

## C-184 · C-185 PLine® Drive Electronics OEM Boards and Stand-Alone Units for Ultrasonic Piezomotors



C-185.D64 single-channel bench-top driver electronics with PLine® M-674 RodDrive featuring travel ranges up to 150 mm and 7 N drive force at 450 mm/s

- For PLine® Ultrasonic OEM Motors and Positioners
- Accepts Analog Drive Signal from Standard Controller
- Available as Cost-Effective OEM board and Plug-and-Play Desktop Unit

The C-184 OEM-board and the C-185 stand-alone unit are single-channel drive electronics for PLine® ultrasonic piezomotors and PLine® stages. Piezomotor drive electronics convert analog input signals into the high-frequency drive signals necessary to excite the required oscillations in the piezomotor stator which cause the motion. Both the C-184 and C-185 are available in three versions, for use with different motors and translation stages.

### OEM and Integrated Electronics

The philosophy behind the design of PLine® ultrasonic drives dictates that they be easily adaptable to customer requirements. This includes making the drive electronics both independent of control signal type and available either as an OEM board or as a stand-alone unit in its own case.

While the OEM boards are the most economic solution for large quantities, the stand-alone units make it possible to plug a system with PLine® stages together and put it into operation quickly and easily, for example for system evaluation purposes.

### Analog Control

Both drivers control the motor speed based on an analog signal from 0 to 10 V. With an external position sensor and a servo controller, it is possible to set up a very fast, closed-loop system.

For optimum closed-loop system performance, the C-867 (see p. 4-116) piezo servo-controller is recommended.

### Advantages of PLine® Micropositioning Systems

The ultrasonic piezoceramic drives used in PLine® micropo-

sitioners have a number of advantages over classical drives:

- Higher Accelerations, up to 5 g
- Speeds up to 500 mm/s
- Small Form Factor
- Self-Locking When Powered Down
- No Shafts, Gears or Other Rotating Parts
- Non-Magnetic and Vacuum-Compatible Drive Principle

### Note

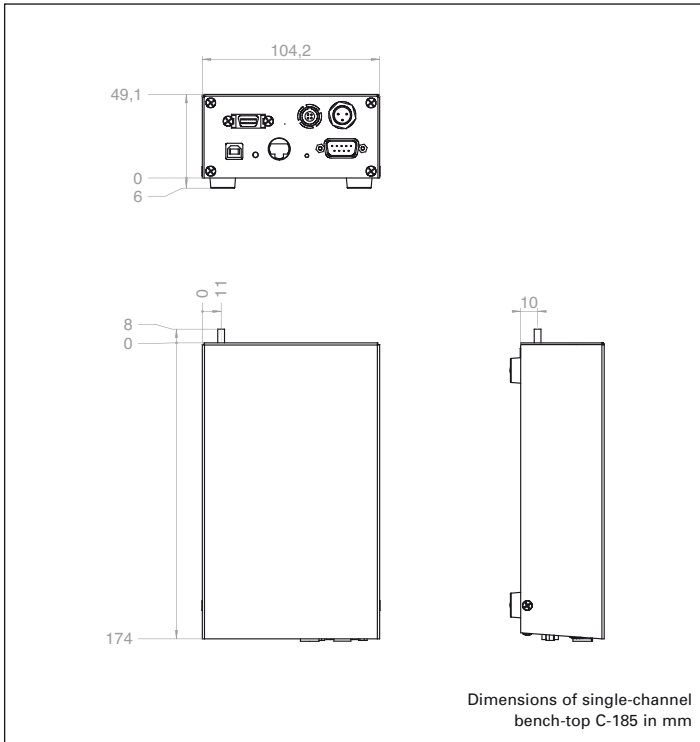
The products described in this document are in part protected by the following patents:  
US Pat. No. 6,765,335  
German Patent No. 10154526

### Ordering Information

- C-184.161**  
Analog OEM Driver Board for PLine® P-661 Motors
- C-185.161**  
Analog Stand-Alone Drive Electronics with Power Supply for PLine® P-661 Motors
- C-184.164**  
Analog OEM Driver Board for PLine® P-664 Motors
- C-185.164**  
Analog Stand-Alone Drive Electronics with Power Supply for PLine® P-664 Motors
- C-184.D64**  
Analog OEM Driver Board for PLine® RodDrive M-674
- C-185.D64**  
Analog Stand-Alone Drive Electronics with Power Supply for PLine® RodDrive M-674



C-184.164 OEM driver board with PLine® P-664 OEM motor


**Linear Actuators & Motors**

PiezoWalk® Motors / Actuators

**PILine® Ultrasonic Motors**

DC-Servo &amp; Stepper Actuators

Piezo Actuators &amp; Components

Guided / Preloaded Actuators

Unpackaged Stack Actuators

Patches/Benders/Tubes/Shear...

**Nanopositioning / Piezoelectrics**

Nanometrology

Micropositioning

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**Technical Data**

Model	C-184	C-185
Function	Analog drive electronics (OEM board) for PISLine® C-184.161: P-661 Motors & Positioners C-184.164: P-664 Motors & Positioners C-184.D64: M-674 RodDrive	Analog single-channel driver box for PISLine® C-185.161: P-661 Motors & Positioners C-185.164: P-664 Motors & Positioners C-185.D64: M-674 RodDrive
Channels	1	1
<b>Electrical properties</b>		
Control in	Differential, -10 V up to +10 V, polarity controls direction	Differential, -10 V up to +10 V, polarity controls direction
Operating voltage	12 V, ±10 %	12 VDC external power supply (included)
Output power / channel	Model dependent: C-184.161: 5 W C-184.164: 10 W C-184.D64: 15 W	Model dependent: C-185.161: 5 W C-185.164: 10 W C-185.D64: 15 W
Output voltage / channel	Model dependent: C-184.161: 120 V <sub>PP</sub> / 42 V <sub>RMS</sub> , 210 kHz C-184.164: 168 V <sub>PP</sub> / 60 V <sub>RMS</sub> , 155 kHz C-184.D64: 190 V <sub>PP</sub> / 67 V <sub>RMS</sub> , 155 kHz	Model dependent: C-185.161: 120 V <sub>PP</sub> / 42 V <sub>RMS</sub> , 210 kHz C-185.164: 168 V <sub>PP</sub> / 60 V <sub>RMS</sub> , 155 kHz C-185.D64: 190 V <sub>PP</sub> / 67 V <sub>RMS</sub> , 155 kHz
<b>Interfaces and operation</b>		
Motor connector	Solder pads	LEMO connector or MDR connector, 14-pin
I/O ports	Solder pads	Sub-D connector, 15-pin
<b>Miscellaneous</b>		
Operating temperature range	+5 to +40 °C	+5 to +40 °C
Mass	C-184.161, C-184.164: 15 g C-184.D64: 24 g	690 g
Dimensions	65 x 38 mm	174 x 104 x 49 mm (without ground connection, pads and fitting panel) 182 x 104 x 49 mm (with ground connection)