

Advantage[®] 182 Series Integrator's Guide



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Precautions

To reduce the risk of injury or equipment damage, observe the following precautions when you install the Cognex product:

- Connectivity is possible through 24 V DC (+10%) output connection using a UL or NTRL listed power supply. Any other voltage creates a risk of fire or shock and can damage the components. Applicable national and local wiring standards and rules must be followed.
- This product is intended for industrial use in automated manufacturing or similar applications.
- The safety of any system incorporating this product is the responsibility of the assembler of the system.
- Do not install Cognex products where they are exposed to environmental hazards such as excessive heat, dust, moisture, humidity, impact, vibration, corrosive substances, flammable substances, or static electricity.
- Route cables and wires away from high-current wiring or high-voltage power sources to reduce the risk of damage or malfunction from the following causes: over-voltage, line noise, electrostatic discharge (ESD), power surges, or other irregularities in the power supply.
- Do not expose the image sensor to laser light. Image sensors can be damaged by direct, or reflected, laser light. If your application requires laser light that might strike the image sensor, use a lens filter at the corresponding laser wavelength. For suggestions, contact your local integrator or application engineer.
- This product does not contain user-serviceable parts. Do not make electrical or mechanical modifications to product components. Unauthorized modifications can void your warranty.
- Changes or modifications not expressly approved by the party responsible for regulatory compliance could void the user's authority to operate the equipment.
- Include service loops with cable connections.
- Ensure that the cable bend radius begins at least six inches from the connector. Cable shielding can be degraded or cables can be damaged or wear out faster if a service loop or bend radius is tighter than 10X the cable diameter.
- This device should be used in accordance with the instructions in this manual.
- All specifications are for reference purposes only and can change without notice.

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Product Overview

The Advantage 182 devices are compact smart cameras with integrated lighting.



There are two product variants: Advantage 182 RJ45 (left) and Advantage 182 USB-C (right).

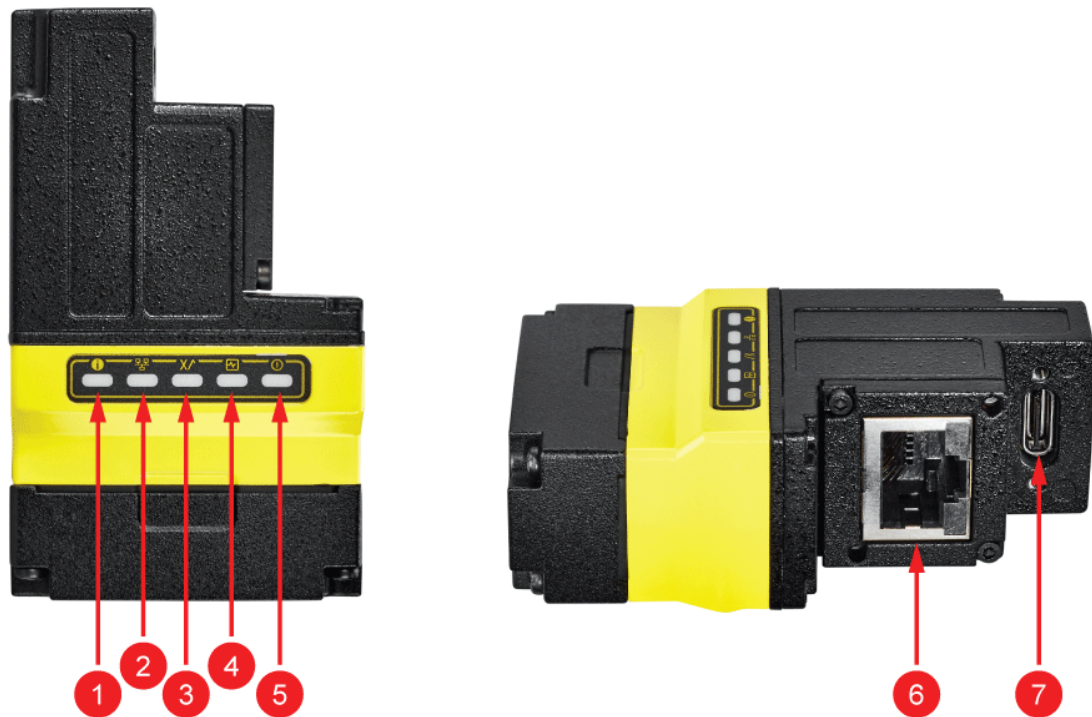
Communication Options

Connector	Function	Notes
USB-C	Power	You can use any USB-C connection to power the Advantage 182. The USB-C – DB15 Cognex Serial IO cable allows you to connect the Advantage 182 to a power supply of up to 24 V while using the pins of the USB-C connector for Input/Output signals and serial communication.
	Ethernet over USB	The reader communicates on the USB-C port using the Ethernet over USB communication protocol. After you connect the USB cable of the camera to the host PC, a new Ethernet adapter appears, similarly to when you connect a USB-to-Ethernet adapter to PC. Required drivers: - Windows: Remote NDIS driver. - Linux: cdc_ether driver. <i>ⓘ</i> Note: No additional driver installation is needed for Windows 10/11, and for common Linux operating systems.
	Serial RS-232	Serial communication is only available with the USB-C – DB15 Cognex Serial IO cable.
RJ45 (RJ45 variant only)	Ethernet 10/100/1000	Configure the device through Ethernet connection with a PC running In-Sight Vision Suite software. <i>ⓘ</i> Note: Advantage 182 RJ45 does not support Power over Ethernet. Connecting your device to a PoE network can cause damage to the device.

ⓘ **Note:** If you connect both the USB-C and RJ45 ports of an RJ45 device to a host, the reader boots up with two active network ports.

Reader Layouts

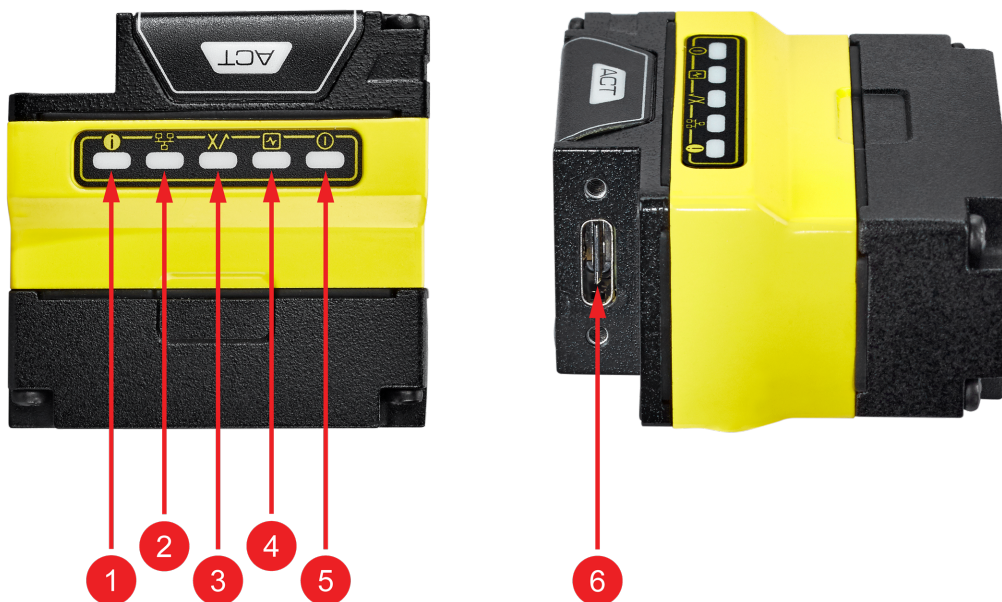
Advantage 182 RJ45 Layout



Number	Description
1	Error LED indicator
2	Communication LED indicator
3	Pass/Fail LED indicator
4	Train status/Trigger status LED indicator
5	Power LED indicator
6	RJ-45 Ethernet connector
7	USB-C connector

Note: For more information on LED functions, see the *Status LEDs* section in [Communication Interfaces on page 26](#).

Advantage 182 USB-C Layout



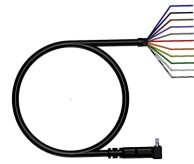
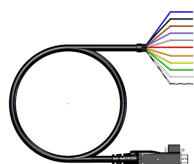
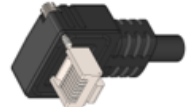
Number	Description
1	Error LED indicator
2	Communication LED indicator
3	Pass/Fail LED indicator
4	Train status/Trigger status LED indicator
5	Power LED indicator
6	USB-C connector

Note: For more information on LED functions, see the *Status LEDs* section in [Communication Interfaces on page 26](#).

Accessories

The following accessories are compatible with the Advantage 182. For more information, contact your local Cognex sales representative.

Cables

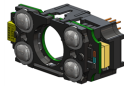
Accessory	Product Number	Illustration
USB-C - DB15 Cognex Serial IO cable, right angle, 0.5 m, Power	CCB-PIO-DB15-05RA	
USB-C - DB15 Cognex Serial IO cable, straight, 0.5 m, Power	CCB-PIO-DB15-05ST	
USB-C - Flying lead Cognex Serial IO cable, right angle, 2.5 m, Power	CCB-PIO-FL-25RA	
USB-C - Flying lead Cognex Serial IO cable, straight, 2.5 m, Power	CCB-PIO-FL-25ST	
DB15 - USB-A adapter cable, 1.5 m, Power	DM100-USB-000	
USB-C - USB-A right angle cable, 2.5 m, Power	DMA-RTCBLE-IP65-25	
USB-C - USB-A straight cable, 2.5 m, Power	DMA-STCBLE-IP65-25	
RJ45 - RJ45 right angle cable, 2 m	CCB-ETH-RJ45-2RA	

Mounting

Accessory	Product Number	Illustration
Universal mounting bracket	DM100-UBRK-000	

For creating custom mounting solutions, refer to the mounting hole positions in [Dimensions on page 19](#).

Illumination

Accessory	Product Number	Illustration
Red LED Light	280-STD-LED-RED	
White LED Light	280-STD-LED-WHT	
Blue LED Light	280-STD-LED-BLU	
Front Cover Assembly, Clear	280-STD-COVCLR	
Front Cover Assembly, Polarized	280-STD-COVPOL	
Front Cover Assembly, Diffuse	280-STD-COVDIF	

The below accessories cannot be purchased separately.

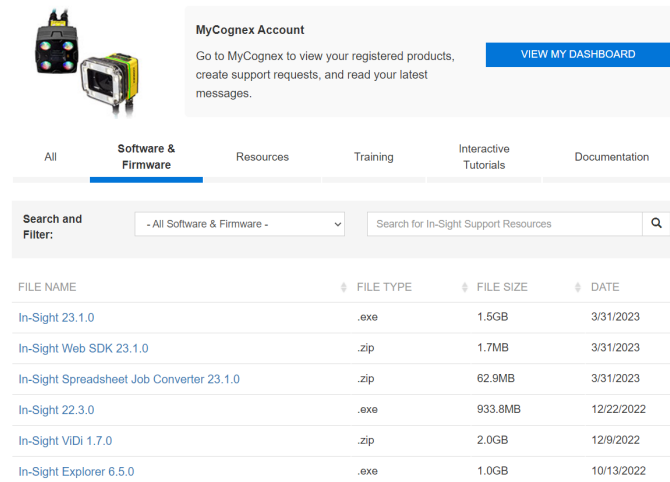
Accessory	Illustration
High Speed Liquid Lens	
Red Bandpass Filters	
Blue Bandpass Filters	

Getting Started

Setting up the Reader

1. Install In-Sight Vision Suite.
 - a. Go to <https://support.cognex.com/en/downloads/in-sight> and select **Software & Firmware**.
 - b. Find the installer that matches the firmware version of your Advantage device. For example: In-Sight 23.1.0.

IN-SIGHT SUPPORT



MyCognex Account
Go to MyCognex to view your registered products, create support requests, and read your latest messages. [VIEW MY DASHBOARD](#)

Navigation tabs: All, **Software & Firmware**, Resources, Training, Interactive Tutorials, Documentation

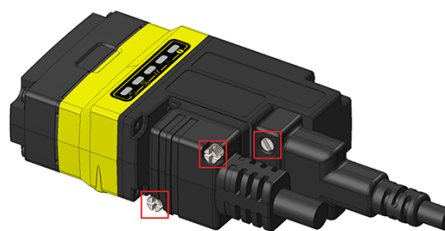
Search and Filter: - All Software & Firmware - Search for In-Sight Support Resources

FILE NAME	FILE TYPE	FILE SIZE	DATE
In-Sight 23.1.0	.exe	1.5GB	3/31/2023
In-Sight Web SDK 23.1.0	.zip	1.7MB	3/31/2023
In-Sight Spreadsheet Job Converter 23.1.0	.zip	62.9MB	3/31/2023
In-Sight 22.3.0	.exe	933.8MB	12/22/2022
In-Sight ViDi 1.7.0	.zip	2.0GB	12/9/2022
In-Sight Explorer 6.5.0	.exe	1.0GB	10/13/2022



Tip: To find the latest In-Sight installer, sort the list by clicking the arrow pointing downwards next to DATE.

- c. Download and install the software.
2. Connect the cables.
 - a. Connect both the USB-C and the Ethernet cable to the device, and secure the cable screws.



- b. Plug in the other end of the Ethernet cable to your network switch or host machine.
- c. Connect the host end of the USB-C cable to the power supply. You can power the device in the following ways:
 - Using a USB-C cable connected to a USB-A or USB-C port.
 - Using the USB-C – DB-15 Cognex Serial IO cable:
 - i. Connect the power supply to pin 5 of the DB-15 connector.
 - ii. Use a DB-15 – USB-A adapter cable and connect it to a USB-A port.

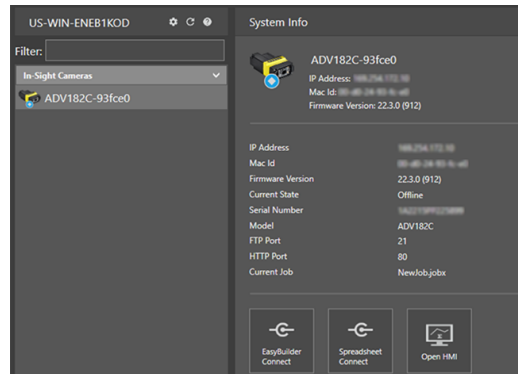
3. Connect the device to In-Sight Vision Suite.

- a. Launch In-Sight Vision Suite.
- b. Locate your Advantage device on the left side of the window. The device name conforms to the following:

<Camera model><Mono/Color>-<last six characters of the MAC address>

For example: ADV182C-93fce0

- c. Click on the camera to see the **System Info** tab.



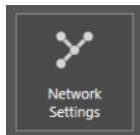
Troubleshooting: The device does not appear in In-Sight Vision Suite.

Probable Cause	Solution
The Advantage device has static IP address, which does not reside on the same subnet as the PC running In-Sight Vision Suite.	Click on the cog icon to access Settings, go to Device Discovery , and enable the Discover Misconfigured Devices option.

Configure Network Settings

Set Up the Static IP Address of Your Camera

1. Select your reader and open **Network Settings**.



2. For **Address Assignment** select **Static**. Enter the **IP Address** and the **Subnet Mask**.

A screenshot of a "Network Configuration" dialog box for device "ADV182-93FCB0". The dialog has a title bar with a close button. Inside, it says "Set network configuration on ADV182-93FCB0". There are several input fields: "Host Name" (filled with "ADV182-93FCB0"), "Address Assignment" (with radio buttons for "Auto (DHCP)" and "Static", where "Static" is selected and highlighted with a red box), "IP Address" (with a red box around the input field containing "192.168.0.10"), "Subnet Mask" (filled with "255.255.255.0"), "Default Gateway" (empty), "DNS Server" (empty), and "Domain Name" (empty). At the bottom, there is a "Copy PC Network Settings" button and "OK" and "Cancel" buttons.

You can leave the **Default Gateway**, **DNS Server**, and **Domain Name** fields blank. Optionally, you can change the **Host Name**. When ready, click **OK**.

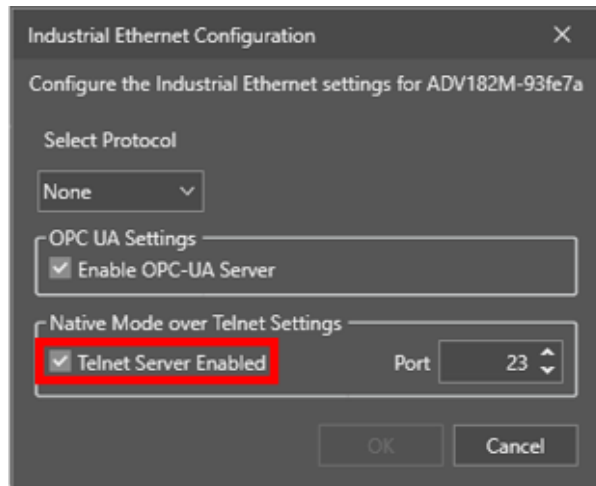
Note: The reader and the host PC need to be on the same subnet. For example, if the PC settings are: 192.168.0.10/255.255.255.0 a valid camera setting could be: 192.168.0.50/255.255.255.0.

Enable Telnet

1. Click **Industrial Ethernet**.

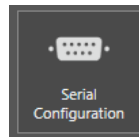


2. Check the **Telnet Server Enabled** checkbox.

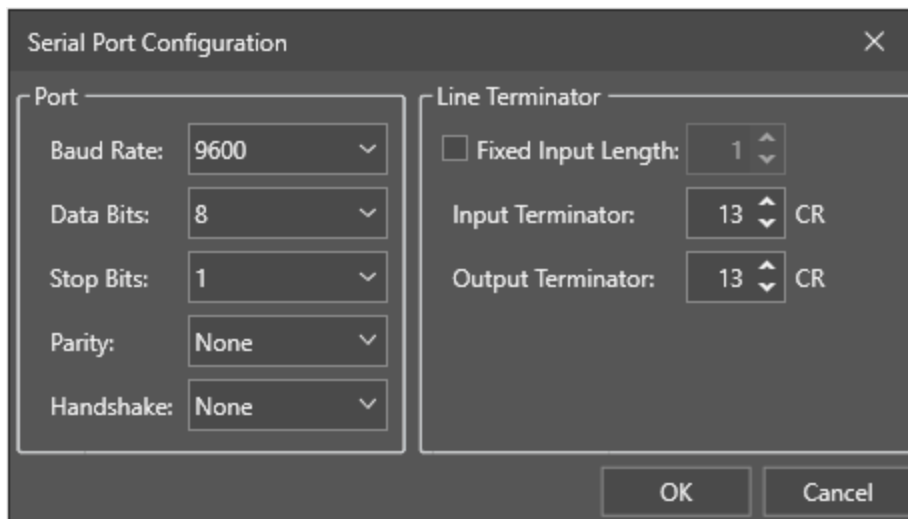


Configure Serial Communication

1. Ensure that your reader is connected with the USB-C – DB15 Cognex Serial IO cable.
2. Select your reader and open **Serial Configuration**.

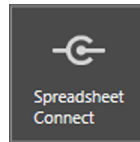


3. Set the properties in the **Serial Port Configuration** window.

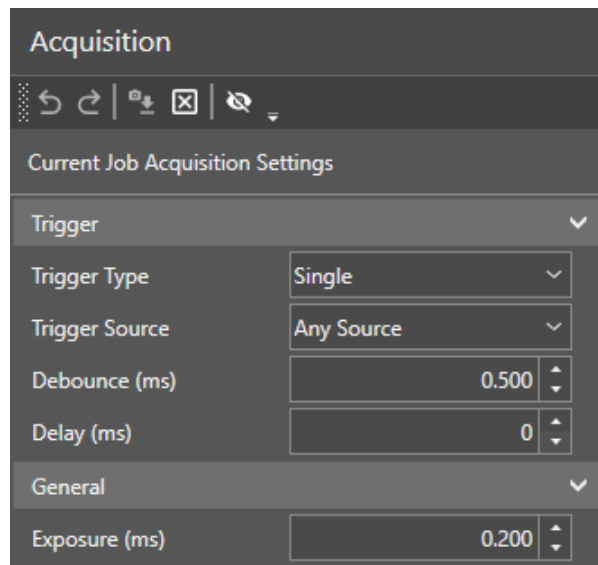


Develop a Job File

1. Access the Spreadsheet editor by clicking on the **Spreadsheet Connect** button.



2. Adjust the trigger settings (for example trigger type and exposure value) by clicking on the **Acquisition** tab on the bottom right side of the screen.

A screenshot of a software interface showing the "Acquisition" settings panel. The panel has a dark gray header with the title "Acquisition" and a close button. Below the header is a toolbar with icons for undo, redo, save, and other functions. The main area is titled "Current Job Acquisition Settings" and contains two expandable sections. The "Trigger" section is expanded, showing settings for "Trigger Type" (set to "Single"), "Trigger Source" (set to "Any Source"), "Debounce (ms)" (set to 0.500), and "Delay (ms)" (set to 0). The "General" section is also expanded, showing "Exposure (ms)" set to 0.200. Each setting is in a dark gray box with a white label and a white value or dropdown arrow.

3. Set up the correct exposure.

Note: If the image is not sharp enough you can adjust the focus distance of an unglued development camera by following the steps in [Adjusting Focus Distance on page 38](#).

Make sure to minimize highlight and black clipping. You can check this by clicking on the **Show Image Saturation** button:



The system marks oversaturated pixels as follows:

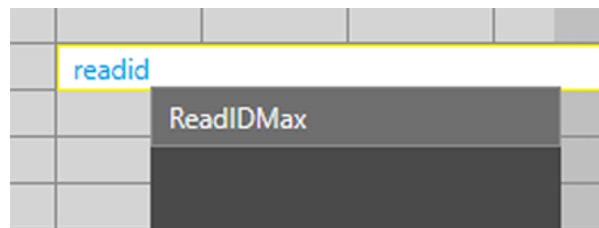
- Red means clipping in the highlights.
- Blues means clipping in the shadows.

A well-balanced image shows little to no clipping:

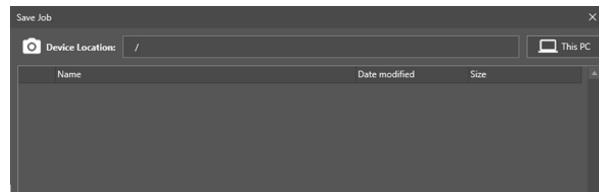


Note: Make sure to avoid clipping in highlights in particular, as this can decrease performance significantly, especially in barcode reading applications.

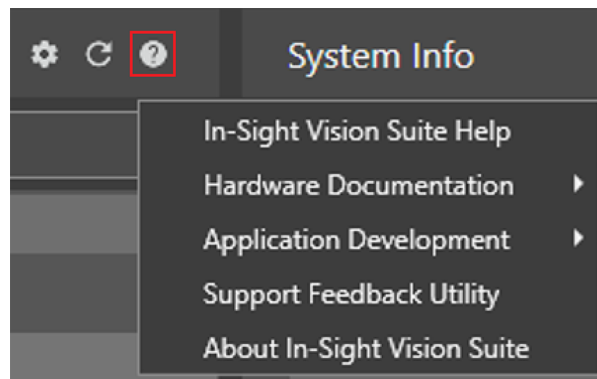
4. Develop your job file by adding tools. You can drag and drop tools from the **Functions** tab, or access them by typing the name of the tool in a cell.



5. Save the job file on the Advantage device or the host PC.



For more information, click on the **Help** icon on the main screen of the In-Sight Vision Suite and open the *In-Sight Spreadsheet Help* document under **Application Development**, or contact your Cognex representative.



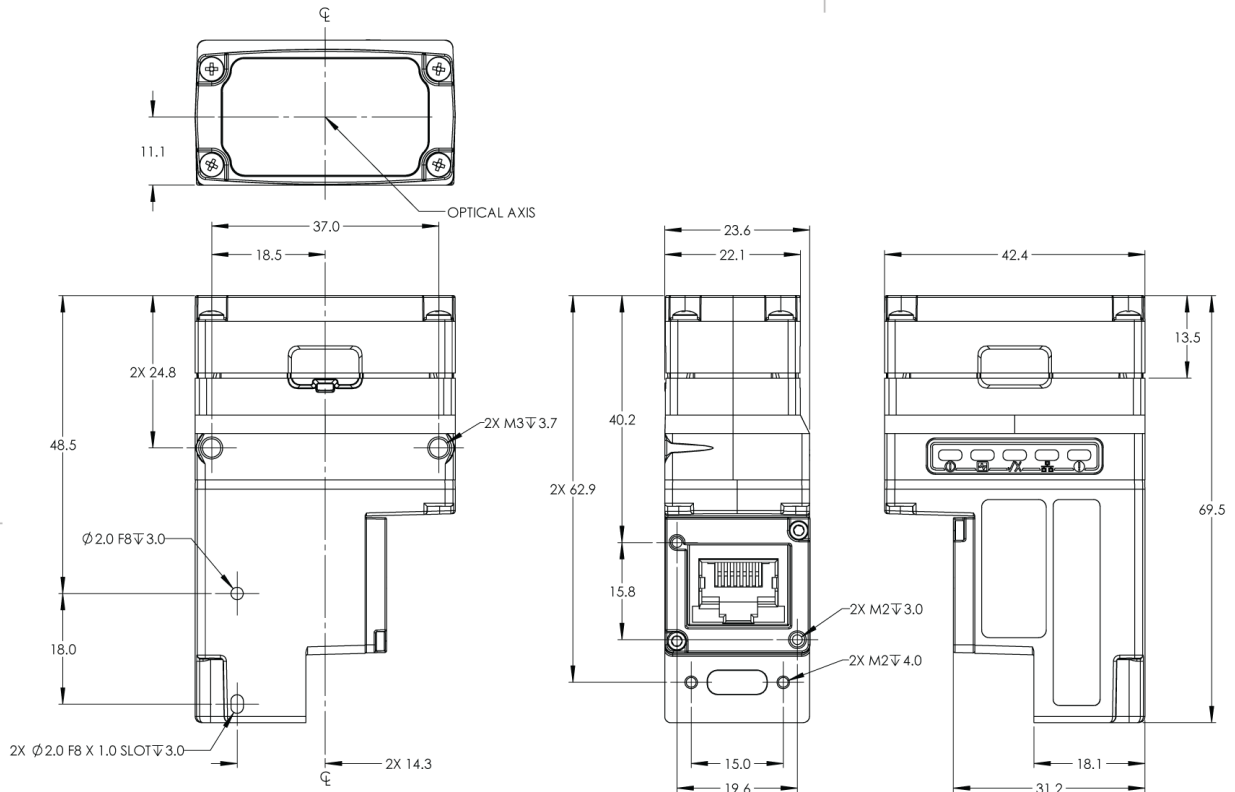
Mechanical Information

The following sections provide mechanical information for the Advantage 182.

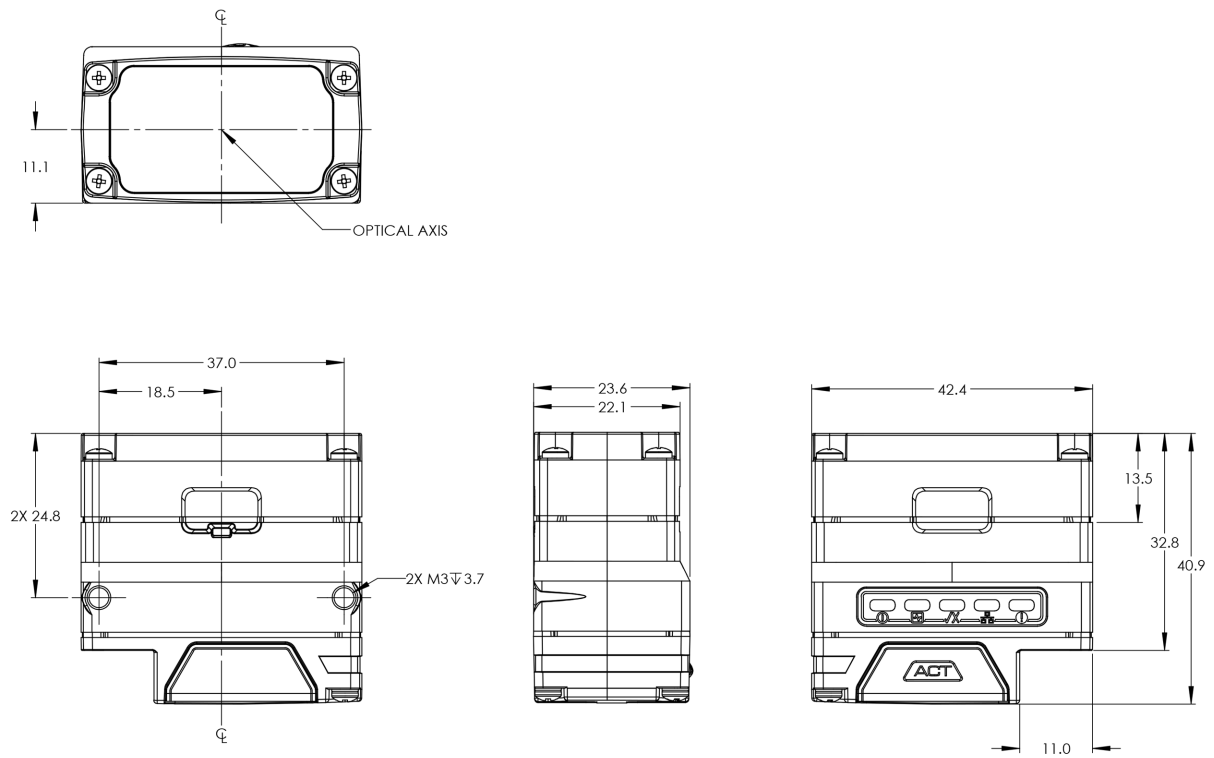
Dimensions

The figures show the dimensions for the two Advantage 182 variants in millimeters.

Advantage 182 RJ45



Advantage 182 USB-C

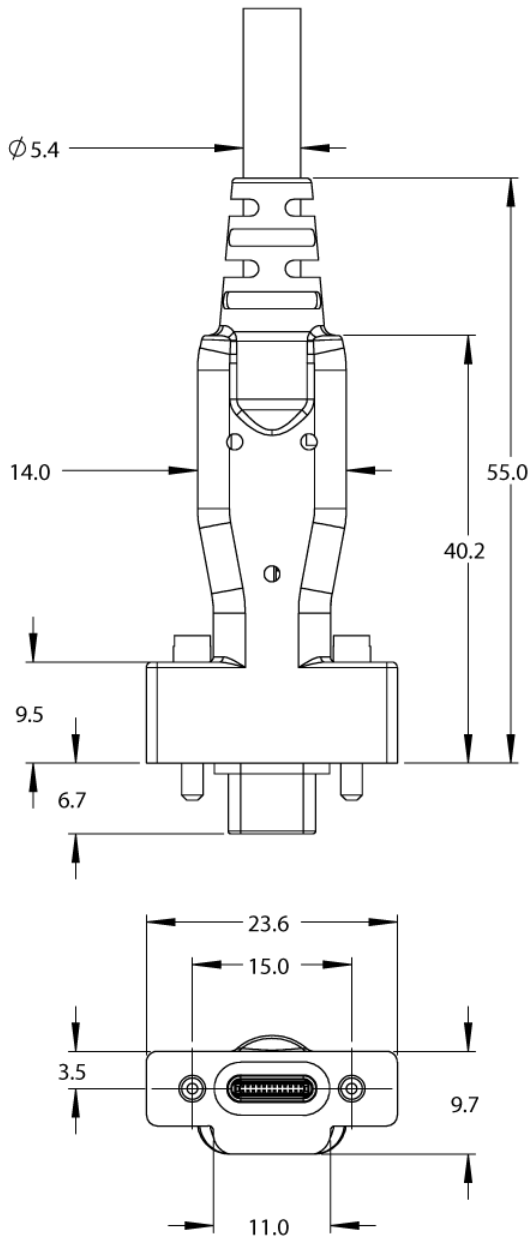


USB-C Connector Dimensions

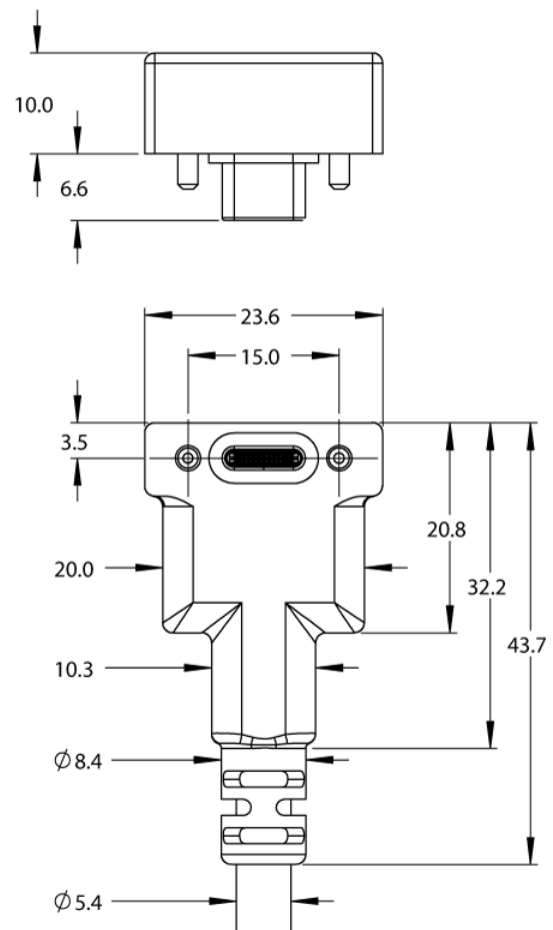
Advantage 182 uses USB-C connectors in straight and right-angled variants.

The following images show the dimensions for the USB-C connectors in millimeters:

Straight:



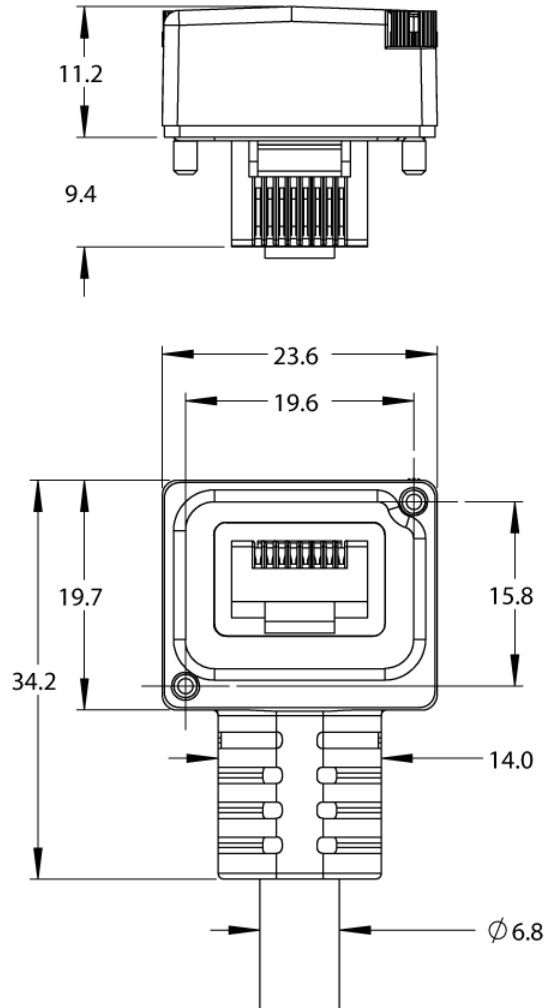
Right-angled:



RJ-45 Connector Dimensions

Advantage 182 uses a right-angled RJ-45 connector.

The following image shows the dimensions for the RJ-45 connector in millimeters:



Electrical Information

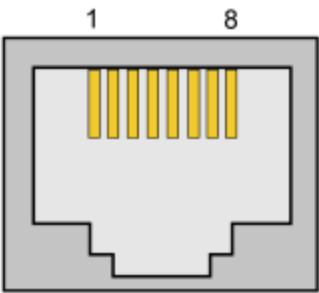
This section provides information on the electrical characteristics of the Advantage 182 devices. You can power the device using the following options:

- USB-C – DB15 Cognex Serial IO cable
- USB-C – Flying lead Cognex Serial IO cable
- USB-C – USB-A cable
- USB-C – USB-C cable

Connectors

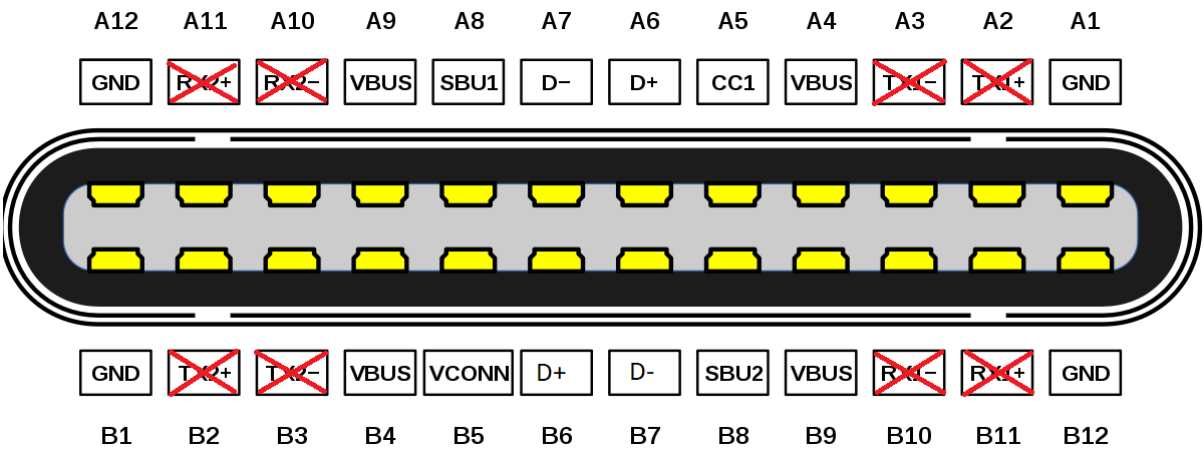
Ethernet

Standard RJ-45 connector. RJ-45 variant only.



USB-C Connector

The pin definition is the following:



Pin Number Pair	Definition
A1, B1	GND
A2, B2	Reserved

Pin Number Pair	Definition
A3, B3	Reserved
A4, B4	VBUS
A5	CC1
A6, B6	D+
A7, B7	D-
A8	SBU1
A9, B9	VBUS
A10, B10	Reserved
A11, B11	Reserved
A12, B12	GND
B5	VCONN
B8	SBU2

Power Characteristics

The Advantage 182 RJ45 and the Advantage 182 USB-C can only get power through a USB-C type connector.

Power supply voltage range:

- **USB-C cable** (either Cognex or 3rd party): 4.75 V – 5.25 V (USB 2.0 standard).
- **USB-C – DB15 Cognex Serial IO cable:**
 - VEXT pin of the DB15 connector: 5.5V – 24V (+10%)
 - VUSB pin of the DB15 connector: 4.75V – 5.25V (USB 2.0 standard)

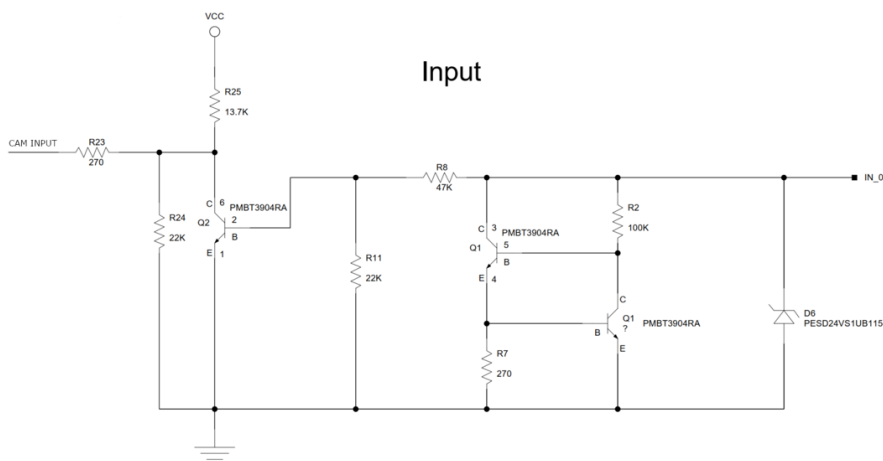
The power consumption of the Advantage182 depends on the supply voltage, as shown in the following table:

Cable	Power Supply	Power Consumption				
		Active (triggering)			Boot-up	
		In-rush (spike)	Average	Idle	In-rush (spike)	Spike width
USB-C - DB15	24 V	167 mA	92.4 mA	69.6 mA	300 mA	840 µs
	12 V	266 mA	186 mA	136 mA	148 mA	1.39 ms
	6 V	514 mA	380 mA	258 mA	378 mA	232 µs
USB-C - USB-A	5 V	550 mA	398 mA	274 mA	350 mA	430 µs

Communication Interfaces

Digital Input Lines

The following figure shows a simplified block diagram of Input_0 of the Advantage 182 device. Inputs are not galvanic isolated, but need to be referenced to ground.



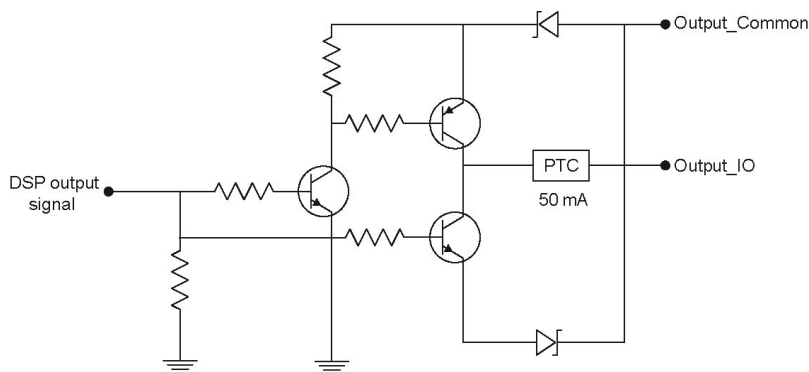
Trigger Input Characteristics	
Polarity	Rising edge
User selectable polarity	Rising or falling edge
Voltage level	3V - Supply voltage
Minimum pulse width	10μs
Input current	<1mA

Note: The input functionality only operates with a USB-C – DB15 Cognex Serial IO cable.

Digital Output Lines

The digital outputs can be used as either NPN (pull-down) or PNP (pull-up) lines. For NPN lines, connect the external load between the output and the positive supply voltage (<24 V). The outputs pull down to less than 3 V when ON, which causes current to flow through the load. When the outputs are OFF, no current flows through the load. Outputs are not galvanic isolated, but need to be referenced to ground.

The following figure shows a simplified block diagram of the Advantage182 device Sink/Source Output_0 and Output_1:



Note: The output functionality only operates with a USB-C – DB15 Cognex Serial IO cable.

NPN (Pull Down) Output Type Characteristics

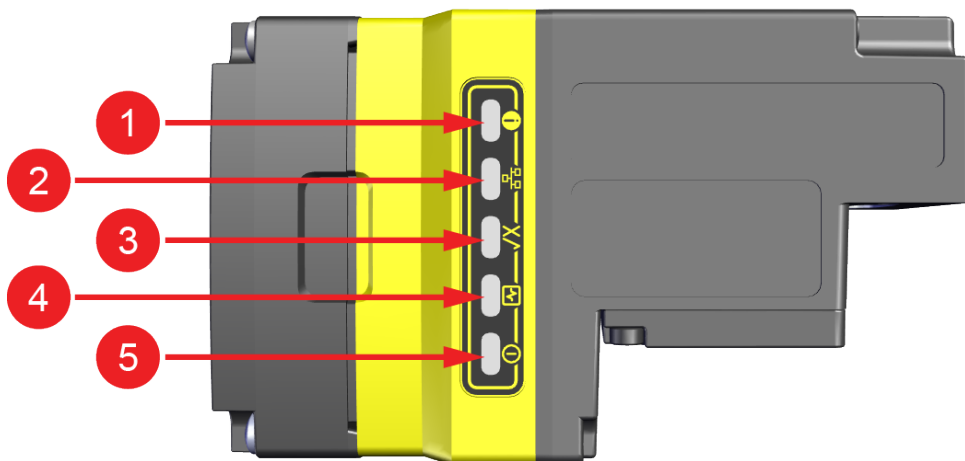
Applied Voltage	24 V DC or less
Residual voltage	0.85 V or less
Maximum sink current	25 mA
Short-circuit current	100 mA or less
Short-circuit protection	multifuse - 50 mA

PNP (Pull Up) Output Type Characteristics

Output voltage range	24 V DC or less
Residual voltage	0.8 V or less
Maximum source current	25 mA
Short-circuit current	50 mA or less
Short-circuit protection	multifuse - 50 mA

Status LEDs

There are five status LEDs that occupy five positions. These LEDs provides status information about the operation of the Advantage 182 devices. The LEDs are defined for normal operation of the product as follows:



Number	Element	Color/Status	Meaning
1	Error LED indicator	ON	This LED is on if the Advantage 182 detects an error.
2	Communication LED indicator	Flashing	This LED is flashing when the Advantage 182 established the Ethernet connection.
		OFF	This LED is off when there is no Ethernet connection.
3	Pass/Fail LED indicator	GREEN, blinking	The device performs a good read.
		RED, blinking	The device performs a bad read when it does not find a decoding after a timeout.
4	Train status/Trigger status LED indicator	ON	If the device has a trained code, this LED is green.
		OFF	If the device has no trained code, this LED is off.
5	Power LED indicator	ON	The device is on.
		OFF	The device is off.

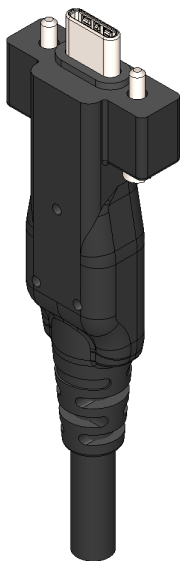
Note: The Error LED and the Job Pass/Fail LED flash briefly when the unit is powered up as part of the initial boot.

USB-C-DB15 Cognex Serial IO Cable

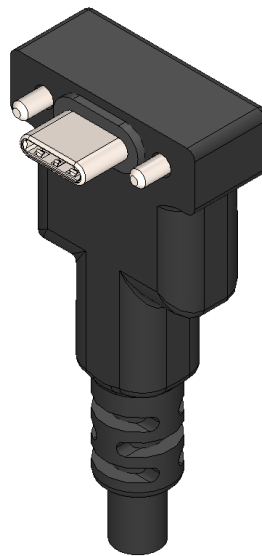
The Input/Output and serial communication functions of the Advantage 182 only work with the USB-C-DB15 Cognex Serial IO and USB-C-Flying lead Cognex Serial IO cables.

The cable is 0.5 m long, and is available with two types of USB connectors:

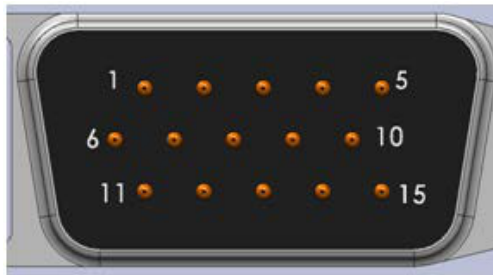
Straight version



90 degrees version



The DB15 connector has the following pin definition:



Pin Number	Signal Name	Description
1	VBUS	USB power
2	CON_TXD	TIA/EIA232-F TxD (Output)
3	CON_RXD	TIA/EIA232-F RxD (Input)
4	GND	Reference ground (GND). All signals are referred to GND (except for Ethernet).
5	+VEXT (Power)	External power supply pin (Input). Connect this pin to an external power supply pin to feed the device with proper power. Maximum 24 V + 10% is supported.
6	Not Connected	

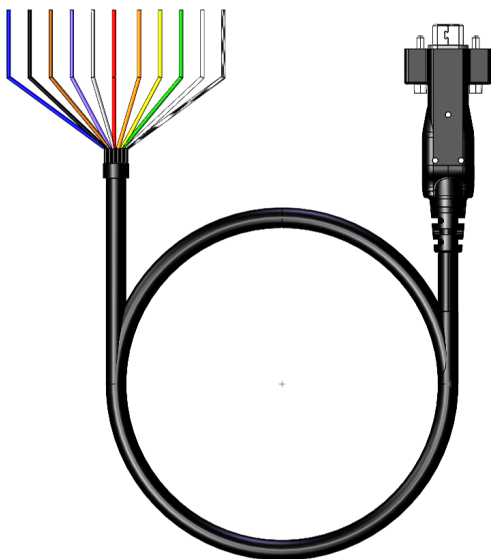
Pin Number	Signal Name	Description
7	OUT_0	Open collector output channel 0. Depending on the configuration, an external pull up resistor might be necessary. Current must not exceed 25 mA. This signal has a resettable fuse protection that releases the line in case of a short circuit.
8	IN_0	Digital Input 0
9	Not Connected	
10	Not Connected	
11	Not Connected	
12	OUT_COM	
13	Not Connected	
14	USB_D+	
15	USB_D-	
SHELL	SHIELD	

USB-C-Flying Lead Cognex Serial IO Cable

The Input/Output and serial communication functions of the Advantage 182 only work with the USB-C-DB15 Cognex Serial IO and USB-C-Flying lead Cognex Serial IO cables.

The cable is 2.5 m long, and is available with two types of USB connectors:

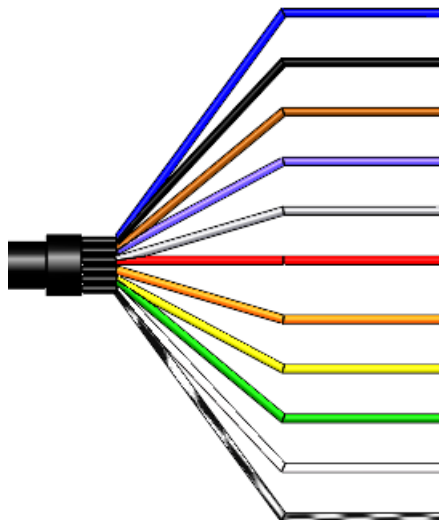
Straight version



90 degrees version



The Flying lead end connector has the following pin definition:



Wire	Function	Description
Blue	VBUS	USB power
Black	CON_TXD	TIA/EIA232-F TxD (Output)
Brown	CON_RXD	TIA/EIA232-F RxD (Input)
Violet	GND	Reference ground (GND). All signals are referred to GND (except for Ethernet).
Gray	+VEXT (Power)	External power supply pin (Input). Connect this pin to an external power supply pin to feed the device with proper power. Maximum 24 V + 10% is supported.
Red	Out_0	Open collector output channel 0. Depending on the configuration, an external pull up resistor might be necessary. Current must not exceed 25 mA. This signal has a resettable fuse protection that releases the line in case of a short circuit.
Orange	In_0	Digital Input 0
Yellow	Out_Com	
Green	USB_D+	
White	USB_D-	
Braid	Shield	

Connection Procedure

WARNING: In order to prevent permanent damage, GND (violet) must be connected before +VEXT (gray), USB_D+ (green) and USB_D- (white) are connected. Failure to follow these instructions may lead to permanent damage of connected equipment.

Ensure to follow the instructions described above when connecting the CCB-PIO-FL-25RA or CCB-PIO-FL-25ST cables to avoid damage to the host machine and Cognex camera. Incorrect connections may result in severe damage and such damage is not covered by the warranty.

For further inquiries or assistance, please contact your Sales representative.

Optics and Lighting

This section provides an overview about the available lens, illumination options and field of view values. For more available options, please reach out to your local sales representative.

Lens

Lens	Product Number
6.2 mm F6	114-20147-006

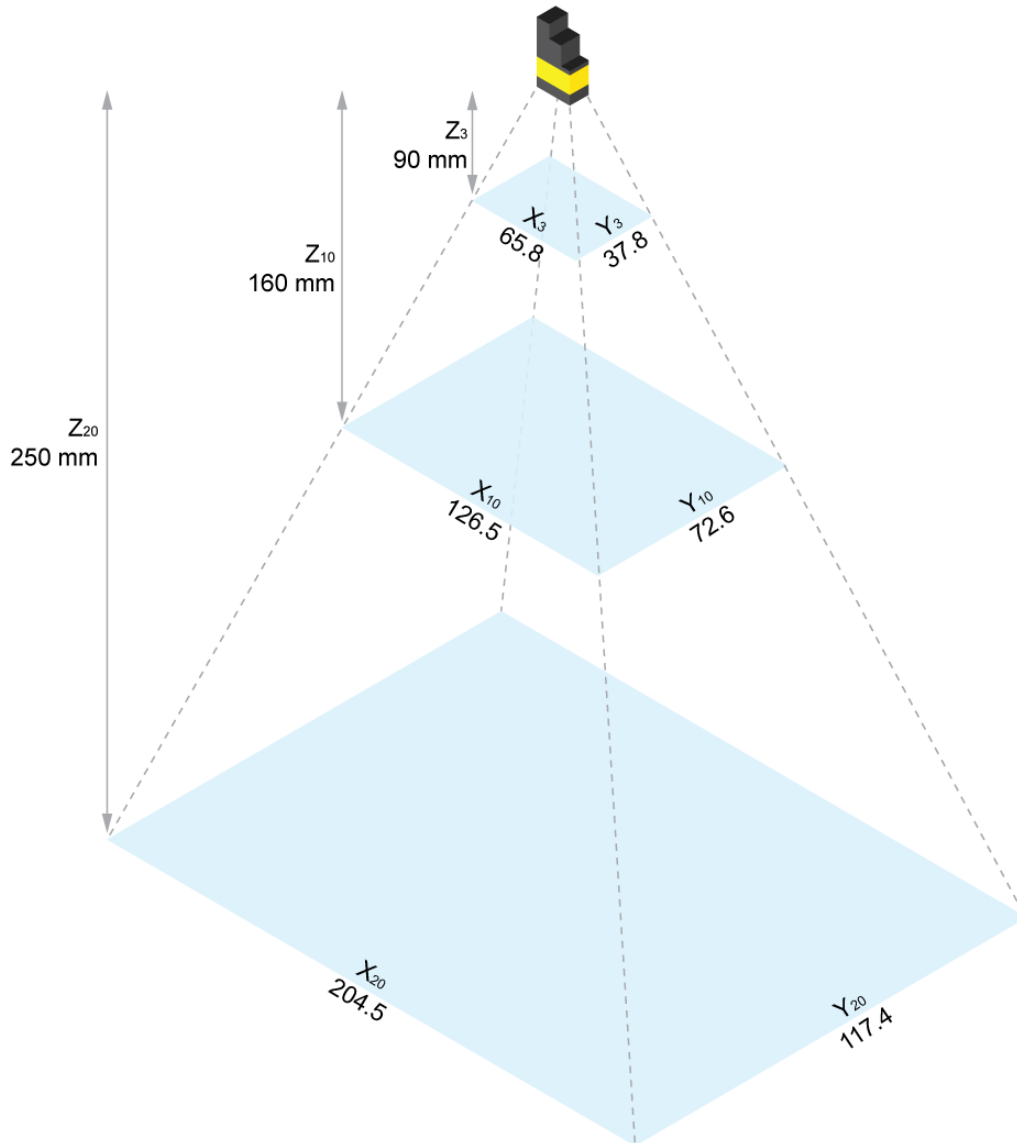
Note: High-Speed Liquid Lens (HSL) is also available.

The default focus options measured from the mounting holes are the following:

- 90 mm
- 160 mm
- 185 mm

Fields of View

Note: Working distances are measured from the mounting holes.

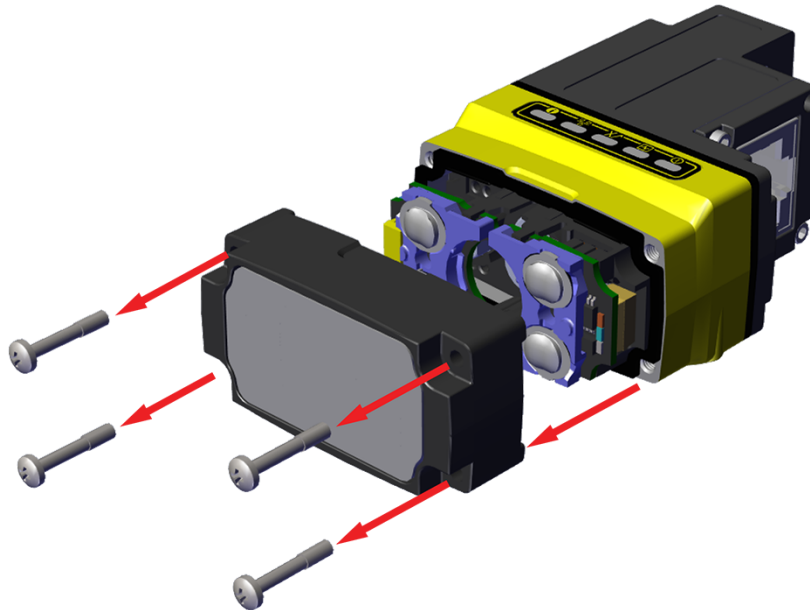


Working distance in mm	Horizontal values in mm	Vertical values in mm	Pixel size in mm
$Z_6 = 120$	$X_6 = 91.8$	$Y_6 = 52.7$	0.048
$Z_7 = 130$	$X_7 = 100.5$	$Y_7 = 57.7$	0.052
$Z_8 = 140$	$X_8 = 109.2$	$Y_8 = 62.7$	0.057
$Z_9 = 150$	$X_9 = 117.8$	$Y_9 = 67.6$	0.061
$Z_{10} = 160$	$X_{10} = 126.5$	$Y_{10} = 72.6$	0.066
$Z_{11} = 170$	$X_{11} = 135.2$	$Y_{11} = 77.6$	0.070
$Z_{12} = 180$	$X_{12} = 143.9$	$Y_{12} = 82.6$	0.075
$Z_{13} = 185$	$X_{13} = 148.2$	$Y_{13} = 85.0$	0.077
$Z_{14} = 190$	$X_{14} = 152.5$	$Y_{14} = 87.5$	0.079
$Z_{15} = 200$	$X_{15} = 161.2$	$Y_{15} = 92.5$	0.084
$Z_{16} = 210$	$X_{16} = 169.9$	$Y_{16} = 97.5$	0.088
$Z_{17} = 220$	$X_{17} = 178.5$	$Y_{17} = 102.5$	0.093
$Z_{18} = 230$	$X_{18} = 187.2$	$Y_{18} = 107.4$	0.098
$Z_{19} = 240$	$X_{19} = 195.9$	$Y_{19} = 112.4$	0.102
$Z_{20} = 250$	$X_{20} = 204.5$	$Y_{20} = 117.4$	0.107
$Z_{21} = 260$	$X_{21} = 212.4$	$Y_{21} = 121.9$	0.111
$Z_{22} = 270$	$X_{22} = 220.2$	$Y_{22} = 126.4$	0.115
$Z_{23} = 280$	$X_{23} = 228.0$	$Y_{23} = 130.8$	0.119
$Z_{24} = 290$	$X_{24} = 235.8$	$Y_{24} = 135.3$	0.123
$Z_{10} = 300$	$X_{10} = 243.6$	$Y_{10} = 139.8$	0.127

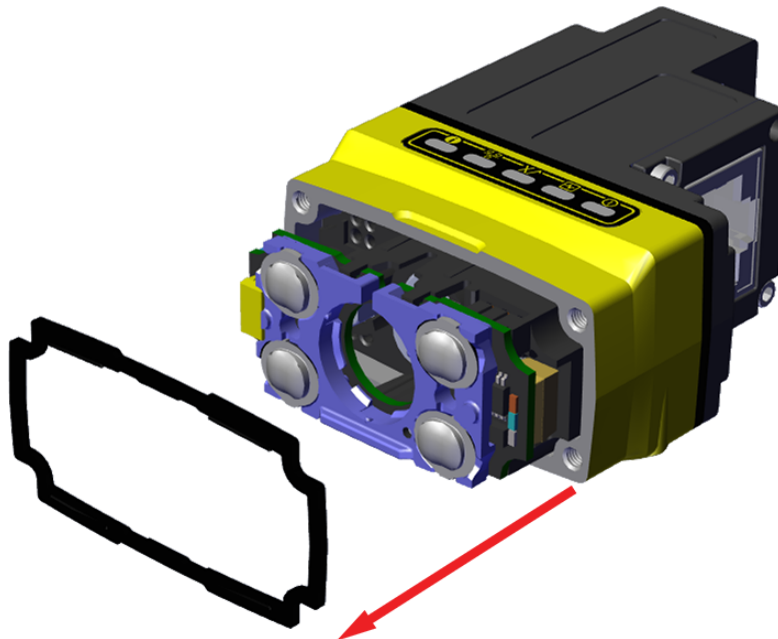
Changing Illumination Modules

This section provides a step-by-step process for changing the illumination module on a reader.

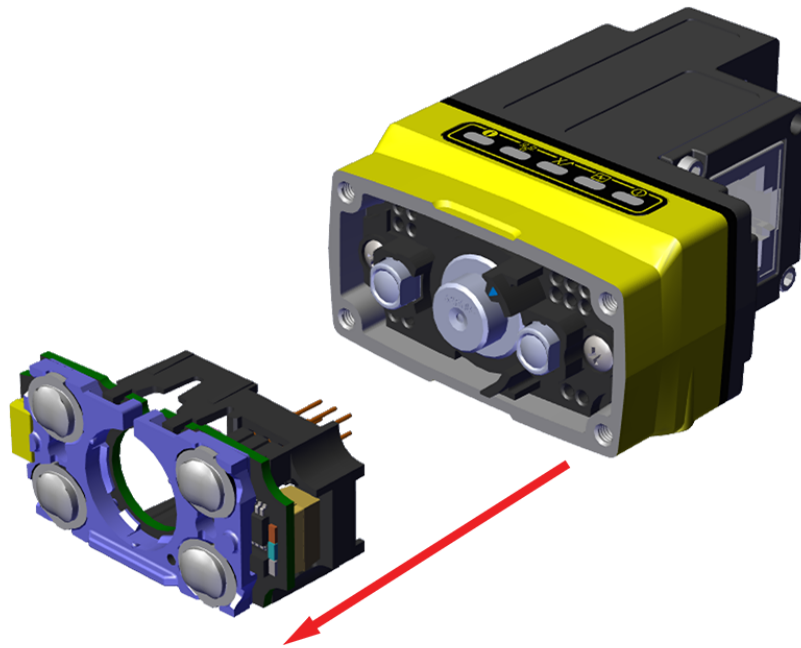
1. Power off the unit.
2. Unscrew the four screws, then take off the metal cover from the reader.



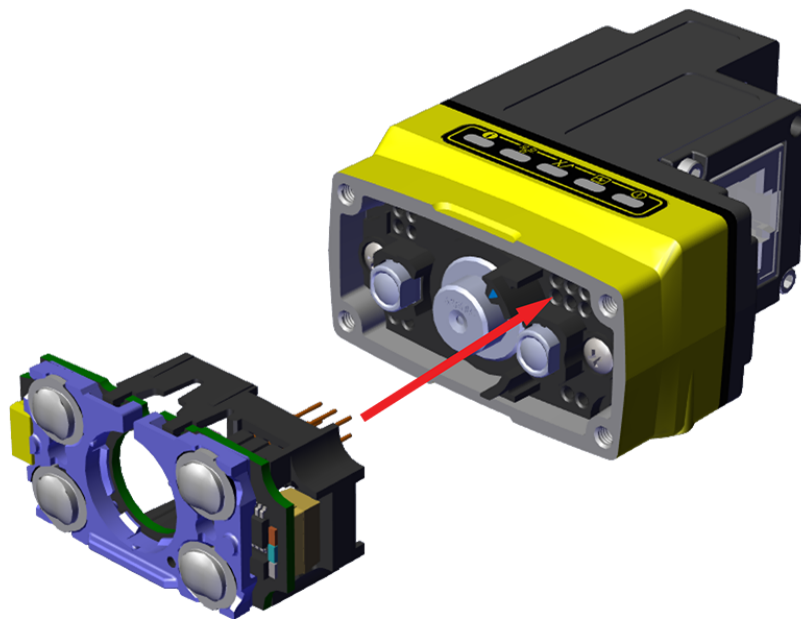
3. Remove the front cover gasket.



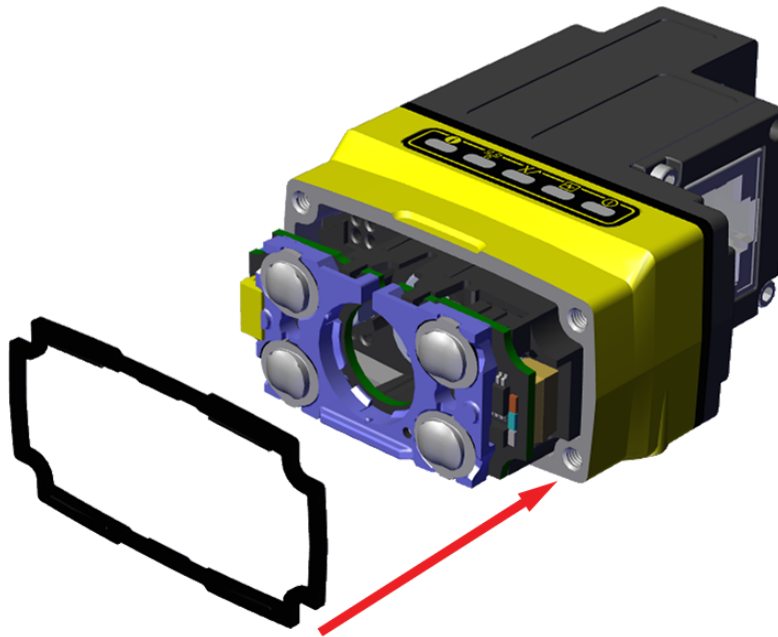
4. Remove the illumination module.



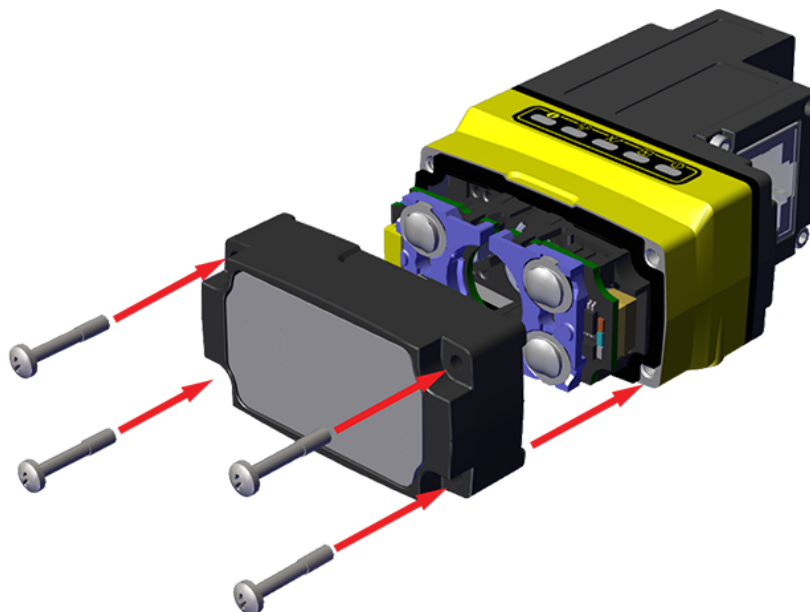
5. Install the new illumination module.



6. Install the front cover gasket.



7. Install the front cover and tighten the screws, applying a recommended torque of 0.16 Nm.

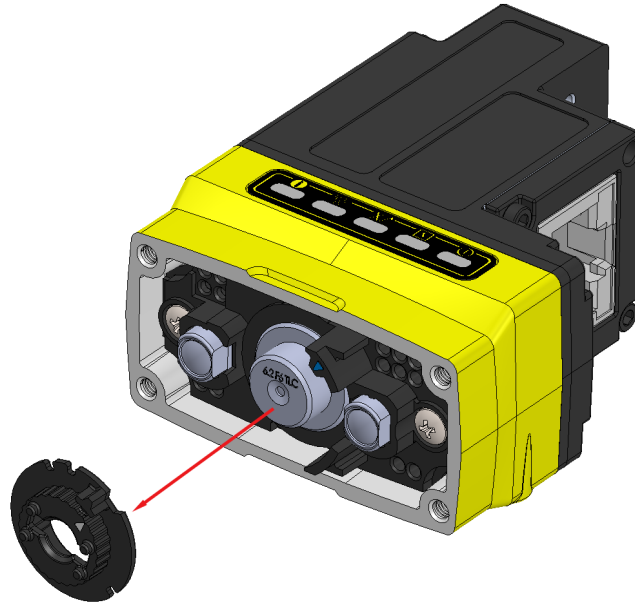


Adjusting Focus Distance

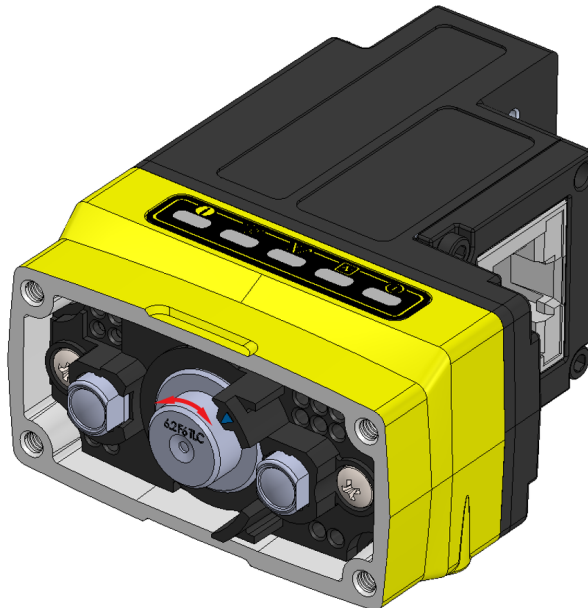
You can manually adjust the focus of a development Advantage 182.

Note: The version controlled cameras are glued and the focus cannot be adjusted.

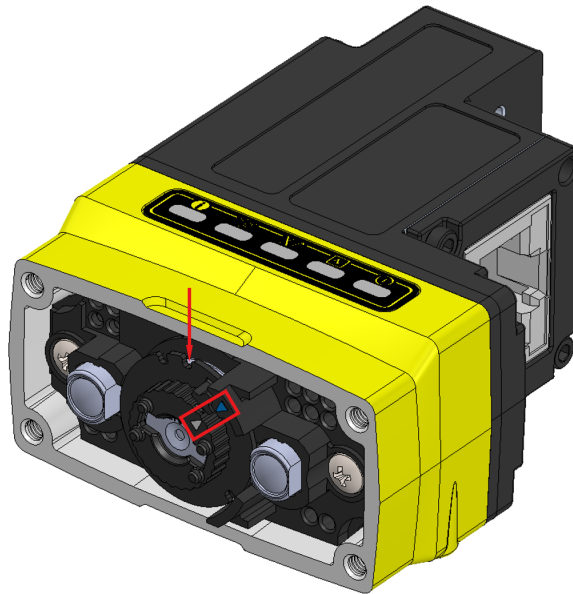
1. Remove the front cover and the illumination module. For help, see steps 1-4 of [Changing Illumination Modules on page 35](#).
2. Remove the lens cap.



3. Adjust the focus by rotating the lens.



4. Reinstall the lens cap. Make sure that the notch is pointing at 12 o'clock and the arrow on the lens aligns with the arrow on the mount.



5. Reassemble the camera. For help, see steps 5-7 of [Changing Illumination Modules on page 35](#).

Cleaning and Maintenance

Clean the Housing

To clean the outside of the reader housing, use a small amount of mild detergent cleaner or isopropyl alcohol on a cleaning cloth. Do not pour the cleaner on the reader housing.

You can also use cleaning agents containing alkyl ammonium chloride, such as liquid 3M Quant HB or Clorox disinfectant wipes, for surfaces that require cleaning of biological contamination without chemical alteration of the surface.



CAUTION: Do not attempt to clean any Advantage product with harsh or corrosive solvents, including lye, methyl ethyl ketone (MEK) or gasoline.

Clean the Reader Image Sensor Window

To remove dust from the outside of the image sensor window, use a pressurized air duster. The air must be free of oil, moisture or other contaminants that could remain on the glass and possibly degrade the image. Do not touch the glass window. If oil or smudges remain, use a cotton bud and alcohol (ethyl, methyl, or isopropyl) to clean the window. Do not pour the alcohol on the window.

Clean the Reader Lens Cover

To remove dust from the lens cover, use a pressurized air duster. The air must be free of oil, moisture or other contaminants that could remain on the lens cover. To clean the plastic window of the lens cover, use a small amount of isopropyl alcohol on a cleaning cloth. Do not scratch the plastic window. Do not pour the alcohol on the plastic window.

Regulations and Conformity

Note: For the most current CE and UKCA declarations and regulatory conformity information, see the Cognex support site: cognex.com/support.

Advantage 182 readers have Regulatory Model number 50180 and meet or exceed the requirements of all applicable standards organizations for safe operation. However, as with any electrical equipment, the best way to ensure safe operation is to operate them according to the agency guidelines that follow. Please read these guidelines carefully before using your device.

Safety and Regulatory	
Manufacturer	Cognex Corporation One Vision Drive Natick, MA 01760 USA
	Advantage 182 Regulatory Model 50180 This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take immediate measures. This equipment complies with the essential requirements of the EU Directive 2014/30/EU. Declarations are available from your local representative.
EU RoHS	Compliant to the most recent applicable directive.
FCC	FCC Part 15, Class A This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Korea 	This device is certified for office use only and if used at home, there can be frequency interference problems. A급 기기(업무용 방송통신기자재): 이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다. Advantage 182: R-R-CGX-50180
TÜV	Advantage 182 RJ45 Regulatory Model 50180 Advantage 182 USB-C Regulatory Model 50209
	NRTL: TÜV SÜD SCC/NRTL OSHA Scheme for UL/CAN 61010-1.
	CB report available upon request. TÜV SÜD, IEC/EN 61010-1.
UK	Regulatory Model 50180 Regulatory Model 50209

中国大陆RoHS (Information for China RoHS Compliance)

根据中国大陆《电子信息产品污染控制管理办法》(也称为中国大陆RoHS), 以下部份列出了本产品中可能包含的有毒有害物质或元素的名称和含量。



Part Name 部件名称	Hazardous Substances 有害物质					
	Lead (Pb) 铅	Mercury (Hg) 汞	Cadmium (Cd) 镉	Hexavalent Chromium (Cr (VI)) 六价铬	Polybrominated biphenyls (PBB) 多溴联苯	Polybrominated diphenyl ethers (PBDE) 多溴二苯醚
Regulatory Model 50180	X	O	O	O	O	O

This table is prepared in accordance with the provisions of SJ/T 11364.

这个标签是根据 SJ / T 11364 的规定准备的。

O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB / T26572 - 2011.

表示本部件所有均质材料中含有的有害物质低于 GB / T26572 - 2011 的限量要求。

X: Indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB / T26572 - 2011.

表示用于本部件的至少一种均质材料中所含的危害物质超过 GB / T26572 - 2011 的限制要求。

For European Community Users

Cognex complies with Directive 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE).

This product has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment, if not properly disposed.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems for product disposal. Those systems will reuse or recycle most of the materials of the product you are disposing in a sound way.



The crossed out wheeled bin symbol informs you that the product should not be disposed of along with municipal waste and invites you to use the appropriate separate take-back systems for product disposal.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You may also contact your supplier for more information on the environmental performance of this product.

