Operational range (write)	-50 °C ... +85 °C
Storage	-65 °C ... +160 °C
Mounting	Adhesive film
Colour	Black
Merkmale	• Extremly robust and durable transponder for maintenance and life cycle applications in rough environments • Robust housing, resistant against chemicals • EPC C1 Gen2 compatible • Extended memory

Identification	Part number	Drawing	Dimensions in mm
Passive UHF Transponder Ha-VIS RFID LT 89 (NT)-G2AH3			
Package with 10 units	20 92 641 0101		
Package with 50 units	20 92 641 0102		



Ha-VIS RFID Transponder



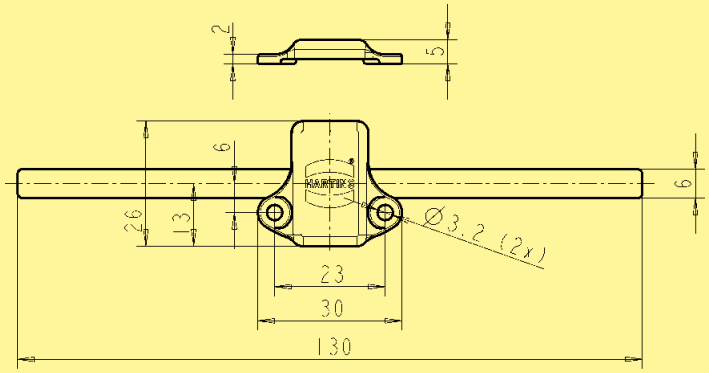


Passive UHF Transponder
Ha-VIS RFID SL 89 (MT)-G2AH3

Technical characteristics

Frequency range	860 MHz ... 960 MHz
Protocol	EPC C1Gen2
Chip	Alien Higgs 3
Memory	512 bit
Lesereichweite (Freiraum, 2 W ERP)	≥ 4.0 m
Abmessungen (B x H x T)	30 x 26 x 5 mm
Degrees of protection	IP 64 / IP 67 / IP 69K
Temperature range	
Operational range (read)	-50 °C ... +85 °C
Operational range (write)	-50 °C ... +85 °C
Storage	-65 °C ... +130 °C
Mounting	M3 screws or rivets with washers
Slot dimensions	140 x 6 mm
Colour	Black
Merkmale	• Slot tag for integration in metallic objects like barrels, pallets or extruded profiles (slot dimensions 140 x 6 mm) • Extremly high mechanical protection • EPC C1 Gen2 compatible • Extended memory

Identification	Part number	Drawing	Dimensions in mm
Passive UHF Transponder Ha-VIS RFID SL 89 (MT)-G2AH3			
Package with 10 units	20 92 641 0601		
Package with 50 units	20 92 641 0602		



Ha-VIS RFID Transponder

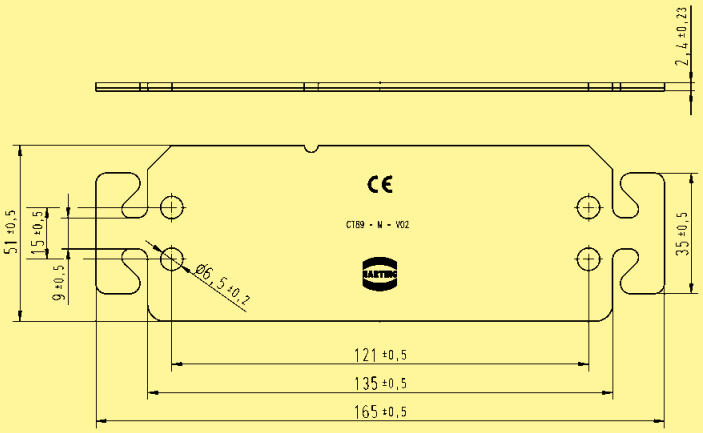


Passive UHF Transponder
Ha-VIS RFID CT 89 (NT)-G2UCXM

Technical characteristics

Frequency range	860 MHz ... 960 MHz
Protocol	EPC C1Gen2
Chip	NXP UCODE G2XM
Memory	512 bit
Lesereichweite (Freiraum, 2 W ERP)	≥ 5.0 m
Abmessungen (B x H x T)	165 x 51 x 2 mm
Degrees of protection	IP 64 / IP 67 / IP 69K
Temperature range	
Operational range (read)	-40 °C ... +85 °C
Operational range (write)	-40 °C ... +85 °C
Storage	-50 °C ... +85 °C
Mounting	M4 screws or rivets with washers
Colour	Black
Merkmale	• Identification of reinforced concrete parts for the building industry • Integration in concrete floors for location of storage areas • High read range also in wet materials • Robust housing • EPC C1 Gen2 compatible • Extended memory

Identification	Part number	Drawing	Dimensions in mm
Passive UHF Transponder Ha-VIS RFID CT 89 (NT)-G2UCXM			
Package with 10 units	20 92 641 0301		
Package with 50 units	20 92 641 0302		



Ha-VIS RFID Transponder

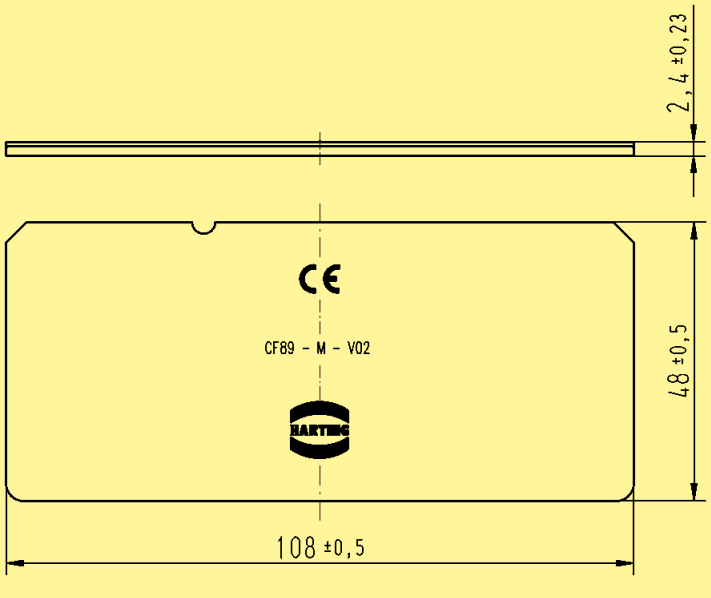


Passive UHF Transponder
Ha-VIS RFID CF 89 (NT)-G2UCXM

Technical characteristics

Frequency range	860 MHz ... 960 MHz
Protocol	EPC C1Gen2
Chip	NXP UCODE G2XM
Memory	512 bit
Lesereichweite (Freiraum, 2 W ERP)	≥ 5.0 m
Abmessungen (B x H x T)	108 x 48 x 2 mm
Degrees of protection	IP 64 / IP 67 / IP 69K
Temperature range	
Operational range (read)	-40 °C ... +85 °C
Operational range (write)	-40 °C ... +85 °C
Storage	-50 °C ... +85 °C
Mounting	M4 screws or rivets with washers
Colour	Black
Merkmale	• Identification of reinforced concrete parts for the building industry • Integration in concrete floors for location of storage areas • High read range also in wet materials • Robust housing • EPC C1 Gen2 compatible • Extended memory

Identification	Part number	Drawing	Dimensions in mm
Passive UHF Transponder Ha-VIS RFID CF 89 (NT)-G2UCXM			
Package with 10 units	20 92 641 0401		
Package with 50 units	20 92 641 0402		



Ha-VIS RFID Transponder

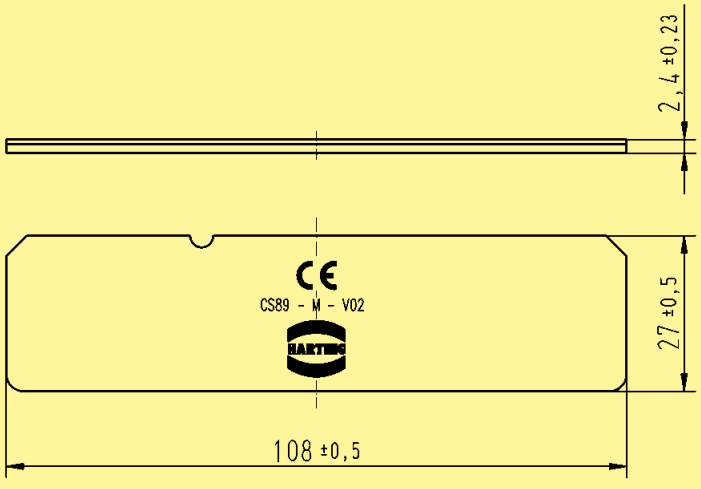


Passive UHF Transponder
Ha-VIS RFID CS 89 (NT)-G2UCXM

Technical characteristics

Frequency range	860 MHz ... 960 MHz
Protocol	EPC C1Gen2
Chip	NXP UCODE G2XM
Memory	512 bit
Lesereichweite (Freiraum, 2 W ERP)	≥ 5.0 m
Abmessungen (B x H x T)	108 x 27 x 2 mm
Degrees of protection	IP 64 / IP 67 / IP 69K
Temperature range	
Operational range (read)	-40 °C ... +85 °C
Operational range (write)	-40 °C ... +85 °C
Storage	-50 °C ... +85 °C
Mounting	M4 screws or rivets with washers
Colour	Black
Merkmale	• Identification of reinforced concrete parts for the building industry • Integration in concrete floors for location of storage areas • High read range also in wet materials • Robust housing • EPC C1 Gen2 compatible • Extended memory

Identification	Part number	Drawing	Dimensions in mm
Passive UHF Transponder Ha-VIS RFID CS 89 (NT)-G2UCXM			
Package with 10 units	20 92 641 0501		
Package with 50 units	20 92 641 0502		



Notes

CONTENTS PAGE

Ha-VIS RFID RF-R500		
	Introduction and features	C·2 2
	Technical characteristics	C·2 3
	Ha-VIS RFID RF-R500-c-EU	C·2 5
	Ha-VIS RFID RF-R500-p-EU	C·2 6
	Ha-VIS RFID RF-R500-c-US	C·2 7
	Ha-VIS RFID RF-R500-p-US	C·2 8

Ha-VIS RFID RF-R500 Reader - Introduction and features



RFID Reader
Ha-VIS RFID RF-R500

General description

The Ha-VIS® RFID RF-R500 is a high performance UHF RFID long range reader. It supports up to 4 antennas simultaneously reducing costs and easing integration of RFID technology. Due to its robust aluminium housing and up to IP 64, it is ideally suited for industrial applications.

The reader was designed for very high reading sensitivity combined with impressive reading and data processing speed. The reader brings wireless RFID communication into industrial environments.

The reader can directly control lamps, sirens or gates via the integrated GPIOs.

Features

- Up to 4 antenna
- Up to 4 W transmitting power
- Impressive bulk reading
- Power over Ethernet (PoE)
- Up to IP 64 with an optional protection cap (otherwise IP 53)
- 5 hardware interfaces: Ethernet, RS 232, RS 485, USB, and a USB port for external memory

Advantages

- High receiver sensitivity for enlarged and homogeneous tag detection range
- Metal housing
- Integrated antenna multiplexer
- Simple installation
- Versatile hardware and software configuration

Application fields

- Smart infrastructure
- Logistics
- Asset management
- Machinery

Ha-VIS RFID RF-R500 Reader

Technical characteristics

Transponder protocol	EPC Gen2 (ISO 18000-6-c)
UHF RFID antenna interface	
Antenna connection	4x SMA connector (50 Ohm); Reader internally multiplexed
Frequency area	860 MHz ... 960 MHz (depending on specific reader)
Radio license	Europe EN 302 208
Supply voltage on antenna outputs	24 V DC / 200 mA (Ha-VIS RFID RF-R500-p only)
Interfaces	• Ethernet (TCP/IP) 10/100 Mbit/s; Full Spec. 802.3 • RS 232 / RS 485 • USB / USB-Port for WLAN dongle or external memory
Inputs	5 Optocoupler (max. 24 V DC / 20 mA)
Outputs	• 2 Optocoupler (24 V DC / 30 mA) • 3 Relays (24 V DC / 1 A)
LED Diagnosis	
8 LEDs (from left to right)	• Run • Host communication • Warning • Input / output • Antenna 1 • Antenna 2 • Antenna 3 • Antenna 4
Performance	
Max.Operating Distance	Up to 16 m, depending on kind of transponder & environmental conditions
Protocol Modi	• HARTING Host Mode • Scan Mode • Notification Mode • Buffered Read Mode
Power Supply	
Current consumption	max. 2 A
Design features	
Material of housing	Aluminium, powder coated
Dimensions (W x H x D)	260 x 157 x 68 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)

Ha-VIS RFID RF-R500 Reader

Technical characteristics

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	• EN 302 208 • FCC 47 FCR Part 15 • IC RSS-GEN, RSS-210
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
Operating system	Linux (Kernel 3.x.x) 64 MB RAM, 256 MB Flash
Others	• Anticollision function • Real time clock • RSSI
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)

Ha-VIS RFID RF-R500 Reader

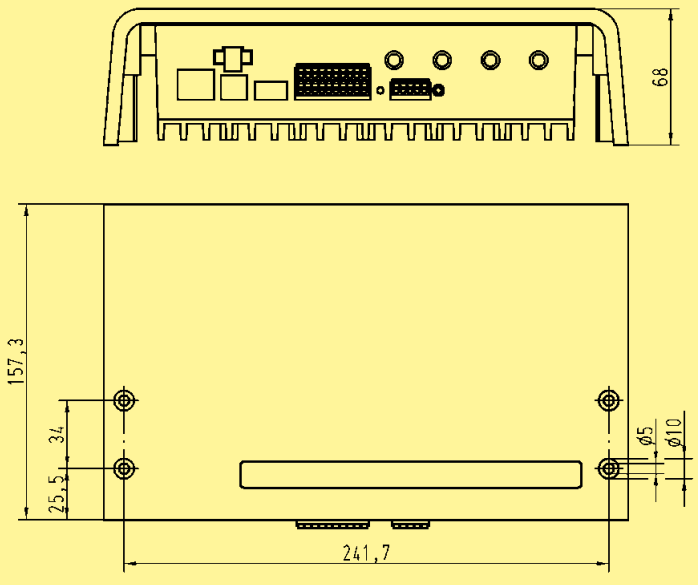


UHF RFID Long Range Reader
Ha-VIS RFID RF-500-c-EU

Technical characteristics

Antenna connection	4x SMA connector (50 Ohm); reader internally multiplexed
Transmitting Power	max. 2 W
Frequency area	865 MHz ... 870 MHz
Radio license	EN 302 208
Inputs	5 optocoupler (max. 24 V DC / 20 mA)
Outputs	• 2 optocoupler (24 V DC / 30 mA) • 3 relays (24 V DC / 1 A)
Bulk-Read capability	< 150 transponders/sec
Max.Operating Distance	< 10 m, depending on kind of transponder & environmental conditions
Power supply	+24 V DC (±5 %)
Current consumption	max. 2 A
Dimensions (W x H x D)	260 x 157 x 68 mm
Weight	2000 g
Degree of protection acc. to DIN 60 529	IP 64 (with protection cap) / IP 53 (without protection cap)
Operating temperature	-25 °C ... +50 °C

Identification	Part number	Drawing	Dimensions in mm
UHF RFID long range Reader Ha-VIS RFID RF-500-c-EU 2 W transmission power			
EU version	20 91 104 1103		



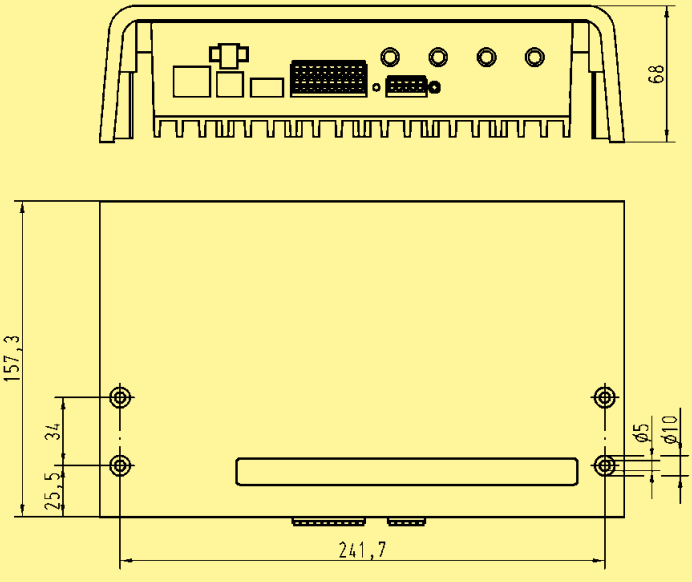
Ha-VIS RFID RF-R500 Reader



UHF RFID Long Range Reader
Ha-VIS RFID RF-500-p-EU

Technical characteristics

Antenna connection	4x SMA connector (50 Ohm); reader internally multiplexed
Transmitting Power	max. 4 W / max. 1 W in PoE modi
Frequency area	865 MHz ... 870 MHz
Radio license	EN 302 208
Supply voltage on antenna outputs	24 V DC / 200 mA
Inputs	5 optocoupler (max. 24 V DC / 20 mA)
Outputs	• 2 optocoupler (24 V DC / 30 mA) • 3 relays (24 V DC / 1 A)
Bulk-Read capability	> 150 transponders/sec
Max.Operating Distance	Up to 16 m, depending on kind of transponder & environmental conditions
Power supply	+24 V DC (±5 %) / Power over Ethernet (PoE)
Current consumption	max. 2 A
Dimensions (W x H x D)	260 x 157 x 70 mm
Weight	2000 g
Degree of protection acc. to DIN 60 529	IP 64 (with protection cap) / IP 53 (without protection cap)
Operating temperature	-25 °C ... +50 °C

Identification	Part number	Drawing	Dimensions in mm
UHF RFID long range Reader Ha-VIS RFID RF-500-p-EU 4 W transmission power with PoE EU version	20 91 104 1101		

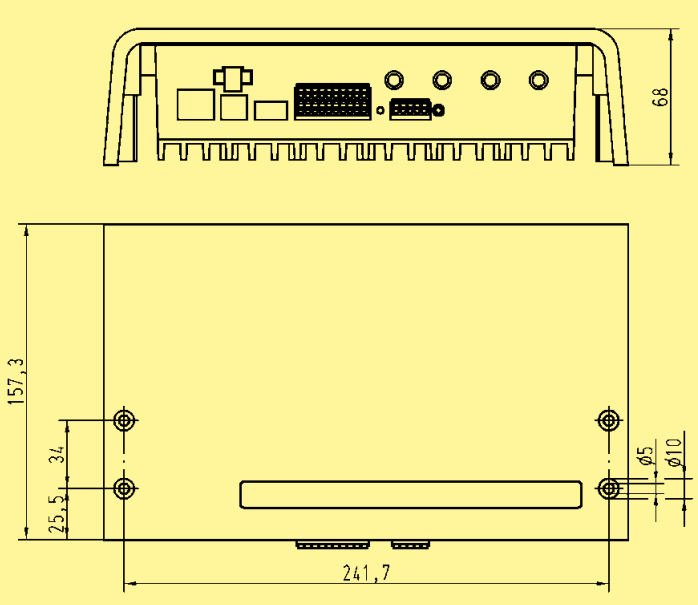
Ha-VIS RFID RF-R500 Reader



UHF RFID Long Range Reader
Ha-VIS RFID RF-500-c-US

Technical characteristics

Antenna connection	4x SMA connector (50 Ohm); reader internally multiplexed
Transmitting Power	max. 2 W
Frequency area	902 MHz ... 928 MHz
Radio license	FCC 47 CFR Part 15; IC RSS-GEN; IC RSS -210
Inputs	5 optocoupler (max. 24 V DC / 20 mA)
Outputs	• 2 optocoupler (24 V DC / 30 mA) • 3 relays (24 V DC / 1 A)
Bulk-Read capability	< 150 transponders/sec
Max.Operating Distance	Up to 10 m, depending on kind of transponder & environmental conditions
Power supply	+24 V DC (±5 %)
Current consumption	max. 2 A
Dimensions (W x H x D)	260 x 157 x 68 mm
Weight	2000 g
Degree of protection acc. to DIN 60 529	IP 64 (with protection cap) / IP 53 (without protection cap)
Operating temperature	-25 °C ... +50 °C

Identification	Part number	Drawing	Dimensions in mm
UHF RFID long range Reader Ha-VIS RFID RF-500-c-US 2 W transmission power US version	20 91 104 1104		

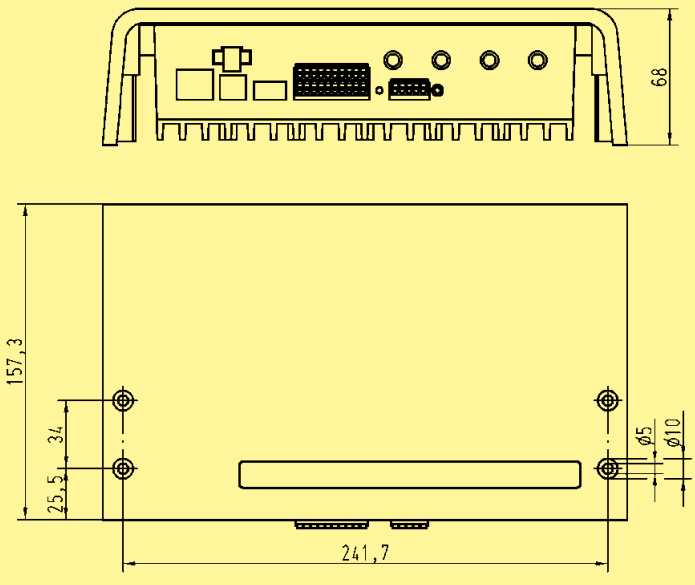
Ha-VIS RFID RF-R500 Reader



RFID Reader
Ha-VIS RFID RF-500-p-US

Technical characteristics

Antenna connection	4x SMA connector (50 Ohm); reader internally multiplexed
Transmitting Power	max. 4 W / max. 1 W in PoE modi
Frequency area	902 MHz ... 928 MHz
Radio license	FCC 47 CFR Part 15; IC RSS-GEN; IC RSS -210
Supply voltage on antenna outputs	24 V DC / 200 mA
Inputs	5 optocoupler (max. 24 V DC / 20 mA)
Outputs	• 2 optocoupler (24 V DC / 30 mA) • 3 relays (24 V DC / 1 A)
Bulk-Read capability	> 150 transponders/sec
Max.Operating Distance	Up to 16 m, depending on kind of transponder & environmental conditions
Power supply	+24 V DC (±5 %) / Power over Ethernet (PoE)
Current consumption	max. 2 A
Dimensions (W x H x D)	260 x 157 x 70 mm
Weight	2000 g
Degree of protection acc. to DIN 60 529	IP 64 (with protection cap) / IP 53 (without protection cap)
Operating temperature	-25 °C ... +50 °C

Identification	Part number	Drawing	Dimensions in mm
UHF RFID long range Reader Ha-VIS RFID RF-500-p-US 4 W transmission power with PoE US version	20 91 104 1102		

CONTENTS PAGE

UHF Wide range antennas		
	Introduction and features	C·3 2
	Technical characteristics	C·3 3
	Ha-VIS RF-ANT-WR30-EU	C·3 4
Ruggedized UHF Wide range antennas		
	Introduction and features	C·3 5
	Technical characteristics	C·3 6
	Ha-VIS RF-ANT-WR80-30-EU	C·3 7
	Ha-VIS RF-ANT-WR80-30-US	C·3 8

Ha-VIS RF-ANT-WR30 - Introduction and features



UHF Wide range antenna
Ha-VIS RF-ANT-WR30

General description

Features

- UHD RFID wide range antenna
- Reading range up to 16 m (depending upon tag properties, environment and requirements)
- Compact construction
- Optimized for portal applications
- Suitable for industrial environments
- High IP 65 protection class
- Suitable for outdoor usage

Advantages

Application fields

- Smart infrastructure
- Gate applications
- Asset management
- Machinery

Ha-VIS RF-ANT-WR30

Technical characteristics

Polarization	circular
Axial ratio	typ. 1 dB
VSWR	< 1.2:1
Impedance	50 Ohm
Front-to-back ratio	>18 dB
Far field half-power beam width	69°
Connection	TNC socket
Protection class	IP 65
Weight	approx. 1.7 kg
Dimensions (WxDxH)	270 x 270 x 45 mm
Material	
Antenna cover	tough, weather-resistant polymer blend colour RAL 7045
Chassis	Aluminium
Seals	thermoplastic elastomer
Installation	four M5 drill holes 100 x 100 mm
Temperature range	
storage	-40 °C … +85 °C
ambient	-20 °C … +55 °C

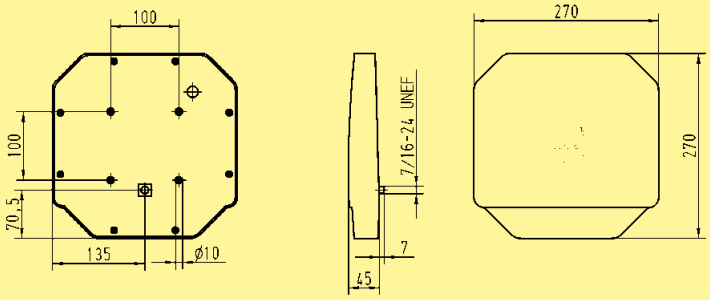
Ha-VIS RF-ANT-WR30



UHF Wide range antenna
Ha-VIS RF-ANT-WR30-EU

Technical characteristics

Frequency range	865 MHz ... 870 MHz
Antenna gain	8.5 dBic @ 866 MHz
Max. radiated power	(ETSI EN 302 208) 2 W ERP

Identification	Part number	Drawing	Dimensions in mm
UHF Wide range antenna Ha-VIS RF-ANT-WR30-EU EU version	20 93 201 0102		

Ha-VIS RF-ANT-WR80-30 - Introduction and features



Ruggedized UHF Wide range antenna
Ha-VIS RF-ANT-WR80-30

General description

Features

- UHD RFID wide range antenna
- Reading range up to 16 m (depending upon tag properties, environment and requirements)
- Compact design for ruggedized environmental applications
- Optimized for portal applications
- Different half power beam widths in azimuth and elevation plane
- Suitable for industrial environments
- High IP 65 protection class
- Suitable for outdoor usage

Advantages

Application fields

- Smart infrastructure
- Gate applications
- Asset management

Ha-VIS RF-ANT-WR80-30

Technical characteristics

Polarization	circular
Axial ratio	< 2 dB
VSWR	< 1.2:1
Impedance	50 Ohm
Front-to-back ratio	>20 dB
Half-power beam width	30° vertical 70° horizontal
Connection	N (female)
Protection class	IP 65
Weight	approx. 3.7 kg
Dimensions (WxDxH)	557 x 262 x 59 mm
Material	
Antenna cover	fiberglass radome (UV resistance), gray
Chassis	stainless steel
Plate patch	brass tin-plated
Gasket	thermoplastic elastomer
Installation	four M5 drill holes 100 x 100 mm
Temperature range	
storage	-40 °C … +85 °C
ambient	-20 °C … +65 °C

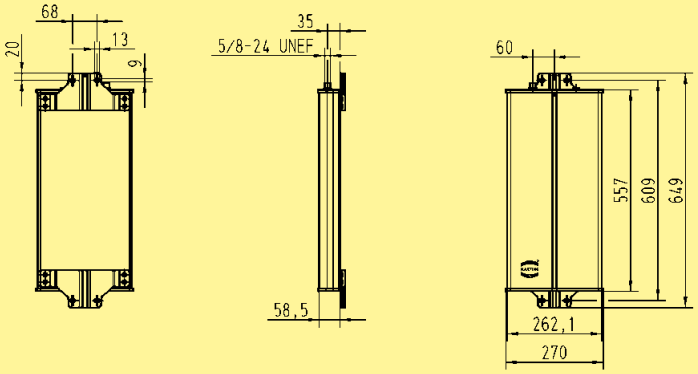
Ha-VIS RF-ANT-WR80-30



Ruggedized UHF Wide range antenna
Ha-VIS RF-ANT-WR30-EU

Technical characteristics

Frequency range	865 MHz ... 870 MHz
Antenna gain	11.0 dBic
Max. radiated power	(ETSI EN 302 208) 2 W ERP

Identification	Part number	Drawing	Dimensions in mm
Ruggedized UHF Wide range antenna Ha-VIS RF-ANT-WR80-30-EU EU version	20 93 201 0203		

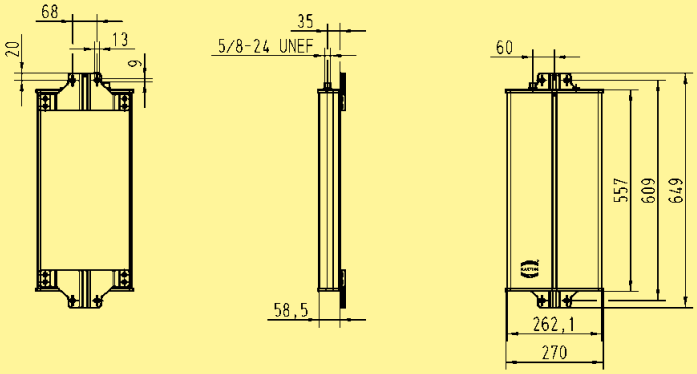
Ha-VIS RF-ANT-WR80-30



Ruggedized UHF Wide range antenna
Ha-VIS RF-ANT-WR30-US

Technical characteristics

Frequency range	902 MHz ... 928 MHz
Antenna gain	10.5 dBic
Max. input power (FCC 15.247)	700 mW (28.5 dBm) conducted for a max. radiated power of 4 W EIRP

Identification	Part number	Drawing	Dimensions in mm
Ruggedized UHF Wide range antenna Ha-VIS RF-ANT-WR80-30-US US version	20 93 201 0204		

CONTENTS

		PAGE
Ha-VIS RFID Antenna cables		
	Ha-VIS Coax, SMA-TNC, RG58	C·4 2
	Ha-VIS Coax, SMA-TNC, LL240flex	C·4 3
	Ha-VIS Coax, SMA-N, LL240flex	C·4 4
	Ha-VIS Coax, TNC-N, RG213	C·4 5
Accessories		C·4 6

Antenna cables

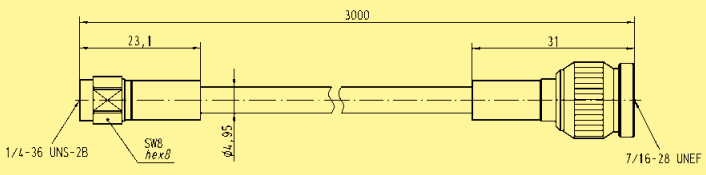


Ha-VIS Coax, SMA-TNC, RG58

Low cost coax cable, left side TNC connector, right side SMA connector

IP 20 ❐	IP 65 / IP 67 ❐	IP 65 / IP 67 to IP 20 ❐	Cat. 5 ❐	Cat. 6 ❐

Connector types	left side TNC connector, right side SMA connector
Sheath material	PE, Black
Outer diameter	4.95 mm
Cable weight	35 kg/km
Minimum bend radius (single bend)	25 mm
Operating temperature range	-20 °C … +70 °C
Impedance	50 Ohm
Attentuation	63 dB/100 m @ 800MHz (depending on application and environmental conditions)
Standard lengths	3 m
Colour	Black

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS Coax, SMA-TNC, RG58 Length 3.0 m	Black 20 93 204 0101		

Antenna cables



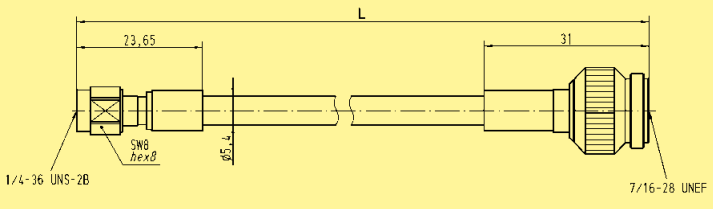
Ha-VIS Coax, SMA-TNC, LL240 flex

Low loss coax cable, left side TNC connector, right side SMA connector

IP 20 ❐	IP 65 / IP 67 ❐	IP 65 / IP 67 to IP 20 ❐	Cat. 5 ❐	Cat. 6 ❐

Connector types	left side TNC connector, right side SMA connector
Sheath material	PE, Black
Outer diameter	5.4 ± 0.2 mm
Cable weight	39 kg/km
Minimum bend radius (single bend)	35 mm
Operating temperature range	-40 °C … +80 °C
Impedance	50 Ohm
Screening effectiveness	> 75 dB (30 ... 1000 MHz)
Attentuation	28 dB/100 m @ 800MHz (depending on application and environmental conditions)
Standard lengths	3 m / 10 m
Colour	Black

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS Coax, SMA-TNC, LL240flex	Black		
Length 3.0 m	20 93 204 0102		
Length 10.0 m	20 93 204 0103		



Antenna cables



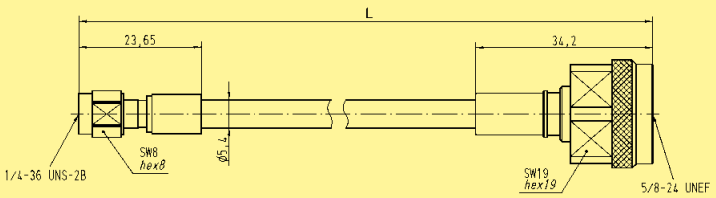
Ha-VIS Coax, SMA-N, LL240 flex

Low loss coax cable, left side N connector, right side SMA connector

IP 20 ❐	IP 65 / IP 67 ❐	IP 65 / IP 67 to IP 20 ❐	Cat. 5 ❐	Cat. 6 ❐

Connector types	left side N connector, right side SMA connector
Sheath material	PE, Black
Outer diameter	5.4 ± 0.2 mm
Cable weight	39 kg/km
Minimum bend radius (single bend)	35 mm
Operating temperature range	-40 °C … +80 °C
Impedance	50 Ohm
Screening effectiveness	> 75 dB (30 ... 1000 MHz)
Attentuation	28 dB/100 m @ 800MHz (depending on application and environmental conditions)
Standard lengths	3 m / 10 m
Colour	Black

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS Coax, SMA-N, LL240flex	Black		
Length 3.0 m	20 93 204 0104		
Length 10.0 m	20 93 204 0105		



Antenna cables



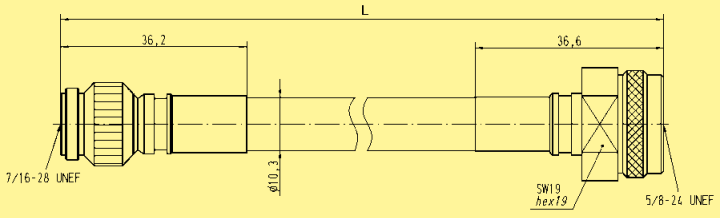
Ha-VIS Coax, TNC-N, RG213

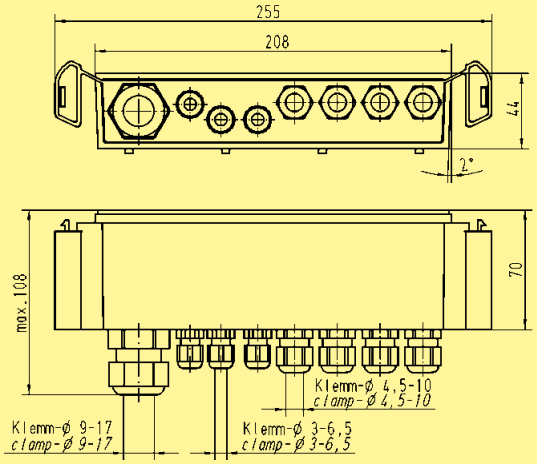
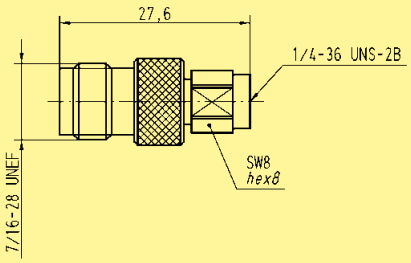
Low loss ruggedized coax cable, left side N connector, right side TNC connector

IP 20 ❐	IP 65 / IP 67 ❐	IP 65 / IP 67 to IP 20 ❐	Cat. 5 ❐	Cat. 6 ❐

Connector types	left side N connector, right side TNC connector
Sheath material	PVC, Black
Outer diameter	10.3 ± 0.2 mm
Cable weight	161.7 kg/km
Minimum bend radius (single bend)	35 mm
Operating temperature range	-55 °C … +85 °C
Impedance	50 Ohm
Screening effectiveness	> 55 dB (100 ... 900 MHz)
Attentuation	22 dB/100 m @ 800MHz (depending on application and environmental conditions)
Standard lengths	3 m / 10 m
Colour	Black
Optional accessory	SMA-TNC adapter, necessary to connect to Ha-VIS RF-R500

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS Coax, TNC-N, RG213	Black		
Length 3.0 m	20 93 204 0106		
Length 10.0 m	20 93 204 0107		



Identification	Part number	Drawing	Dimensions in mm
DIN rail Mounting kit Mounting kit for Ha-VIS RF-R500 for easy mounting on a DIN rail Inclusive necessary screws 	20 93 102 0201		
Protection cap for Ha-VIS RF-R500 Protection cap for increased degree of protection from IP 53 to IP 64 Easy assembly PG openings for different cable diameters	20 93 901 0101		
Adapter SMA-TNC necessary adapter to connect Ha-VIS coax RG213 cords to the Ha-VIS RF-R500	20 93 204 0301		

TradeElectronics.ru

гарантия бесперебойности производства и качества выпускаемой продукции

О компании

ООО "ТрейдЭлектроникс" - это оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов. Реализуемая нашей компанией продукция насчитывает более полумиллиона наименований.

Благодаря этому наша компания предлагает к поставке практически не ограниченный ассортимент компонентов как оптовыми, мелкооптовыми партиями, так и в розницу.

Наличие собственной эффективной системы логистики обеспечивает надежную поставку продукции по конкурентным ценам в точно указанные сроки.

Срок поставки со стоков в **Европе и Америке – от 3 до 14 дней.**

Срок поставки из **Азии – от 10 дней.**

Благодаря развитой сети поставщиков, помогаем в поиске и приобретении экзотичных или снятых с производства компонентов.

Предоставляем спец цены на элементы для создания инженерных сэмплов.

Упорный труд, качественный результат дают нам право быть уверенными в себе и надежными для наших клиентов.

Наша компания это:

- Гарантия качества поставляемой продукции
- Широкий ассортимент
- Минимальные сроки поставок
- Техническая поддержка
- Подбор комплектации
- Индивидуальный подход
- Гибкое ценообразование

Наша организация особенно сильна в поставках модулей, микросхем, пассивных компонентов, ксайленсах (XC), EPF, EPM и силовой электроники.

Большой выбор предлагаемой продукции, различные виды оплаты и доставки, позволят Вам сэкономить время и получить максимум выгоды от сотрудничества с нами!

Trade Electronics.ru

гарантия бесперебойности производства и качества выпускаемой продукции

Перечень производителей, продукцию которых мы поставляем на российский рынок



Trade Electronics.ru

гарантия бесперебойности производства и качества выпускаемой продукции

С удовольствием будем прорабатывать для Вас поставки всех необходимых компонентов по текущим запросам для скорейшего выявления групп элементов, по которым сотрудничество именно с нашей компанией будет для Вас максимально выгодным!

С уважением,

Менеджер отдела продаж ООО

«Трейд Электроникс»

Шишлаков Евгений

8 (495)668-30-28 доб 169

manager28@tradeelectronics.ru

http://www.tradeelectronics.ru/