TP9213

1.3 MP Industrial Code Reader

Introduction

TP9213 industrial code reader can read different types of 1D and 2D codes, and its max. reading speed reaches 30 codes/sec. It adopts deep learning algorithm to process images with good robustness, and can recognize various codes.

Applicable Industry

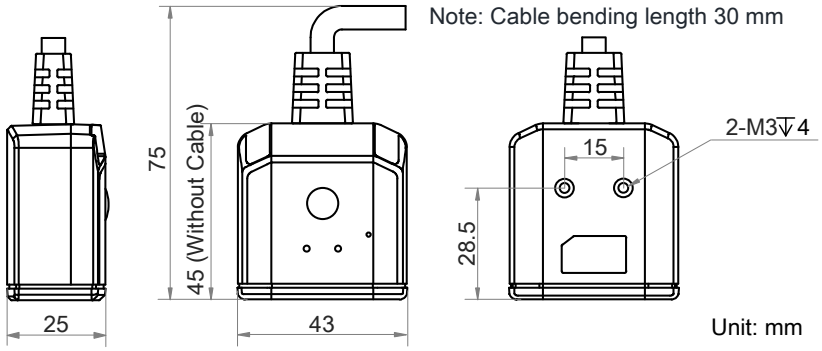
Manual or semi-automated workstation in low-speed and static scenarios, etc.

Key Feature

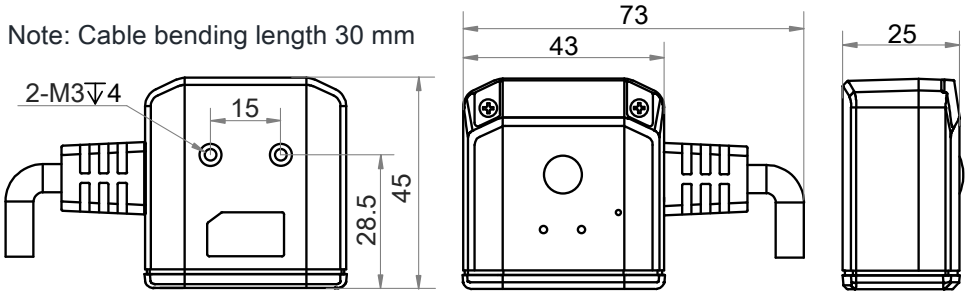
- Built-in deep learning algorithm to read codes with good robustness.
- Compact design and small in size.
- Adopts multiple IO interfaces and plug-in power interface.
- Adopts LED aiming light to help aim codes.
- Adopts buzzer and indicator for indicating device status.
- Supports one-click parameter adjustment for convenient operation.

Dimension

Cable on the bottom



Cable on the side



Specification

Model	TP9213-05-RBN(-U/-S/-SU)	TP9213-05-RBP(-U/-S/-SU)	TP9213-05-WBN(-U/-S/-SU)	TP9213-05-WBP(-U/-S/-SU)
Performance				
Symbologies	1D codes: Code 39, Code 93, Code 128, ITF 14, ITF 25, CodaBar, EAN, UPCA, UPCE			
	2D codes: QR Code, Data Matrix			
Max. frame rate	50 fps			
Max. reading speed	30 codes/sec			
Sensor type	CMOS, global shutter			
Pixel size	2.7 μm × 2.7 μm			
Sensor size	1/4"			
Resolution	1280 × 1024			
Exposure time	60 μs to 0.6 sec			
Gain	1 dB to 28 dB			
Mono/color	Mono			
Communication protocol	Network interface: SmartSDK, TCP Client, Serial, FTP, TCP Server, UDP, Profinet, Ethernet/IP			
	USB interface: SmartSDK, USB (HID, CDC)			
Depth of field*	Code 39 (5 mil): 75 mm to 215 mm Code 128 (10 mil): 50 mm to 400 mm EAN 13 (13 mil): 60 mm to 420 mm QR Code (15 mil): 40 mm to 290 mm Data Matrix (10 mil): 50 mm to 240 mm			
Electrical feature				
Data interface	Network interface: Fast Ethernet (100 Mbit/s), RS-232, DC terminal			
	USB interface: USB 2.0			
Digital I/O	Network interface: DB15 connector provides power and I/O, including non-isolated input × 2 (Line 0/1), non-isolated output × 2 (Line 2/3), RS-232 × 1. USB interface: DB15 connector provides data transmission. Supports device triggering via pressing button on side.			
Power supply	Network interface: 12 VDC to 24 VDC; USB interface: 5 VDC (USB 2.0 provides power supply)			
Max. power consumption	Network interface: 2.5 W @ 12 VDC; USB interface: 2.5 W @ 5 VDC			
Mechanical				
Focal length	4.7 mm			
Lens mount	M5.8-mount			
Ambient illumination	0 lux to 10000 lux			
Light source	Red	Red (polarized)	White	White (polarized)
Aiming system	Green LED			
Indicator	Power indicator (POWER), status indicator (OK/NG)			
Dimension	45 mm × 43 mm × 25 mm (1.8" × 1.7" × 1.0")			
Weight	Approx. 68.5 g (0.2 lb.)			
Ingress protection	IP54			
Temperature	Working temperature: 0 °C to 50 °C (32 °F to 122 °F) Storage temperature: –30 °C to 70 °C (–22 °F to 158 °F)			
Humidity	20% RH to 95% RH (no condensation)			
General				
Client software	IDMVS			
Certification	CE, RoHS, KC			

Specification

Model	TP9213-05H-RBN(-U/-S/-SU)	TP9213-05H-RBP	TP9213-05N-RBN(-U/-S/-SU)	TP9213-05N-RBP
Performance				
Symbologies	1D codes: Code 39, Code 93, Code 128, ITF 14, ITF 25, CodaBar, EAN, UPCA, UPCE			
	2D codes: QR Code, Data Matrix			
Max. frame rate	50 fps			
Max. reading speed	30 codes/sec			
Sensor type	CMOS, global shutter			
Pixel size	2.7 μm × 2.7 μm			
Sensor size	1/4"			
Resolution	1280 × 1024			
Exposure time	60 μs to 0.6 sec			
Gain	1 dB to 28 dB			
Mono/color	Mono			
Communication protocol	Network interface: SmartSDK, TCP Client, Serial, FTP, TCP Server, UDP, Profinet, Ethernet/IP			
	USB interface: SmartSDK, USB (HID, CDC)			
Depth of field*	Code 39 (3 mil): 35 mm to 65 mm Code 39 (5 mil): 30 mm to 75 mm EAN 13 (13 mil): 55 mm to 105 mm Data Matrix (5 mil): 30 mm to 65 mm Data Matrix (10 mil): 25 mm to 90 mm Code 128 (10 mil): 25 mm to 105 mm QR Code (10 mil): 25 mm to 95 mm		Code 39 (3 mil): 45 mm to 90 mm Code 39 (5 mil): 35 mm to 105 mm EAN 13 (13 mil): 50 mm to 125 mm Data Matrix (5 mil): 40 mm to 80 mm Data Matrix (10 mil): 25 mm to 125 mm Code 128 (10 mil): 40 mm to 140 mm QR Code (10 mil): 30 mm to 120 mm	
Electrical feature				
Data interface	Network interface: Fast Ethernet (100 Mbit/s), RS-232, DC terminal			
	USB interface: USB 2.0			
Digital I/O	Network interface: DB15 connector provides power and I/O, including non-isolated input × 2 (Line 0/1), non-isolated output × 2 (Line 2/3), RS-232 × 1. USB interface: DB15 connector provides data transmission. Supports device triggering via pressing button on side.			
Power supply	Network interface: 12 VDC to 24 VDC; USB interface: 5 VDC (USB 2.0 provides power supply)			
Max. power consumption	Network interface: 2.5 W @ 12 VDC; USB interface: 2.5 W @ 5 VDC			
Mechanical				
Focal length	4.7 mm			
Lens mount	M5.8-mount			
Ambient illumination	0 lux to 10000 lux			
Light source	Red	Red (polarized)	Red	Red (polarized)
Aiming system	Green LED			
Indicator	Power indicator (POWER), status indicator (OK/NG)			
Dimension	45 mm × 43 mm × 25 mm (1.8" × 1.7" × 1.0")			
Weight	Approx. 68.5 g (0.2 lb.)			
Ingress protection	IP54			
Temperature	Working temperature: 0 °C to 50 °C; storage temperature: –30 °C to 70 °C			
Humidity	20% RH to 95% RH (no condensation)			
General				
Client software	IDMVS			
Certification	CE, RoHS, KC			

Specification

Model	TP9213-03N-RBN	TP9213-03N-RBP
Performance		
Symbologies	1D codes: Code 39, Code 93, Code 128, ITF 14, ITF 25, CodaBar, EAN, UPCA, UPCE	
	2D codes: QR Code, Data Matrix	
Max. frame rate	50 fps	
Max. reading speed	30 codes/sec	
Sensor type	CMOS, global shutter	
Pixel size	2.7 μm × 2.7 μm	
Sensor size	1/4"	
Resolution	1280 × 1024	
Exposure time	60 μs to 0.6 sec	
Gain	1 dB to 28 dB	
Mono/color	Mono	
Communication protocol	SmartSDK, TCP Client, Serial, FTP, TCP Server, UDP, Profinet, Ethernet/IP	
Depth of field*	Code 39 (5 mil): 40 mm to 120 mm Code 128 (10 mil): 15 mm to 250 mm EAN 13 (13 mil): 30 mm to 280 mm QR Code (10 mil): 35 mm to 155 mm QR Code (15 mil): 15 mm to 215 mm QR Code (20 mil): 15 mm to 270 mm	
Electrical feature		
Data interface	Fast Ethernet (100 Mbit/s), RS-232, DC terminal	
Digital I/O	DB15 connector provides power and I/O, including non-isolated input × 2 (Line 0/1), non-isolated output × 2 (Line 2/3), RS-232 × 1. Supports device triggering via pressing button on side.	
Power supply	12 VDC to 24 VDC	
Max. power consumption	2.5 W @ 12 VDC	
Mechanical		
Focal length	2.45 mm	
Lens mount	M5.4-mount	
Ambient illumination	0 lux to 10000 lux	
Light source	Red	Red (polarized)
Aiming system	Green LED	
Indicator	Power indicator (POWER), status indicator (OK/NG)	
Dimension	45 mm × 43 mm × 25 mm (1.8" × 1.7" × 1.0")	
Weight	Approx. 68.5 g (0.2 lb.)	
Ingress protection	IP54	
Temperature	Working temperature: 0 °C to 50 °C (32 °F to 122 °F) Storage temperature: –30 °C to 70 °C (–22 °F to 158 °F)	
Humidity	20% RH to 95% RH (no condensation)	
General		
Client software	IDMVS	
Certification	CE, RoHS, KC	

**Test condition: Environment temperature=25 °C (77 °F), ambient illumination=250 lux filament lamp, sample symbologies are used.*

Available Model

- 4.7 mm focal length, standard distance, red light, network interface: TP9213-05-RBN
- 4.7 mm focal length, standard distance, red light (polarized), network interface: TP9213-05-RBP
- 4.7 mm focal length, standard distance, white light, network interface: TP9213-05-WBN
- 4.7 mm focal length, standard distance, white light (polarized), network interface: TP9213-05-WBP
- 4.7 mm focal length, standard distance, red light, USB interface: TP9213-05-RBN-U
- 4.7 mm focal length, standard distance, red light (polarized), USB interface: TP9213-05-RBP-U
- 4.7 mm focal length, standard distance, white light, USB interface: TP9213-05-WBN-U
- 4.7 mm focal length, standard distance, white light (polarized), USB interface: TP9213-05-WBP-U
- 4.7 mm focal length, high density, red light, network interface: TP9213-05H-RBN
- 4.7 mm focal length, high density, red light (polarized), network interface: TP9213-05H-RBP
- 4.7 mm focal length, high density, red light, USB interface: TP9213-05H-RBN-U
- 4.7 mm focal length, near distance, red light, network interface: TP9213-05N-RBN
- 4.7 mm focal length, near distance, red light (polarized), network interface: TP9213-05N-RBP
- 4.7 mm focal length, near distance, red light, USB interface: TP9213-05N-RBN-U
- 4.7 mm focal length, standard distance, red light, side cable, network interface: TP9213-05-RBN-S
- 4.7 mm focal length, standard distance, red light (polarized), side cable, network interface: TP9213-05-RBP-S
- 4.7 mm focal length, standard distance, red light, side cable, USB interface: TP9213-05-RBN-SU
- 4.7 mm focal length, standard distance, red light (polarized), side cable, USB interface: TP9213-05-RBP-SU
- 4.7 mm focal length, high density, red light, side cable, network interface: TP9213-05H-RBN-S
- 4.7 mm focal length, high density, red light, side cable, USB interface: TP9213-05H-RBN-SU
- 4.7 mm focal length, near distance, red light, side cable, network interface: TP9213-05N-RBN-S
- 4.7 mm focal length, near distance, red light, side cable, USB interface: TP9213-05N-RBN-SU
- 2.45 mm focal length, near distance, red light, network interface: TP9213-03N-RBN
- 2.45 mm focal length, near distance, red light (polarized), network interface: TP9213-03N-RBP

Detection Range

Focal Length (mm)	Working Distance (mm	Field of View		1D Min. Resolution (mm)*	2D Min. Resolution (mm)△
		H (mm)	V (mm)		
2.45	120	163	130	0.12	0.29
4.7	120	89	72	0.07	0.278

Note

- 1D Min. Resolution (mm)*: Field of view (long side) / resolution (long side) × number of pixels in the minimum bar width (number of pixels in the minimum bar width = 1)
- 2D Min. Resolution (mm)△: Field of view (long side) / resolution (long side) × number of pixels in the side length of minimum module unit (number of pixels in the side length of minimum module unit = 3)
- The integrated cable of the device is a static cable by default that cannot be used in moving scene, such as drag chain. Therefore, it is recommended to fix the cable during installation.