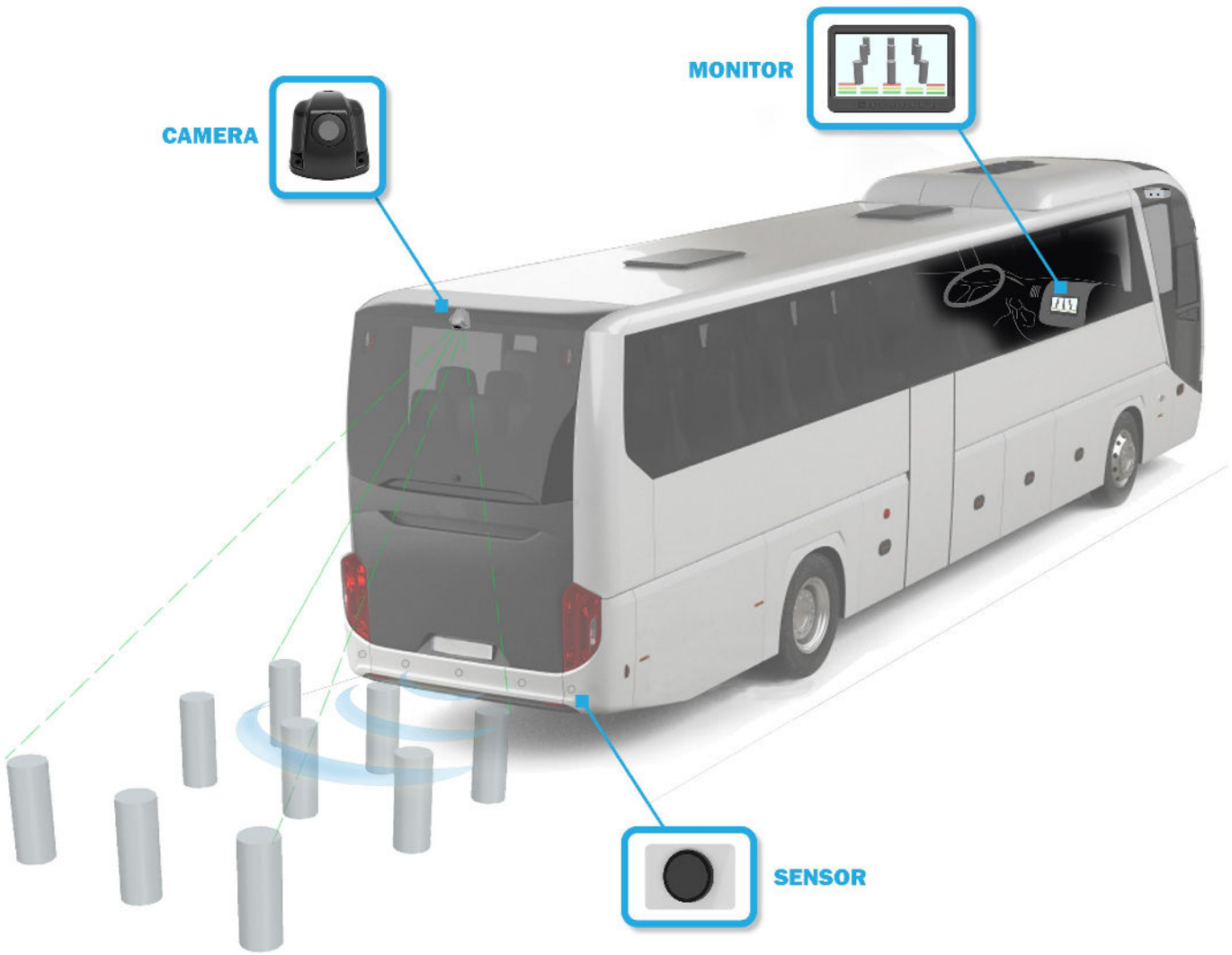
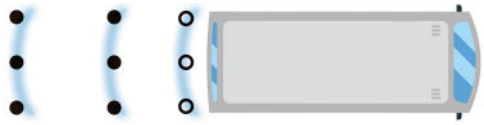
Technical Data



Content

1. R158 Device



Reference number 32 00 000

1.1. System description

Device of detection and rear visibility. Once installed on vehicle, it provides audible and visible warning (dynamics overlays on display) according to Regulation 158.

See system components on table below. Monitor model reference and length of some cables are according to customer needs (see table columns in blue colour):

Component / Reference	Camera	Sensor	Sensor Cable	ECU	ECU-Camera Cable	ECU-Sensor Cable	Monitor	Monitor Cable
3200300 (1 unit)	X							
3200200 (5 units)		X						
5272105/3 (1 unit)							2 CAM	
5272102/2 (1 unit)							4 CAM	
3200420 (1 unit)				X				
3200406 (1 unit)			X					
3200405 (1 unit)			X					
3200402 (1unit)						X		
3200407 (1 unit)					X			
5211903 (1 unit)								8 m
5211905 (1 unit)								10 m
5211904 (1 unit)								15 m
5211901 (1 unit)								20 m
5211906 (1 unit)								30 m

Reference table

R158 Device

1.2. General characteristics

Operating temperature range	From -20°C to 60°C
Storage temperature	From -20°C to 60°C
Voltage	DC 12V/24V
Power consumption	< 6W
Approval number	E9*10R06/02*5108 (Monitor 4 CAM System) E9*10R06/02*5110 (Monitor 2 CAM System) E9*118R04/01*1402
RoHS compliance	Yes
REACH compliance	Yes
Warranty	2 years limited warranty.

2. Technical data

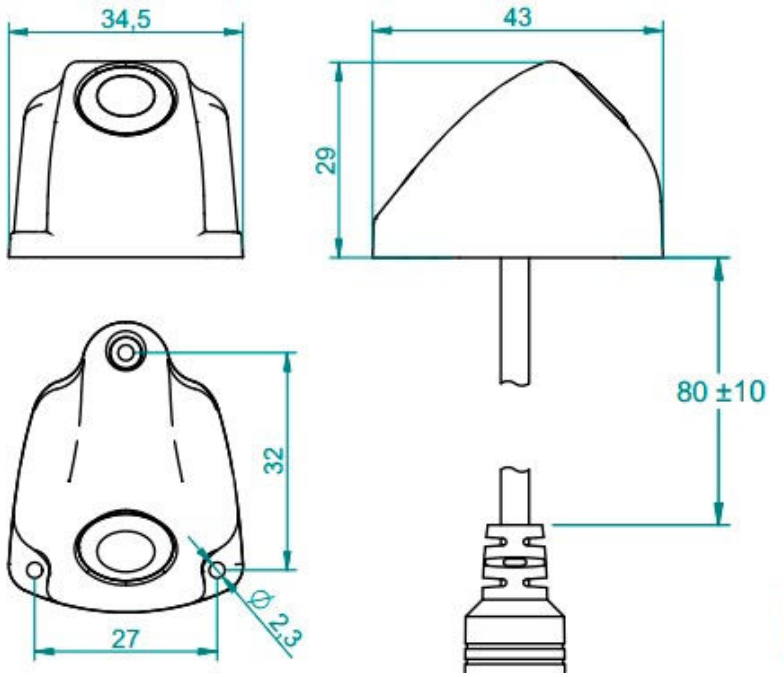
2.1. Rear camera

Reference number	32 00 300

2.1.1. Specifications

Description	Exterior analogical camera for Bus, Motorhome, Mini and Midibus and other vehicles.
General characteristics	CMOS sensor PAL system IP67 waterproof
Colour	Black
Weight	50 g
Operating temperature range	From -30°C to 60°C
Field of view	V:105° H:132° D:138°
Maintenance	Use a damp cloth for clean the camera.

2.1.2. Dimensions



Units in mm

Technical data

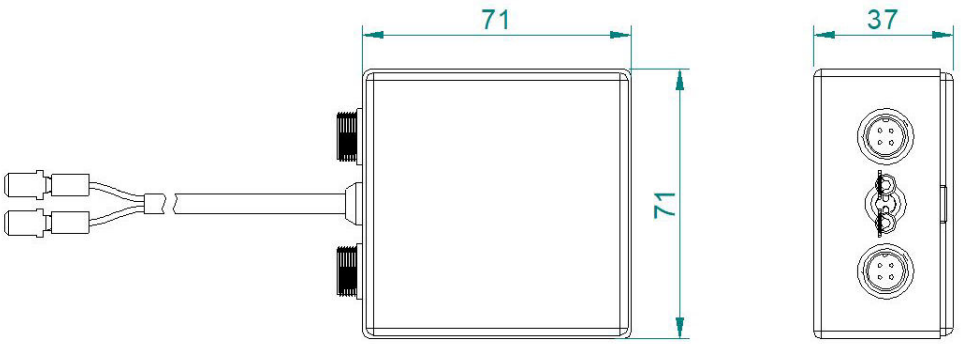
2.2. ECU

Reference number	32 00 420

2.2.1. Specifications

Description	Electronic control unit.
General characteristics	IP54 waterproof.
Colour	Black.
Weight	72g
Operating temperature range	From -40°C to 85°C
Maintenance	Not needed.

2.2.2. Dimensions



Units in mm

Technical data

2.3. Monitor

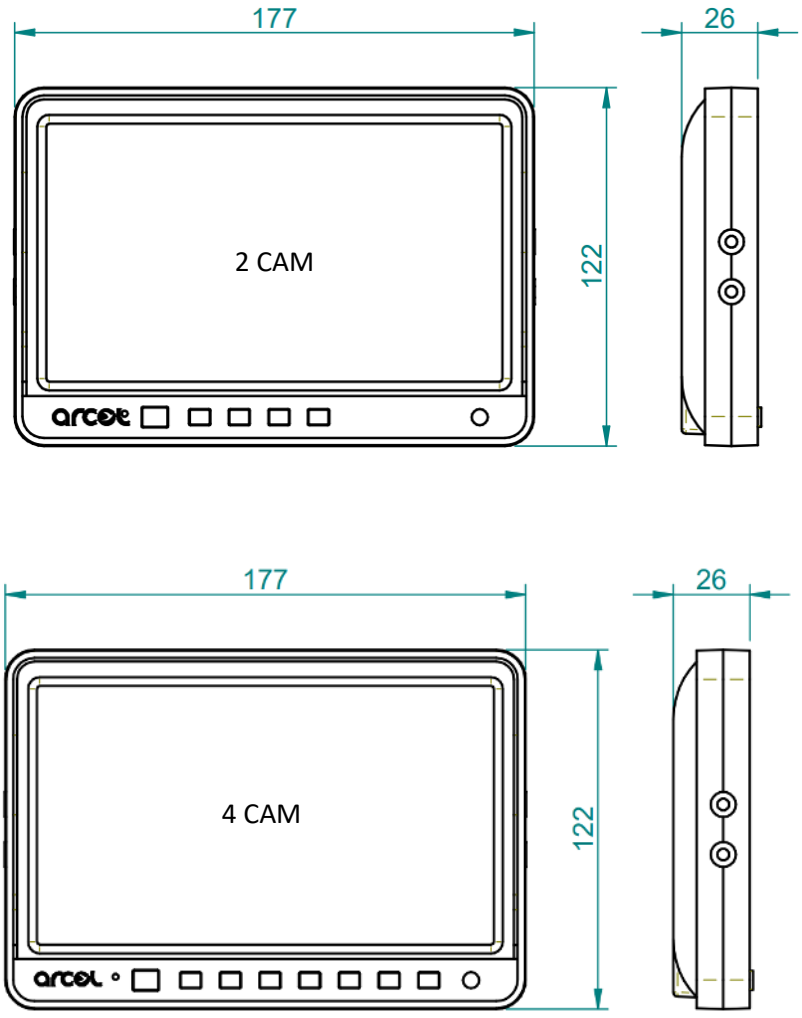
Reference number	52 72 008 (7” 4 CAM) 52 72 011 (7” 2 CAM)

2.3.1. Specifications

Description	Monitor for Bus, Motorhome, Mini and Midibus and other vehicles.
General characteristics	Vibration proof. Sunlight resistance glass. OSD Men.
Voltage	DC 12V / 24V
Buzzer	60 dB
Colour	Negro.
Weight	360 g
Display dimension	7” (16:9)
Resolution	RGB 800x480p
Brightness	450 cd/m2
AV inputs	2 (Monitor 2 CAM) / 4 (Monitor 4 CAM).
Trigger wires	2 (Monitor 2 CAM) / 4 (Monitor 4 CAM).
Operating temperature range	From -20°C to 70°C
Maintenance	Use a damp cloth for clean the monitor.

Technical data

2.3.2 Dimensions

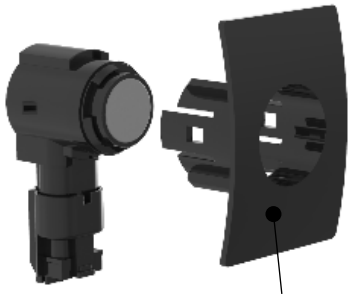


Units in mm

Technical data

2.4. Sensor

Reference number	32 00 200

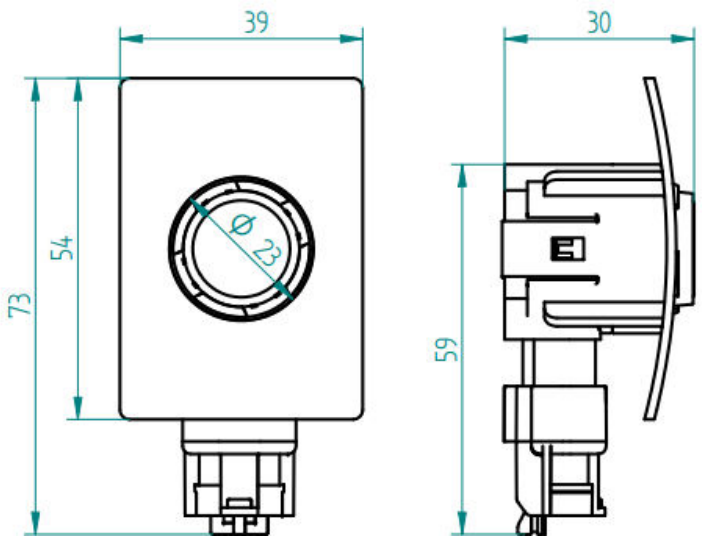


Support with adhesive

2.4.1. Specifications

Description	Ultrasonic sensor for object detection.
General characteristics	IP69K (impermeability)
Detection range	0 cm – 150 cm
Frequency	55.5 kHz
Weight	25 g
Colour	Grey and Black. Consult about partial painting of sensor.
Operating temperature range	From -40°C to 85°C
Maintenance	Use a damp cloth for clean the top of the sensor.

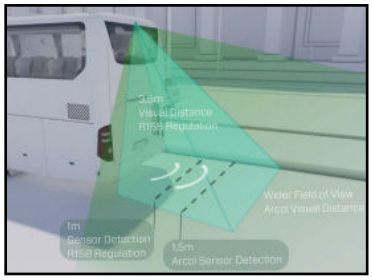
2.4.2. Dimensions



Units in mm

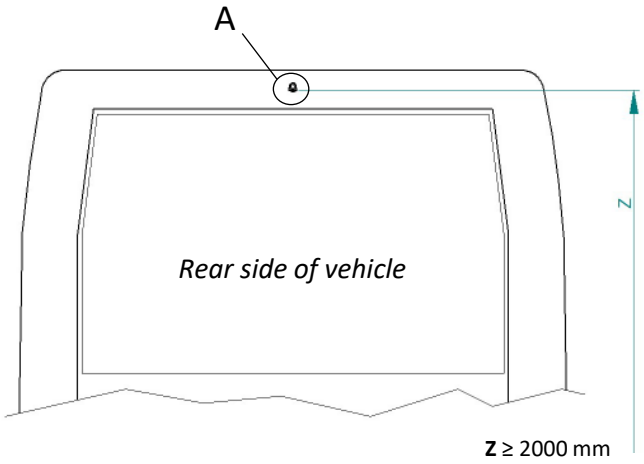
3. Device installation

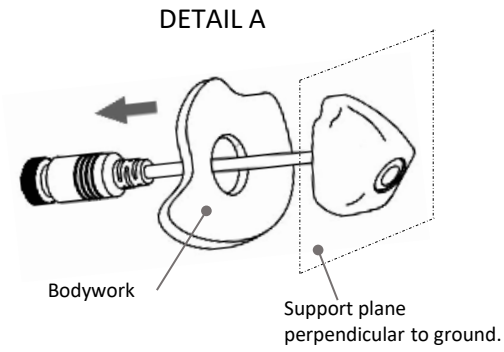
To ensure system meets specifications according to R158 is full recommended follow installation instructions indicated.



3.1. Camera installation

Make a hole of ø16mm on bodywork and install the camera according to position defined as following:





Note: Use screws DIN7981 2,2 x 6,5 (x3) provided to fix camera on bodywork

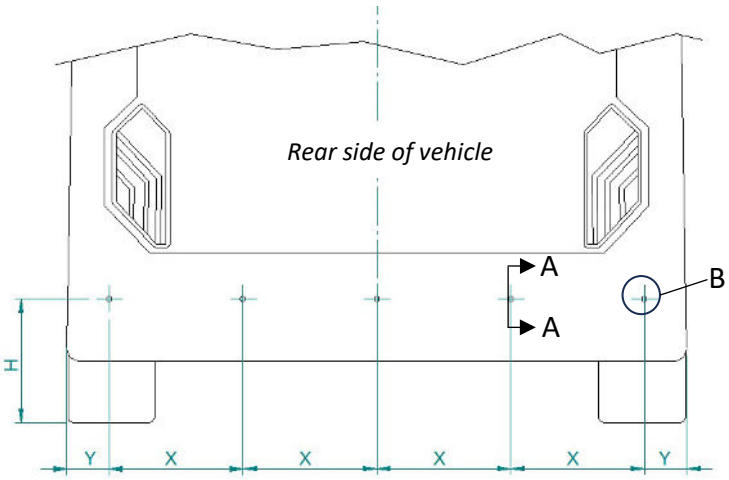
3.2. ECU connection

ECU must be installed in the interior of vehicle and connect to the camera through a wiring of 550 mm (see point 4. Connections).

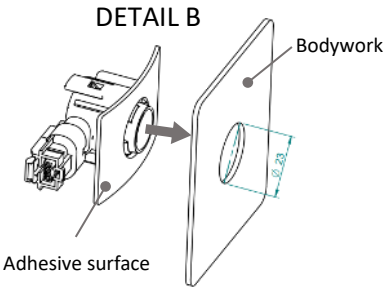
Device installation

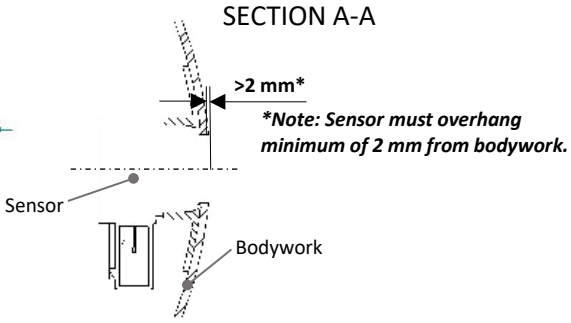
3.3. Installation of sensors

Make a hole of ø23 mm on bodywork for each sensor following distances specified in image below. Number of sensors will be defined according to width of vehicle. Sensor's adhesion surface must be clean and smooth.



600 ≤ **H** ≤ 850 mm
250 ≤ **X** ≤ 500 mm
Y= 500 mm máx.

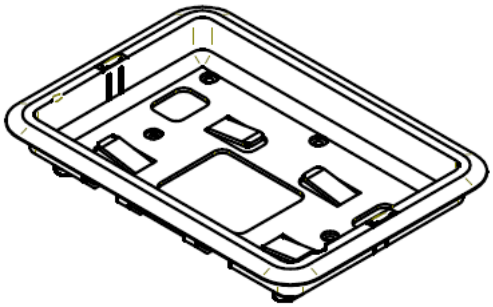


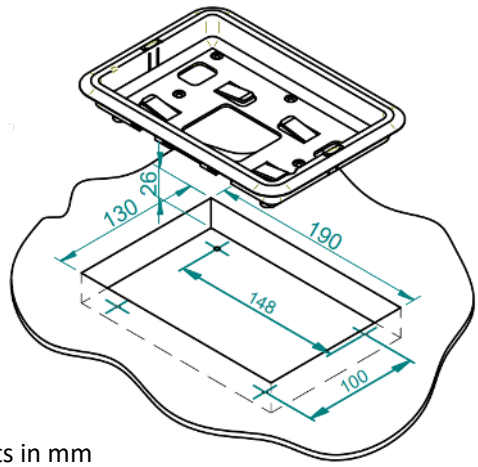


3.4. Monitor assembly

Keep the monitor in desired position inside of vehicle . You can use 3 different supports provided by ARCOL. See details below:

1. Embedded frame: Make a housing with specified dimensions in drawing and embed the frame.

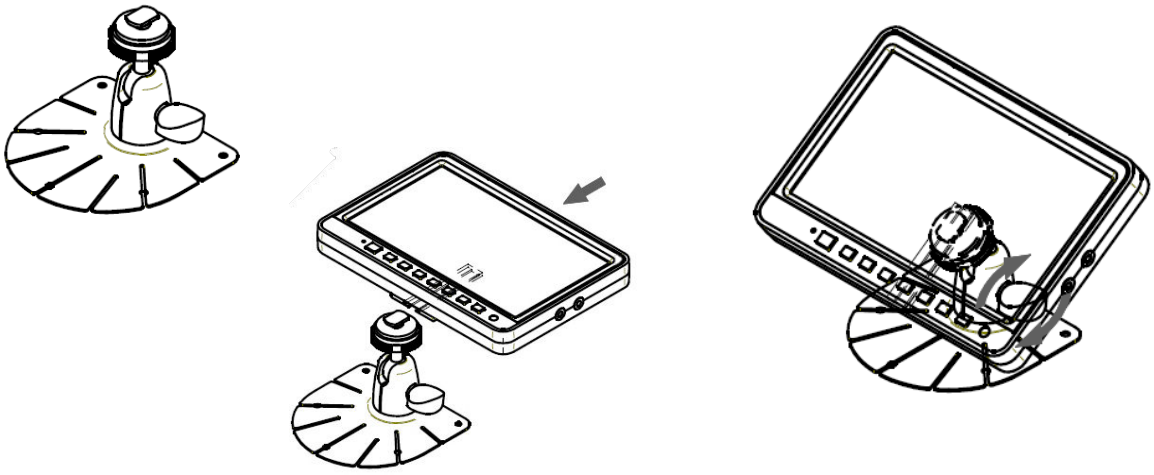




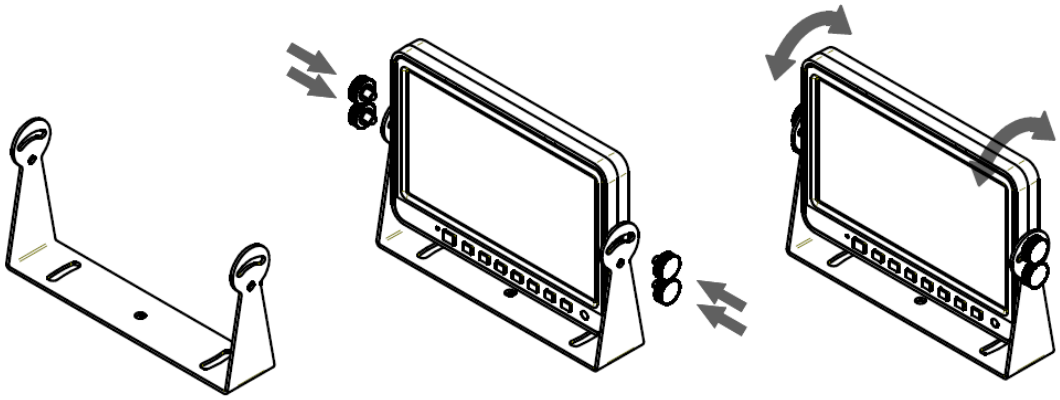
Units in mm

Device installation

2. Adaptable support: Assembly (adhesive or screwed) the support in location desired, fit support and monitor together and put it in right orientation.

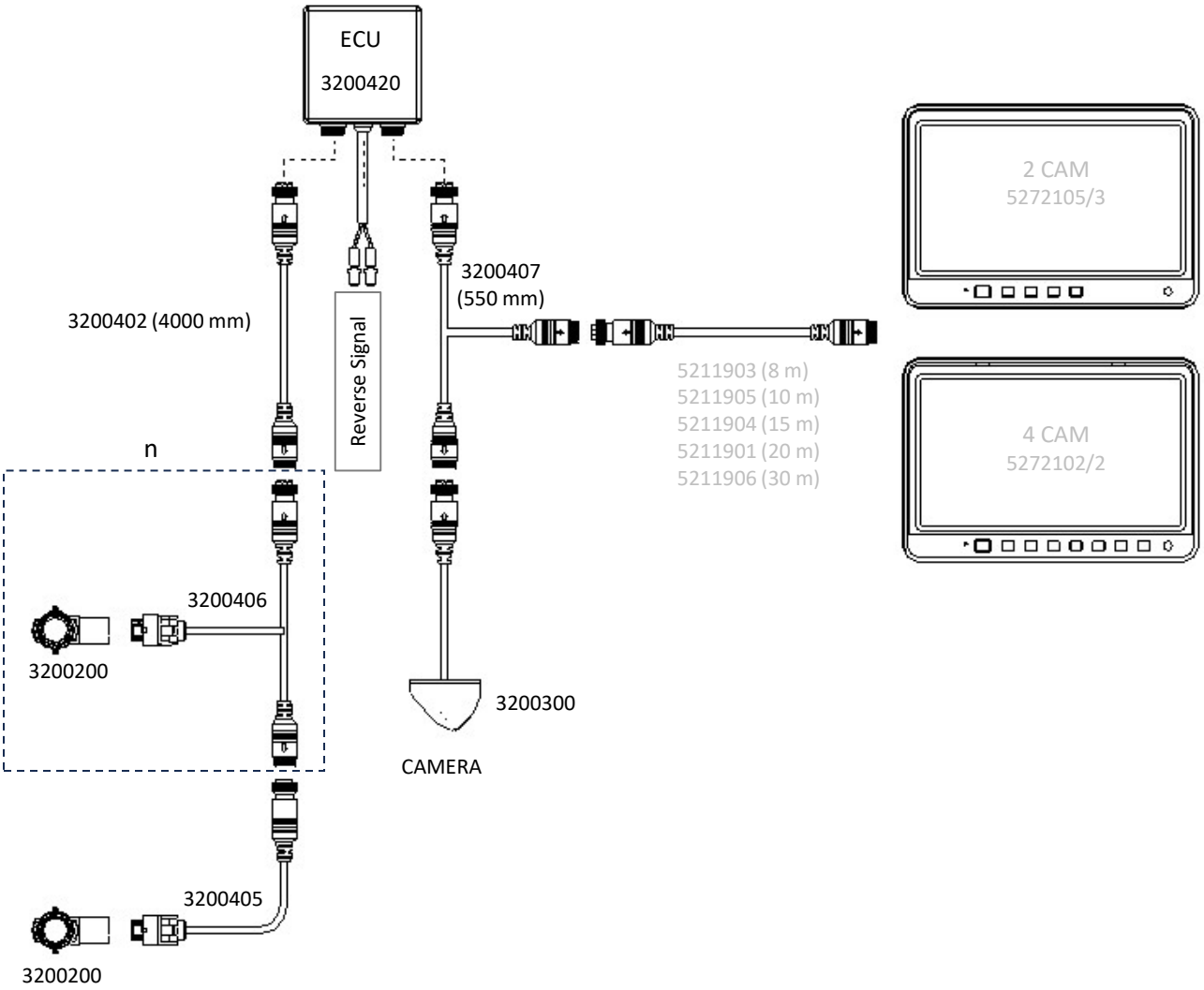


3. Fixed support: Use the screws to fix support in desired location, keep right orientation of the monitor and fix through lateral knobs.



4. Connections

Connections between components of the detection system must be done according to following instructions:

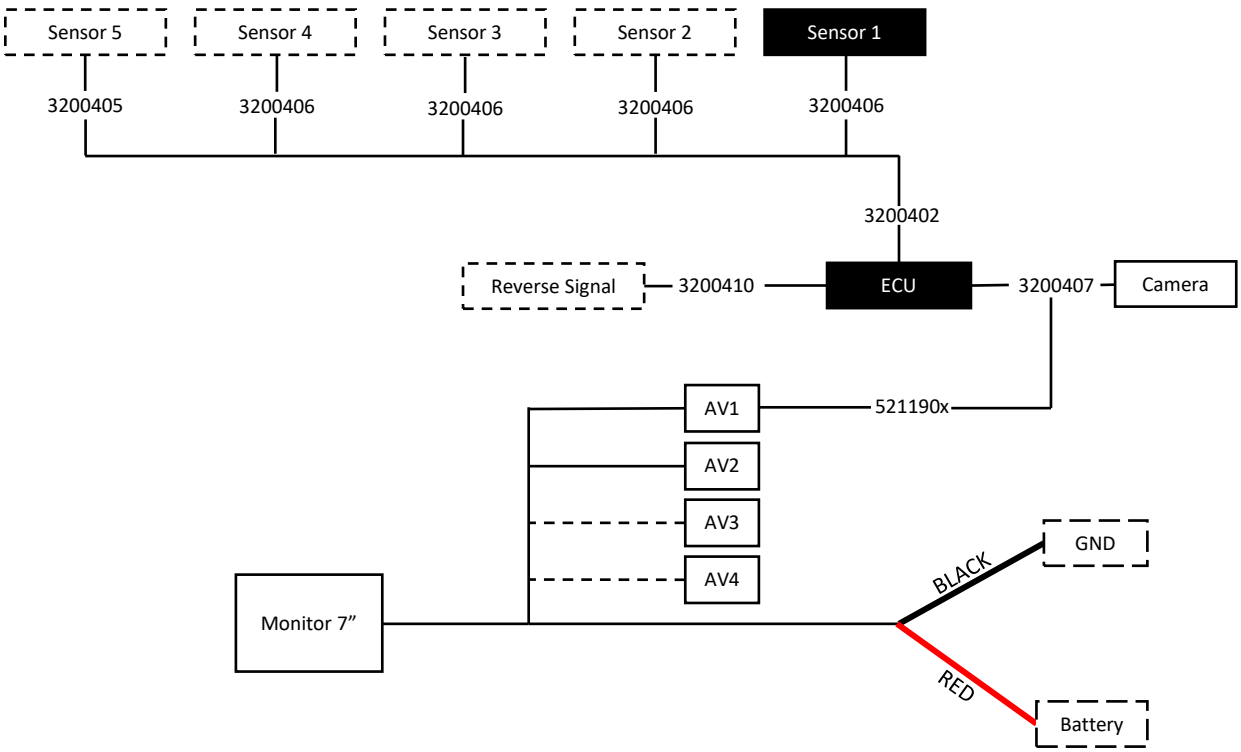


5. Wiring

See the wiring scheme of the system of detection and rear visibility below:

Colour	Function	Voltage
Black	Ground (-)	GND
Red	Battery (+)	12 V / 24V
Yellow	Reverse Signal	
Grey	Trigger Camera 1	
Green	Trigger Camera 2	
Blue*	Trigger Camera 3	
Brown*	Trigger Camera 4	

**Display of 4 cameras*



6. Change log

V 02/2024

- Document release

V 04/2024

- Monitor reference updated (section 1.1 and 4).

V 12/2024

- Homologation code acc. To R158 added (page 4; point 1.2).
- ECU wiring updated (page 6).
- Device installation chapter updated (page 10).
- Wiring scheme updated (page14; chapter 5).

V 01/2025

- Diagram updated (page 13; chapter 4).