

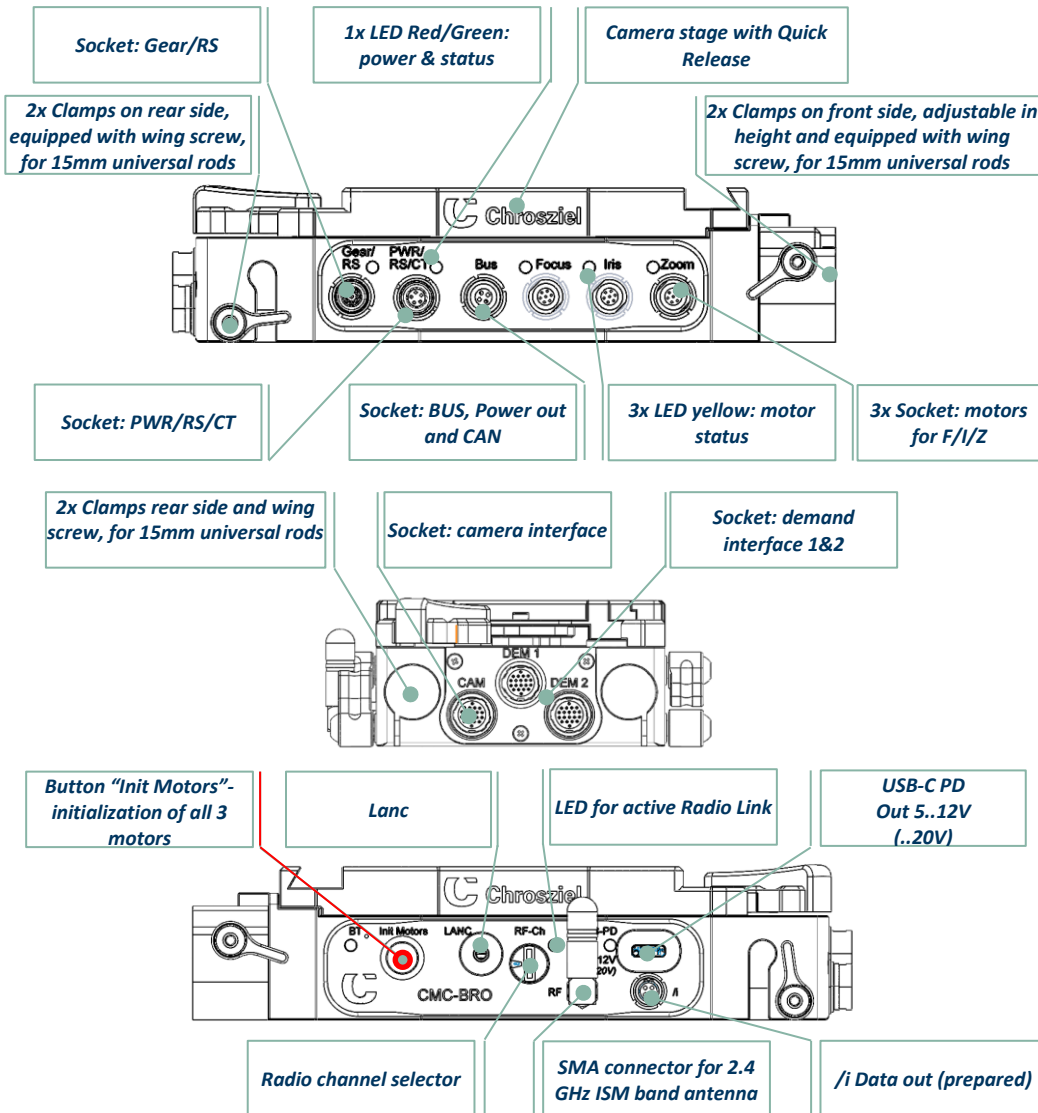
Quick Reference Guide – CMC-BRO

Chrosziel Motor Controller for Broadcast Applications

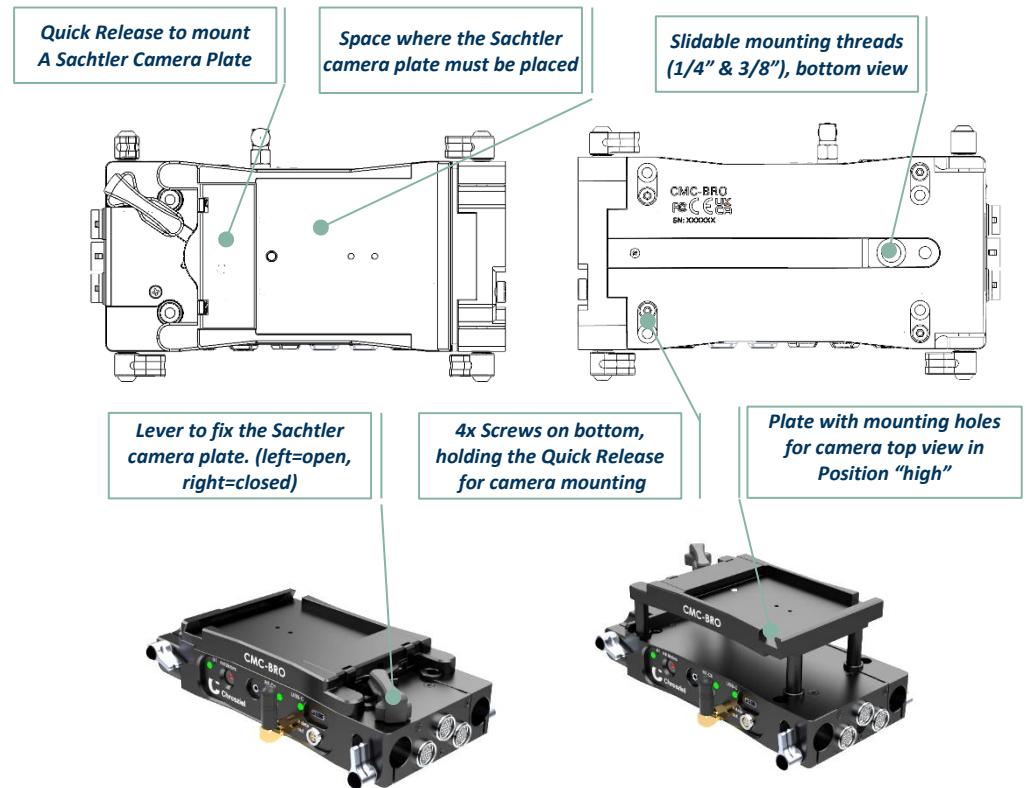
Important note: For detailed information and safety instructions refer to product user manual!



Device Connections Overview



Adjustable Mounting Positions with Quick Release



Mounting the Motor Driver:

Follow these steps to mount the motor driver to a remote head or tripod:

1. **Preparation:** Ensure no cable is connected to the motor driver.
2. **Mounting Style:** Choose high/low based on optical center. Open 4 screws, turn camera stage 180°, replace, and tighten.
3. **Attach Camera:** Screw Sachtler camera plate to the camera.
4. **Quick Release:** Open lever, insert Sachtler plate (not secured yet).
5. **Secure Camera:** Turn lever right until it clicks. Pull left to open.
6. **Adjust Clamps:** Set height of the 15mm front clamps as needed.
7. **Mount Device:** Attach to tripod or remote head using sliding threads.
8. **Connect Motors:** Install motors for focus, iris, and zoom as needed.
9. **Power On:** Power the driver and press button for >3 seconds to initialize all motors.
10. **Connect Cables:** Use original or compatible Chrosziel cables:
 - Head control cable to "Demand".
 - Camera control cable to "Camera".
11. **Antenna Setup:** Attach for wireless use; select channel "5" to F, or set to "4" or less.



Note: lens motors stay calibrated after each power cycle. Positions are stored in none-volatile memory. Do not move the lens gears & motors, while Motor driver is not under power (i.e., when changing battery).

Auto Calibration:

- **Calibration Importance:** Essential for precise, reliable operation.
- **Process:** Records torque resistance and mechanical end stops for each axis.
- **Obstruction Check:** Ensure no obstructions between lens gears and motors.
- **Touching Lenses:** Do not touch lens rings during calibration to avoid inaccurate readings.
- **Status LEDs:** Yellow LEDs near Zoom/Focus/Iris sockets blink during auto calibration.
- **Safety:** Do not touch moving parts during calibration.
- **Completion:** Calibration is done when both end stops are identified and LEDs are OFF.
- **Ready to Shoot:** Motor driver is ready once calibration is complete.

Checking for Current Software Version:

Startup Display: On powering up, software version is shown for about 3 seconds using LEDs.

Version Encoding:

- **Main Version:**
 - Green power LED (2^0)
 - Red status LED (2^1)
 - Radio link LED (2^2)
- **Minor Version:**
 - Zoom motor LED (2^0)
 - Iris motor LED (2^1)
 - Focus motor LED (2^2)

Firmware Range: Displays range from 0.0 to 7.7 (each part has 3 bits).

Examples only:

Led pattern	Binary Expression	Version Number
	001.001	1.1
	010.010	2.2
	011.111	3.7
	111.110	7.6

Button "Init Motors"

- Illuminated button for end stop calibration and motor status display (for all 3 motors).
- Switches motors between manual and controlled mode.
- To calibrate, connect external servo motors to lens gears, then press and hold the button for 3 seconds. Calibration starts immediately.

LED State	Meaning
Constantly Off	All motors calibrated & are controlled by the Servo Drive <i>OR</i> No power.
Slow Blinking	At least one of the connected motors is not calibrated against the lens end stops
Faster Blinking	At least one of the connected motors is calibrating the lens end stops
Flashing (short on / long Off)	At least one of the connected motors is in fault condition
Constantly On	All motors in manual mode, lens gears can be operated by hand, positions are tracked and maintained

Different Status LEDs:

Status LEDs for F/I/Z Motor Out:

LED State	Meaning
Constantly Off	The related motor is controlled by the Servo Drive or no power
Constantly On	Motor is in manual mode, lens gears can be operated by hand, positions are tracked and maintained
Slow Blinking	The related motor is not calibrated against the lens end stops
Faster Blinking	The related motor is calibrating the lens end stops
Flashing (short on / long Off)	The related motor is in fault condition

Status LED on Power Socket:

LED State	Meaning
Constantly Off	No power
Constantly Green	Power supply present, normal conditions
Constantly Orange	Power supply present, voltage drop through weak supply was monitored
Flashing Orange	Power supply present, but too low input voltage (<10V DC)

Status LED for USB-C socket:

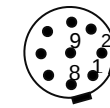
LED State	Meaning
Constantly Off	No power output
Constantly blue	Power-line active, voltage level depends on handshaking between socket and device
Flashing blue unregularly or intermittent	Tries to establish power supply, but fails either due to requested voltage higher than input voltage or over current event as happened

Status LED for Radio Link:

LED State	Meaning
Constantly Off	No Connection
Constantly Green	Radio Link established
Flashing unregularly or intermittent	Radio Link established, but weak

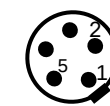
Connector Pin Assignment:

Gear/RS



Type: Lemo compatible 0B 309(B) (female on Servo Drive)
Pin 1: GND
Pin 2: Uin 10V - 15V
Pin 3: RS 232 TX/ 422 TX-
Pin 4: RS422 RX+
Pin 5: RS232 RX/ RS422 RX-
Pin 6: RS422 TX+
Pin 7: +12V /3A/fused resettable
Pin 8: CAM Relay 1
Pin 9: CAM Relay 2

Power In



Type: Lemo compatible 0B 305 (female on Servo Drive)
Pin 1: + Power in
Pin 2: CAM Relay 1
Pin 3: CAM Relay 2
Pin 4: Aux serial in
Pin 5: - Power /GND

Camera



Type: Hirose HR25A-9R-20-S
Pin 1 n.c.
Pin 2 GND
Pin 3 TxD- (to Host)
Pin 4 +5V (1kOhm)
Pin 5 TxD+/RTS
Pin 6 RxD+/ CTS
Pin 7 RxD- (from Host)
Pin 8 IRIS control 2-7 V+
Pin 9 VTR (out to GND)
Pin 10 RET (out to GND)
Pin 11 Iris Encoder A
Pin 12 Iris Encoder B
Pin 13 n.c.
Pin 14 n.c.
Pin 15 Serial Data Lens → Camera
Pin 16 Zoom Encoder A
Pin 17 Zoom Encoder B
Pin 18 Focus Encoder A
Pin 19 Focus Encoder B
Pin 20 Serial Data Camera → Lens

Demand 1 & 2



Type: Hirose HR25A-9R-20-S
Pin 1 +12V (fused)
Pin 2 ana. Z ctrl.
Pin 3 ana. F ctrl.
Pin 4 RET
Pin 5 n.c.
Pin 6 VTR
Pin 7 GND
Pin 8 GND
Pin 9 n.c.
Pin 10 Z follow
Pin 11 + Uref 7.5V
Pin 12 + Uref 2.5V
Pin 13 F follow
Pin 14 + Uref 5V
Pin 15 DEMAND RX422+
Pin 16 DEMAND RX422-
Pin 17 DEMAND TX422+
Pin 18 DEMAND TX422-
Pin 19 PC Detect
Pin 20 GND

Motor 3x



Type: Lemo compatible 0B 307 (female on Servo Drive)
Pin 1 Motor -
Pin 2 Motor +
Pin 3 Encoder Channel A
Pin 4 +5V
Pin 5 Ground
Pin 6 Encoder Channel B
Pin 7 ID