

# Classic Organ Works

A DIVISION OF ARTISAN CLASSIC ORGAN INC.

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## Maestro System Products

*Classic Organ Works can provide a complete management system for any type of pipe organ that needs state-of-the-art controls. Developed over the past 40 years for North American organ builders, these products are setting new standards for cost-effective and reliable control of instruments of any size. Using high-quality, industry-standard components, the systems are easy to install and service. A comprehensive range of MIDI equipment is available, for control compatibility with most MIDI sound-expander modules and, Hauptwerk “virtual organ” software.*

### **LINUX-based Control System – LCS**

This new control system allows for really large organs and has many new features that include control of chambers via Ethernet or WiFi, resulting in a small diameter console to chamber cable, or no main cable if wireless systems are used.

All the features of the original Legacy control system are retained and multiple chamber interconnection is simple via an Ethernet or WiFi router.

Among the new features are: Ability to control Hauptwerk virtual organs and Wireless control of the organ by a tablet. Tablet control allows one-man tuning and has all the existing Setup controls for diagnostics. Remote diagnostics and control can be performed from anywhere in the world via the Internet if the organ is connected to a network with Internet access. The usual local Control panel and VFD display are optional and the system may be modified by the pipe organ builder using a laptop computer or tablet.

Linux versions of the various CCC and PCU boxes are available and use the same hinged front panels and interface boards as the older legacy system.

### **Linux Console Control Unit – LCCU**

This console manager performs all required switching and coupling within the console. It sends information about keys, stops, and expression functions to the pipe control unit (LPCU) located in the pipe chamber (and/or to electronic tone generators, including Hauptwerk). It may be used to control a MIDI sound-expander voice module, in the console or a chamber. The LCCU has multiple combination-action memories, with password

protected multi-user features. Additional features include: Automatic-Pedal and Automatic-Solo Couplers, Transposer, settable Crescendo and Sforzando, settable Ventil, All-Swells-to-Swell, Self-diagnostics and many other features, which are described in detail in our comprehensive Organist's Reference Manual. It can also be installed to operate in conjunction with existing systems if only a combination-action, or switching function, is required. The LCCU can drive a VFD (vacuum-fluorescent display) or LED graphics displays and can simultaneously control several MIDI expanders. It has a built-in high-resolution MIDI sequencer for recording and playback. Most interconnections are made within the console using USB.

The LCCU communicates with the chamber(s) via Ethernet or WiFi and comes in various sizes to suit organs of sizes ranging from two to five manuals, or more, as well as keyboards with second touch.

### **Linux Pipe Control Unit – LPCU**

The LPCU performs all the functions of the original PCU but communicates with the console via Ethernet or WiFi, and at least one is located in or near the each pipe chamber. If the organ has multiple pipe chambers, additional LPCU units can be linked by cable either from the console or another LPCU via an Ethernet switch. Each unit controls all nearby magnet drivers (via Pipe Driver Boards that plug into its front panel), and can also operate a MIDI sound-expander. If WiFi is used, each LPCU communicates directly with the console. Blower/Rectifier control is via a “WebRelay” built into the LPCU.

## **Boards unique to Maestro systems:**

### **Universal Interface Board – UIB-5**

The UIB-5 provides the interface between the console computer (SBC) and the LCCU front panel containing the switch-input boards and magnet-driving boards in a “Grey Box”. It accepts USB data from the computer. The same board is similarly used in LPCU chamber boxes (with Ethernet input) to generate data, strobe and enable signals for up to 24 ranks of pipe-magnet driver boards (expansion boxes are needed for more than ten ranks) plus four RS-422 ranks that may be at a distance (one of which can be configured to handle Walker tone generators).

### **Universal MIDI Interface Board – UMI-1**

This board provides a means to convert Ethernet or USB signals to the serial signals required by older numeric or bargraph display boards. It can be powered directly by the USB input source.

### **Optical Key Switch Boards – OPVKM-2, 4**

Various styles of optical key-switch boards are available that can be fitted to most wooden-core keyboards whether in front of, or behind, the pivots. A simple shutter interrupts an infra-red beam in a small solid-state optical component. For the ultimate in reliability, there are no rubbing or contacting metal parts. The boards are designed for time-saving connection directly to the Console Control Computer (LCCU) via USB and also sense key velocity, for loudness control of MIDI-sound modules.

### **Lighted Rocker Tab Assembly – LRT-5**

Lighted rocker tabs provide a cost-effective means of stop control. The tabs rock ON and OFF from a central position and illuminate when on. Each on and off movement is switched by a neoprene plunger, which connects a carbon pad to a contact grid. The plunger also acts as a return spring with a positive tactile action and seals the contacts from dust and dirt for complete reliability. The LEDs illuminate when selected either locally or remotely (from combination pistons) and can be dimmed.

The standard size is 16 tabs wide but smaller groups may be butted on (minimum three) in order to assemble larger blocks. These assemblies are designed for time-saving USB connection directly to the Console Control Computer (LCCU) system. No other connections are required as USB also supplies the power.

### **Graphic Displays – GDM-1**

These OLED displays take the place of numerical displays and bargraphs, showing multiple console functions in colour on 1.7-inch screens of 160x128 pixels. They are driven and powered by USB signals from the console computer.

## **Boards Usable from Legacy systems:**

### **Control Panels**

Several kinds of control panels can be used with the Maestro system for remote control, including iPads, iPhones and Android tablets.

The older CTRL-3, with a VFD-1 vacuum-fluorescent display, can also be used locally on the console.

### **Numerical Displays**

Several displays are available in two or three-digit seven-segment formats of various character sizes and colours. A UMI-1 board is needed for the Maestro system to drive them from USB.

### **Bargraph Displays – BRGF**

These 20-segment LED displays are used to indicate the position of any expression or crescendo shoe. They are available as single units for mounting either horizontally or vertically, or in units of 2, 3 and 4 for mounting horizontally, and are supplied with a black bezel. They are controlled via UMI-1 interface boards. Displays are normally all-green but can have yellow and red at the maximum positions. The red sections can also be used as an independent group to indicate Sforzando. Note that the new GDM based OLED displays are generally preferred with the LCCU, as they are lower cost and more compact and can connect more easily via USB.

### Chimes Driver Board – CDB

This stand-alone board is used to drive a set of AC (or DC) chime solenoids, and is linked to the Pipe Control Unit (LPCU) by three-pair cable. Or it may be used as a stand-alone unit with up to 32 parallel inputs or a MIDI source. 32 outputs are provided whose overall power can be set from a volume switch at the console while each individual note can be regulated for volume to compensate for uneven actions.

### Slider Motor Controller – SMC

This cost-effective steel-cased stand-alone unit provides total control of 16 stop actions for slider chests. All outputs are capable of handling 10-Amp loads to drive any slider-motor solenoid commonly in use, and are fully overload-protected. Both on and off power are adjustable for each motor and full power is applied initially to overcome “stiction” on old sliders. One unit will handle up to 16 stops. Inputs are serial (for easy connection to a Classic LPCU) or parallel (positive or negative input for wiring to drawstops or another type of solid-state system).

### Magnet Driver Boards – OUT-N / OUT-P

Various types of magnet-driver boards are available, both positive or negative output, with various power handling capacities, to drive stop action magnets (SAMs or DKs) in the console, and chest magnets, stop actions, and swell engines in the chamber. These plug directly into the back of the wiring panel of the LCCU or LPCU boxes. There is also a high-power, single-board version especially designed for direct-electric (matrixed) chests with both high-note-drive outputs and low stop (return-break) outputs. See PDMB-2.

### MIDI Equipment:

#### MIDI Keyboards – CMK-3

61-note MIDI keyboards with 20 pistons each can be used with the LCS control system. These keyboards have velocity-sensitive keying and illuminated pistons. Deluxe versions are available with Cherry or Ebony covered wood keys. Metal piston rails are

available (optional), with 20 Klann pistons installed and wired to the keyboard scanner, so no separate wiring is required to the LCCU. Connection is via USB. MIDI over USB is used, including return messages to control optional lighted pistons.

Optionally available are sets of Skinner-style wooden key cheeks for two, three or four keyboards. These just slip over the mounting brackets.

See <http://www.midiworks.ca/>

### MIDI Pedalboards – MPBD

Our standard MIDI-capable pedalboard can be used with the LCS system.

See <http://www.midiworks.ca/>

### Software:

#### OrganWorks™ v3.20

A Microsoft Windows™-compatible computer-aided, organ-design program. Specifically produced for organ builders by our research and development team, this free program allows the design of a complete organ on screen. It provides drawings, printouts of console provisions, stoplists and summaries of the specification to save time, both on initial concepts and revisions.

Download a copy of OrganWorks from <http://www.organworks.com/>.

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Many other organ-related items are available.

*For further information, please contact:*

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