uniflex
relay systems

Uniflex 3000

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THE UNIFLEX 3000 PIPE ORGAN RELAY SYSTEM

The Uniflex 3000 Organ Control System represents a technological leap over the conventional hard wired solid state organ relay, combination action, record/play, and MIDI systems available. It is truly the most advanced state of the art organ control system available to the discriminating organ builder and organist. Over 25 years of testing and software development have gone into the latest improvements in the Uniflex 3000 network based organ control system.

Uniflex 3000 Specifications:

Uniflex 3000 is also one of the easiest systems to install and maintain.

Installation advantages include:

1) There are no restrictions as to where wiring must be placed or how the instrument must be wired.

2) Only three types of circuit boards are used in the system; input boards, output boards, and interface boards. All the switch and magnet wires in the console and chambers are attached to either an input or an output board.

3) All wiring is accomplished with extremely reliable, industry standard insulation displacement connectors without the need for stripping the wire or soldering the connections. If necessary, the wire may be pulled out of the connector and moved to a new connector location.

4) With only three types of boards used for all system applications, the combination action, record/play, and MIDI, there is no need to stock multitudes of different spare or replacement boards.

5) All Integrated Circuits (IC's) coming into contact with the organ wiring are socketed.

6) All diagnostic and system tests appear visually on the computer monitor screen. Any part of the system may be manually activated, tested, or activated by the operator from the organ console or from the computer keyboard or optional touch screen monitor.

The Uniflex 3000 system operates on a PC connected to microprocessor-controlled interfaces. The entire system is controlled from one or more 32-bit or 64-bit Windows-based computers. On some systems, making a combination action change while playing fast keyboard trills will cause the key scanner to slow down or stop while the stops are changing position. The Uniflex 3000 uses a state-of-the-art 32-bit microprocessor to perform console scans on one or more consoles. One interface per console and one interface serving one or more chambers relieve much of the burden from the PC, allowing it to perform the logic analysis necessary to get the notes to the chamber system as fast as possible.

The Uniflex 3000 software runs in the Windows 98, XP, or Vista environment on a standard PC, which allows standard file structure and supplemental programs to interface with the system. The visual graphic interface provides the user with an easily understandable "window" into the system, its programming architecture, and instantly displays all diagnostics visually in real-time. The Uniflex 3000 provides a true multi-tasking system.

System design includes:

1) Simple to wire, understandable input and output hardware.

2) Extensive test and self test diagnostics to aid the installer in checking his wiring. In the TRACE mode, all wiring input and output addresses are displayed on the monitor when any key, stop, piston, or control input is activated.

3) The setup and operation of the relay and combination action allows the installer to activate any stop action magnet or chamber output from the computer terminal.

4) Visual "Show Signals" display window shows the input wiring addresses received from the console and which output it activates in the chamber. A feature not find on other systems.

5) Because of advanced design and superior diagnostics, you will never have to use a "hot" wire, guess where the signals go, or guess how the system works. You have total system control.

Moderate pricing of the Uniflex 3000 relay and superior features make the system cost effective on any size quality instrument. The standard features of the Uniflex 3000 are only offered as expensive optional features on other systems. Many of the features of the Uniflex 3000 simply cannot be found on other systems. The Uniflex system is a complete system; relay, coupling, combination action, record/play, MIDI, definition editor, and the host computer all in one package. The system can be as big or as small as you like, one console or multiple consoles, two ranks or two hundred ranks. You can start small and make it larger at any time without major expenses or complications.

The Uniflex 3000 is considered a Digital Relay System. It operates under the complete control of a PC class computer. Using simple, efficient input and output hardware, combined with a powerful computer and software, the system can simulate all the functions of the organ relay, the coupling system, and the combination action. The Uniflex 3000 system is software controlled so the hardware is kept at a minimum. This makes it the most powerful and flexible interactive, real time, digital relay system available.

Because the Uniflex system resides within a modern, up to date, self contained computer, it requires no additional peripheral equipment for operation, program change, or updating. As new software features and enhancements become available, the input and output board hardware never becomes obsolete. This also means that when a new feature becomes available in software, you do not have to buy or wire any new hardware. Just load the new software and the new features become instantly available.

As computer speeds get faster and new PC software gets more powerful, you can upgrade to the newest fastest processor without having to buy new control system hardware. Any Windows-based 98, XP, or VISTA computer with a standard CAT-5 connection can run the relay software. Additional remote computers can be added which may simultaneously control the main system. These can be desktops or laptops, wired or wireless. This is not possible with multi-processor or embedded processor systems. You would have to change out every multi-processor board in the system to get a faster running system. With a Uniflex, just plug in a new PC and you have the latest and fastest computing technology.

All key contacts, stop switches, toe pistons, thumb pistons, expression shoe contacts, crescendo pedal contacts, and general "control" switches are wired directly to input boards in the order the installer chooses. All

combination action magnets, pipe chamber chest magnets, swell engine, trem, and percussion magnets are wired directly to output boards without any wiring board boundaries, note limits, or pitch limits. All of this makes wiring and operation of the Uniflex system extremely fast and easy.

The Uniflex system does not require you to install diode matrix wiring required by other systems. If it is a switch, it goes to an input board. If it is a magnet, it goes to an output board. Nothing could be simpler to wire or easier to understand. You can use your wiring scheme in which you determine how the organ is wired, which is preferred by most installers. Or, we can provide you with wiring guide sheets.

If the installer has made a wiring or specification error or omission, the computer allows the installer to visually look inside the relay and correct the errors with a few keyboard strokes without having to physically move wires. If a keyboard, for example, was wired with all 61 keys in reverse order, you may not be aware of the error until it is time to get the system running. Other systems would require you to rewire the keyboard in the correct order before the organ could be played. This could take hours since your keyboard cables are probably laced and bundled with other cables.

Rewiring a simple or complex wiring error is not a problem or really even necessary with the Uniflex system. The computer can re-arrange the most severe wiring errors instantly. The system will allow the installer to re-wire a keyboard in the correct note order by simply playing the keyboard keys in the proper order. If preferred, the installer may manually correct or re-address the wiring error in the keyboard address area of the definition file.

The process works the same for stops, pistons, etc. You can re-program the system instantly. No other system allows for these types of wiring corrections. Uniflex software wiring corrections can be maintained or, should you wish to correct the wiring error, the changes can instantly be reversed, which is called interactive soft-wiring. All changes made to the system definition files are immediate. There are no translating and time consuming hook ups for downloading changes to processors. The system is a processor and it is always running. If you do not like the changes you made, you can reverse or undo them instantly.

A software-based combination action opens up new possibilities. The Uniflex 3000 provides a combination action with unlimited memories. Combination action memories are simply simulation files that are loaded into the computer memory when called upon. Since the hard disk drive can hold thousands of files, there is essentially no limit to the number of combination action memories you may have.

Other systems use EEPROM or STATIC RAM chips, all of which are hardware, to hold the combination action memories. Hardware means fixed amounts of data. When the memory area in the RAM is completely full, you are out of memories. You will never run out of combination action memories on a Uniflex system because it contains software files not fixed or limited hardware.

New performance recorder software was written to do the job efficiently. The performance recorder in the Uniflex is not MIDI based like sequencing and performance recorder software used on other systems. Our record/play software was recording organs before the existence of MIDI or MIDI sequencers. The data is taken from the keys, stops, and expression/crescendo pedals and simply recorded to the hard disk drive as it passes through the system to the relay. When a recording is played back, the previously recorded data from the hard drive is sent through the system as if someone were again playing the console live. Since it is the same data, there are no translation problems, time delays, or lost or dropped notes as with MIDI based sequencers. Our record/play software was specifically designed to handle the needs of the pipe organ not a MIDI keyboard.

The same console data is used for MIDI. The key and stop data from the console is used but when a MIDI stop is detected, instead of sending the data through to the chambers, it is sent to the PC MIDI interface card. This gives you full access to MIDI in and out, program changes, MIDI controllers, etc. With a Uniflex system, you can make MIDI do what you want it to do. MIDI data is also recorded along with the console information in the record/play system software. MIDI input and output is handled through a standard PC MIDI card or PC sound card interface and is included with the system's PC.

Because the Uniflex 3000 software is PC file based, any of the system files may be modified, copied, stored, and backed up with the utmost redundancy. The organ specification and wiring data is called an "organ definition" file. With our interactive soft-wire makeup, there may be several different organ definition files modified to the individual taste and needs of the organist(s), and those modifications may be loaded at will, altering the console for one organist, while leaving other organists with their own customizations. For the first time, you can have a relay system with multiple console personalities. Each organist can structure the console, combination action, and relay to their individual needs and load them instantly.

Each organist may have their own personalized combination action with unlimited combination action memory files, without restrictions to general or divisional limitations found in other systems. This means that organists do

not have to share their combination action memories with other organists. Each organist may have as many memories as they need. There is never a worry about losing combination action memories. If the combination action file settings are changed, a backup file of the original settings is automatically created. The change is saved in the new file and the original file is backed up.

Piston ranges and registrations for one organist may be completely different from other organists. Guest organists may store their combination action piston settings on USB flash drives that they may take with them and bring back when playing the organ on subsequent visits. Best of all, combination action memory files may be completely backed up to the hard drive, USB flash drives, or CD/DVD disks. Any file may easily be reloaded from any number of backup sources.

The relay system software allows for every standard and non-standard keying pitch and coupling pitch. It provides unification at standard and non-standard pitches. Special features allow the organist or organ builder to specify and build:

1) Multiple rank resultants with complete pitch flexibility including top and bottom note ranges.

2) Custom soft-wired mixtures and any number of ranks with complete control of fold backs.

3) Extend ranks within wide or limited note ranges.

Complex switching arrangements sometimes referred to as amplexing or duplexing stops are accommodated through the use of algorithmic statements such as logical and, or, not, xand, xor. These may be used to create complex controls through the positioning and programming of speaking and control stops. These controls include celestes off, reeds off, mixtures off, hidden or special couplers, reiteration, pizzicato touch, sostenuto, legato, sustain, and more.

The record/play back system software allows very creative use of true multi-track recording of 100 or more tracks wide. The number of tracks is only limited by the amount of RAM installed in the PC. Multi-tracks are not additive “overdubs”. Each track is a completely separate virtual organ console playing back the organ. It is like having up to 100 or more consoles playing the organ at the same time. This allows recordings that could never be played by a single organist. Recording time and the number of recordings are limited only by the amount of available system memory and space available on the hard disk drive. The Typical 4.0 Gigabyte Drive would accommodate upwards of 3,000 hours of recording.

MIDI may be transparently programmed to work from console keyboards or remote keyboards. MIDI may be tied into or left out of the combination action. This includes coupling and program changes with no combination action or preset limits. Raw incoming MIDI data from external MIDI keyboards may be programmed to play the organ as remote consoles. Raw MIDI in from today's modern MIDI reproducing pianos such as Yamaha Disclavier™, PianoDisk™, and QRS Piano-Mation™, allows organ-piano duets to be recorded and played back with full piano keyboard velocity. This is something that is not available on other systems. Organ and piano duets can be captured and replayed again and again.

Ordering a Uniflex System:

Systems are sold on a quotation basis which requires general console specification and chamber analysis covering all input and output requirements of the organ, including combination action pistons and expression and crescendo pedals. Chamber analysis should also cover multiple chest primaries per division and chest stop action control. Straight organs with pedal borrowings should include all individual offset magnets as well as the pedal division primary and the number of stop actions. Other unusual or non-standard console and chamber "controls" should be included and explained. The system is sold with a PC running Windows XP or Vista. Arrangements can be made, if necessary, should you prefer to supply your own computer. Please contact us for further information regarding the requirements and specifications for the PC. If you have installation needs, we can recommend several qualified installers. Please contact us for names.

Important Note Regarding Direct Electric Action Organs:

Standard output boards control 128 outputs, each designed to handle up to 500 mA of current intermittently. This covers 99 percent of the electro-pneumatic chest actions with primary coil resistance's of 80 Ohms or higher. Organs with Direct Electric Action usually consume considerably more current than this rating and require extra heavy duty switching transistor drivers, available at extra cost. Please indicate the resistance of all coils below 80 Ohms. High Current Drivers are required on any electric action below 80 Ohms.

Important Note Regarding Stop Action Assemblies:

For new or rebuilt consoles, stop action hardware polarity is very important. Magnetically operated, sealed reed switch assemblies use permanent magnets to activate the sealed reed switch. The permanent magnets are positioned according to the magnet coils electric polarity while in operation. This is either positive common or negative common.

The new 128-pin output board has been re-designed to support current-sinking positive-common stop magnets which many of the consoles have as well as the negative-common stop magnets. These new output boards look like our current 128-pin current-sourcing negative-common boards but different driver chips will allow current sink of up to 500 milliamps per pin. Wiring plugs are the same and the layout is identical except for a heavy ground connection required to return the magnet current to the rectifier or battery supply.

There are now 2 types of new 128-pin input boards and 2 types of new 128-pin output boards. These boards are all identical in size and all use the same 26-pin ribbon interconnecting cables that have been used for years, all the way back to the Devtronix systems. Any combination of old and new boards, positive or negative common or keying can be mixed in any configuration to suit your needs.

Magnet driver outputs for the chamber output boards may drive electro-pneumatic and direct electric chest magnets as low as 60 Ohms. Any action magnet 80 ohms or below requires special attention when wiring. The wiring manual points out considerations when using direct electric and electro-pneumatic high current magnets. If you have direct electric actions below 60 Ohms, you will need to install high current drivers available from other suppliers. All system estimates, unless otherwise stated, assume there are no chamber electromagnets below 60 Ohms. It is your responsibility to alert us if any chamber magnet is below 60 ohms.

Interface Board Requirements For Your Needs:

You may easily determine the number of input and output boards required for your instrument.

Console Inputs:

Add all the switches in the console, which includes the number of manuals times 61. Do not forget 2nd touch contacts, if your console is so equipped. Count the pedal board as 32 switches, or 64 if equipped with 2nd touch.

Count all the stop switches. Count all the combination action pistons. Count all reversible action pistons. Count the swell shoe and crescendo roller or potentiometer contacts. Count any extra control buttons you may have or require. Every "switch" on the console must be counted. Once you have added up the numbers, divide the total by 128, which is the number of inputs on an input board. Round off any remainder to the next highest number. This is how many input boards you will need for the console. As an example, if you added up all the console switches and you arrived at 654 switches. You would then divide that number by 128, which comes to 5.109375. You round up to the next highest number for a total of 6 input boards.

Console Outputs:

Console outputs control the combination action stop action magnets and any lamps or LED indicators located in the console. To figure the console output needs, count the number of stops controlled by dual magnetic stop actions or air action magnets and multiply that number by 2 (one output for the on coil and one output for the off coil). As an example, if you have 140 stops with electro-pneumatic or electromagnetic stop actions, you will require 280 output pins. Next, add any indicators or LED's you will have at the console. Take the grand total of all the outputs in the console and divide the total number of outputs by 128, the number of outputs on an output board. For example, if you arrived at 298 total outputs for the console, you would divide that number by 128, which would equal 2.328. You would round up to the next highest number, which would be 3 output boards for the console.

Chamber outputs:

The same process for determining the number of output boards for the console applies to the chamber. Add all the chamber magnet outputs. This includes chest magnets, trem magnets, swell shade magnets, straight chest stop action magnets, tuned and non-tuned percussion magnets, etc. For example, if you arrived at a count of 1,320 chamber magnets, you would divide this number by 128. The result would be 10.3125 rounded up for a total of 11output boards. That is the complete process.

Why Uniflex Is The Better Choice:

The Uniflex 3000 system should be your choice for all your organ control needs. The base system includes an off-the-shelf, Windows PC, monitor, keyboard, mouse, two microprocessor-controlled interface cards (one each for console and chambers) and all software for relay, coupling, combination action, record/play, and programming. Our simple input and output

interface card installation means simple, easy installation with insulation displacement wiring connectors and special pistol grip wiring tool. There is no wire stripping**,** crimping, or soldering wires to the connectors. The average connector wiring time is 25 minutes per board. The Uniflex system is completely software controlled. All hardware and operating characteristics are simulated. There are no special wiring placement considerations, boundaries, or diode matrix wiring required.

Uniflex 3000 Organ Control System Feature List:

Relay Features:

Keying: You may have up to 121 notes per keyboard/manual with no limits or restrictions on the number of divisions or manuals, including multiple consoles.

Stops: There are no limits or restrictions on the number or type of stops and switch controls you may have on the instrument.

Divisions: You may have virtually unlimited number of divisions. This allows multiple consoles with completely independent combination actions including separate divisional and general pistons.

Note Range Limits: Each stop control has provisions for both top and bottom note limits, as well as active or inactive status flags for combination action and record/play system management.

Couplers: Each coupler may be from and to any division at any pitch including non-standard pitches. Couplers have provisions for both top and bottom note limits as well as active or inactive status flags for combination action and record/play system management. Couplers may be selectively coupled, if so desired.

Melody Couplers: Any number of Melody Couplers may be assigned. Melody couplers couple the top or bottom note of a chord at unison, sub, or octave pitches either to itself or to another division keyboard. Auto note follower (on/off) control allows the release of the top or bottom note and automatically follows or couples the next highest or lowest not to the assigned manual. Melody couplers to the pedal division are also known as automatic pedal or melodic pedal.

Cutouts: The system allows for any number of standard and non-standard cutouts or silencers. These are typically reeds off, mixture off, Celestes off, or your requirements. Cutouts prevent otherwise normal stops from working unless a control stop is enabled or disabled.

Manual Transfers: The system supports as many manual transfers as required. A manual transfer exchanges any two manuals; Choir becomes Great and Great becomes Choir. There are no limits. Manual transfers also allow limited consoles

to have phantom divisions. An existing manual may be exchanged with a phantom division manual.

Piston Transfers: Manual transfers may be set up to automatically transfer the pistons associated with the transferred manuals.

Sostenuto: The Uniflex system offers three types of "Sostenuto" control. As most commonly defined, the Sostenuto sustains a group of notes held when the effect is activated usually through a lever switch attached to one of the expression shoes.

The Uniflex offers these three types of Sostenuto: (You may have all three types on the instrument without restrictions.)

A) Piano Type Sostenuto
B) Keyboard Sustain
C) Keyboard Legato.

Transposers: Uniflex offers three different types of transposers: (You may have all three types of transposers on the instrument without conflicts with each other.)

A) Absolute
B) Relative
C) Key Sensing

Pizzicato Couplers: Any coupler may be created or modified to become a Pizzicato coupler. Each note may be individually programmed for Pizzicato time. There are no limits to the number of Pizzicato couplers you may have and each may have a completely different timing block for all notes, all couplers.

Pizzicato Keying: Any rank may be set up to Pizzicato. Again, there are no limits to the number of ranks you can Pizzicato and each note of the rank may be set with different timing values to compensate for slow valves.

Monophonic Trap Line: We offer trap line outputs for each keyboard. When any key is pressed, a single non-pitched signal is generated as a control gate to operate non-tuned percussions (traps) or other control applications.

Rank to Rank Couplers: Any rank can be coupled to another rank or group of ranks. This makes it possible to create your own custom mixtures with fold backs at any point. Rank to rank couplers may also be used to control Celeste ranks, etc.

Pizzicato and Reiteration: Both Pizzicato and Reiteration offer unlimited numbers of timing and control blocks, each with individual note by note timing. In the case of the Reiteration, individual note by note timing and duty cycle adjustment are available.

MIDI Unification: Any MIDI channel may be programmed as a completely unified rank available to any manual division at any pitch. The MIDI rank then behaves like any other straight or unit rank in the organ and may be controlled by stop key, draw knob, piston, combination action, or reversible.

MIDI Ranks: MIDI ranks may be from one note up to 121 notes in range. MIDI notes may be configured as a 12 note octave for pedal or manual rank extensions. There are no restrictions on how MIDI notes may be defined. All pitches are available, not just the 8' pitch on most other systems. Single MIDI notes may be inserted in place of dead notes in the normal pipe rank assignments until the note can be fixed.

MIDI Program Change: MIDI program change allows you to use up to 128 MIDI voices on a single MIDI channel, one voice at a time. Newer MIDI sound modules like the Ahlborn /Galanti™ allows you to play multiple voices over a single channel like a straight organ division.

MIDI Analog Controllers: These are MIDI controllers that control the MIDI module volume, pitch bend (tuning), and other internal variables. The Uniflex 3000 supports the current MIDI Standard Specification regarding analog controllers.

MIDI Fixed Controllers: These are controllers that control the MIDI modules Sustain and other internal variables. The Uniflex 3000 supports the current MIDI Specification regarding fixed (continuous) controllers.

MIDI Set-Note Velocity: This control allows you to set the note velocity you wish to send to the MIDI sound module when you press a key. Velocity values determine the strike force on MIDI percussive instruments, and on some MIDI modules breath pressure control for wind instruments. In certain cases, MIDI Set Note Velocity allows you to have the same MIDI voice available at different velocities on different manuals.

Ahlborn ™ MIDI Stop Control: A special program change function allows the popular Ahlborn/Galanti ™ MIDI Modules to be tied into the console stop switches and combination action for easy setup and operation.

MIDI In The Combination Action: Any MIDI stop may be included in the combination action.

Remote Piston Activation: The Uniflex 3000 allows stops and other control buttons to automatically activate combination action pistons.

Phantom Stops: Phantom stops may be set and programmed through the combination action even though a physical "stop switch" does not exist on the console.

Couple the Couplers: Any coupler in the system may be set to couple the couplers of another division onto the coupled division. This includes floating divisions.

Floating Divisions: Floating divisions may be set to play from any or all manuals and pedals. Top note and bottom note ranges may also be set on any rank.

Floating Division Couplers: Floating division couplers may be set to couple through to all or selected divisions at any pitch. Unison Off is also available for floating divisions.

***Individual Unit Output and Unit Control*:** This allows the control of individual outputs in a number of different ways:

A) Standard on/off normal outputs (no special control)
B) One Shot (key down) detect
C) Upbeat (key release) detect
D) Timed Output (minimum/maximum timing)
E) Reiterate Output (controls single output or complimentary pair of outputs)
F) MIDI Single Note Output

Multiple Consoles: The Uniflex system accommodates additional consoles or remote keyboards. Each console has its own completely independent combination action, and both consoles may be played together without conflict or hardware wars.

Combination Action Features:

Impulse Control Timing: Only the stops required to move are activated by the combination action system. This reduces current requirements and console noise.

Unlimited Memories: There are no limits to the number of combination action memory files you may have. Each user directory can access up to 9,999 combination action piston files. The system supports virtually unlimited users.

Individual Organists Directories: Organists may have individual disk directories where their combination action and recording files may be stored. Guest organists may also create their own directories so no combination action memory files need ever be lost or overwritten.

Organist Directories Can Be Accessed Several Different Ways: Organist directories can be a accessed by the computer keyboard, touch screen display, or push buttons at the console. Easy access buttons allow you to place a simple push button on the console for instant user changes. For example, if you have four different organists, you can place four push buttons, each labeled with the organist's name, in some convenient place on the console key desk. When you push any of the organist's user buttons, the system automatically changes system users, automatically loads the C1 (combination action memory 1 file) for that organist, and gives the selected organist access to 9,999 instant load combination action files. Only a Uniflex system has this kind of power and flexibility.

Blind and semi-Blind Combination Action: The system supports the control of buttons and switches that have no means of movement to be included in the combination action. Incandescent or LED indicators may be programmed to indicate when the control is ON.

***Complete Ranging Freedom*:** The combination action captures both stops and pistons ranges. Individual range settings per combination action memory file may be set completely independent of other combination action files. There are no limits or restrictions on ranging.

Range Display: Pistons may display the stops ranged to them.

Multiple Step Programmable Crescendo: Each combination action memory may have one programmable crescendo memory.

Multi Programmable Tutti: These are fully programmable like the Crescendo.

Multiple Programmable Sforzando: These are fully programmable like the Crescendo and Tutti.

Multiple 999 Step Programmable Piston (Registration) Sequencer: The Uniflex gives you a 999 step piston sequencer that is completely independent from the normal console combination action pistons. Other systems give you only 99 steps. Our piston sequencer builds phantom "pistons" on the fly as they are needed and programmed. Other systems offer a single piston sequencer fixed to the console pistons with a maximum of 99 steps. The Uniflex offers one piston registration sequencer for each combination action memory file. Since there are virtually no limits to the number of combination action files you may have, you can have a separate combination action sequencer file for each song you play. This gives you total freedom without restrictions.

Instant Memory Load: Combination action files load in an instant. The console may be equipped with Seven-Segment numeric indicators or touch screen panel. Push button hardware or touch screen LCD buttons allow for complete combination action management from the console.

Automatic File Backup (AUTOSAVE): Each time a combination piston is set, it is automatically saved. A backup file of the previous piston settings is also created when the Autosave feature is enabled. If the wrong piston was set, it can retrieve the old setting back.

***Overwrite File Protection*:** File over-write protection can be enabled permanently so no files will ever be accidentally overwritten. Temporary overwrite can be enabled from the computer keyboard or by a key switch or momentary button at the console. This prevents unauthorized persons from disturbing or changing someone else's combination action files, erasing, or overwriting recording files.

Combination Action Files Saved to Hard Drive and/or Floppy Disks: The Uniflex system is the **ONLY** system that allows you back up, save, transport, and load your combination action memories to and from a floppy disk. This means that visiting organists may save and re-load their combination action pistons to and from floppy disk(s) and always have them available when playing the instrument on subsequent visits.

Combination Action Files Print Out: Another Uniflex system exclusive is that the combination action files (piston settings) may be printed out. You no longer have to write down your settings. Each piston is identified and all stops set to each piston are printed in a list format. A LIST function displays the stop settings of a piston on the computer monitor.

***Adjustable Stop Action Activation (Pulse) Time*:** The magnet pulse activation time may be adjusted to compensate for all types of stop actions.

***Stop Reversers*:** Reversers may be programmed to control any stop or group of stops on the console.

SFZ and Tutti Reversibles: Traditional SFZ and Tutti may be activated by toe pistons, thumb pistons, or both. Indicator outputs are provided for incandescent or LED indication when the reversible is on.

***Automatic Cancel of Sub and Super Couplers*:** If desired, when 8' coupler reversibles are activated, the 16' and or the 4' couplers, if on, will be cancelled.

***Lamp or LED Outputs Available for Reversers and Stops*:** Every stop switch, momentary button, or reversible button contains provisions for lamp or LED output. Normal illumination occurs when the switch is turned ON. In the case of selective buttons under the control of another stop or the combination action, the indicator output can be inverted or reversed to indicate button selection options.

Record / Play System Features:

The Uniflex 3000 does not require a separate PC or sequencer to record or play back tracks and songs. Since the system is under the control of a PC, the record and play features are in place. As the keys, stops, and expression/crescendo data flow through the system, they are recorded in real time to the computer's hard disk drive.

No Note Drop Outs: Other systems may use MIDI based sequencing software for their record and play back features. These types of systems often experience note dropouts or lost notes like short accent notes when stops are changing or when the expression pedals are used. This is due to MIDI's marginal data transmission rate and slow processing speed when expression data is merged with key data. MIDI was never intended or designed to meet the needs of a multi-manual pipe organ or to serve as a pipe organ record/play system. The Uniflex does not use the MIDI standard for anything other than communicating to or from external MIDI sound producing devices. All recording is done in data stream digital format that is faster than the MIDI standard.

Recordings Saved on the PC Hard Drive Every 10 Seconds: The Uniflex system's exclusive record/play system records all key, stop, expression and Crescendo data in Random Access Memory (RAM) as it is passes through the relay system. The data is then written directly to the computer's hard drive every ten seconds. This means no lost recordings should there be a power failure. The 10 second interval may be altered to one second intervals if so desired.

Thousands of hours of recordings may be stored on the PC's large hard drive, as the recording files are very compact.

Efficient and Fast Real-Time Multi-Track Record and Play: This exclusive feature is found only on the Uniflex system. True multi-track recordings, not overdubs or overlays, allow you to record and play back the most complex tunes. Each play/back track is a separate track representing a separate console created in system memory.

Real-Time Keyboard Display in Record and Play/back: Another Uniflex exclusive feature is that real-time graphic keyboards may be displayed on the computer monitor showing what keys are being played live or from recordings. Uniflex is the only system to offer this feature without extra charge.

Unlimited Number of Single Recording Tracks: There are no limitations on the number of single track recordings that can be handled by the system. The only limitation is the amount of disk space on the computer's hard disk drive.

Unlimited Number of Multi-Track Recordings: With MIDI based record/play systems, multi-tracking is simply not available. Most other systems allow only single pass recordings to be made**.** The Uniflex has no restrictions on the number of single or multi-track recordings that can be stored or recalled from the hard disk drive. The only limitation is the amount of disk space on the computer's hard disk drive. A 4.0 GB hard drive will typically hold 3,000 to 4,000 hours of recordings, depending on the size of the instrument.

Unlimited Recording Time**:** MIDI sequencer based record/play systems restrict the recording time available to the limited size of the floppy disk. This varies from machine to machine. Some MIDI recorders limit song files to 64K of memory. If the memory is exceeded, or the disk fills up, some or all of the recording will be lost. The Uniflex system has no restrictions on recording time or recording length.

Unlimited Number of Recording-Artists Directories: Another unique feature of the Uniflex system is its ability to allow individual organists their own individual and private directories for organ definition, combination action, and recording files**.**

SPLIT Long Song Files into Individual Tracks**:** Yet another Uniflex exclusive is the SPLIT command which allows you to cut out the dead time between songs and SPLIT each individual song from the original song file into individual track files. The original full length track is left intact.

Queued Jukebox Track Play/back: Any song can be queued to play back in any order, Jukebox style. Simply select a tune list and enter the order of the selections you wish to hear. The system will play back your song list just as you have specified.

Each Track Recording Can Be Titled: Song and track files may be given titles up to 25 characters. In addition, each song or track file is automatically time and date stamped as it is created. All file names and titles may be viewed on the monitor at any time. When a song track is playing, the title is automatically displayed.

Tempo Adjust and Set: Each track can be played back at standard tempo, reduced tempo, or increased tempo. The system also allows you to set a new tempo permanently if so desired.

Built-In Metronome with Adjustable Tempo and Meter: The system uses the fast and precise computer clock to allow a built in metronome. Measure tick and downbeat tick can be programmed to activate external sound devices or set to activate percussion instruments within the organ such as bass drum or wood block. The metronome timing can be sent out as a MIDI output address.

Remote Record and Play Controls: Wireless and wired remote control can be easily added or programmed to allow total control of your record and play/back system. Any laptop computer with a standard network connection (wired or wireless) can be used to control the main relay computer.

Record Punch IN and Punch OUT while Playing Back: While a track is playing back, the organist has the ability to quickly punch in additional notes, riffs, glissandos, or a completely new track instantly and in perfect synchronization.

***Re-Record Tracks*:** If you do not like the way a recording started out, just type RR for Re-Record and the track is automatically erased and a new recording starts automatically.

***Incremental Tempo Adjust*:** Record or play/back tempo fine tuning is available in single tick increments up or down in real time as the song is played. Once adjusted, the new tempo can be permanently set to the track.

Full MIDI implementation for MIDI IN and OUT: The standard Uniflex system provides full implementation for 16 MIDI channels IN and 16 MIDI channels OUT. There are no system restrictions or limitations on MIDI other than the standard or current MIDI specification.

Parallel Raw MIDI Recording: Raw MIDI data from external MIDI keyboards, including Key Velocity information, can be recorded in parallel with the console data for duets. Yamaha Disclavier™, Piano Disk™, QRS PianoMation™ and other brands of MIDI reproducing pianos with velocity sensitive keyboards may be recorded with full velocity and played back with the full organ exactly as originally played. This is the only system available to allow perfect record and play synchronization with the pipe organ.

Song File Merge: Multi-track recordings can be merged together into a single Song file.

Stop Tabs and Draw Knobs MOVE on Play/back: The stop actions may be set to move ON and OFF when playing back previously recorded tracks. This is very impressive for demonstrations and tours when an organist cannot be present.

Console Remains LIVE During Play/back: The console and combination action are live at all times, including during play/back.

Time and Date Stamps on ALL Files: Each time a recording is made, or a combination action or definition file is changed or modified, the file is time and date stamped and backed up. In addition to this, a 25 character title can be assigned to any file for easy recognition.

Overall System Features:

On-Line Visual System Help Files Built IN: No matter where you are in the system, if you are stuck or cannot remember a command, help is a key-press away. Help displays command syntax and tips for global system operation.

Custom On Line Help Files: The Uniflex on line help system also allows for the individual user to create his/her own help files. This means you can put in your own help and procedure lists the way you want or need things explained.

Multiple ORGAN Definition: The Uniflex system is the only system available that allows different organ definition specifications to be created, modified, stored, and instantly loaded for the same organ. This gives organists room to experiment with both the music and the organ.

Every System File May be Backed Up: Any definition file, combination action file, or recording track file may be backed up in redundancy for complete safety and security. Files may be backed up to other directories or to external drives like the popular ZIP drive. As long as the back ups are made and kept current, there is never a fear of losing data.

Easy System Expansion: *The* Uniflex system is one of the easiest systems to expand. You simply add input and/or output boards to the existing system and play.

Quality Construction built to last: The system hardware is built to exacting specifications and quality. Our first systems installed over 25 years ago are still running today.

Seventeen Years of Proven Field Experience: Uniflex systems were the first Digital Computer Controlled Systems on the market, and continue to be the only truly PC controlled systems. Our competitors are unable to match our flexibility, processing power, speed, or standard features. Uniflex systems are known to be the longest running, multi-tasking, digital relay systems.

Transparent Operation: Even though the system is rich with features, it is designed to operate transparently. You do not need to manually "control" the system unless you want to do so. It works in the background without any assistance from the organist.

English Language Programming: Our fill-in-the blank English language programming is unmatched. No symbols or cryptic computer code are used. All programming is presented to the user in a simple, fill in the blank format. All the programming for the system and organ definitions may be included or may be created on site.

In Conclusion:

We encourage you to compare before you purchase. Compare the features of the Uniflex 3000 to our competitors, including our ease of installation, minimal wiring requirements, programmability, expansion capability, and cost value. We are certain that the comparison will verify our belief that the Uniflex 3000 provides the unique flexibility found in no other system. Why not select the only system that runs from a PC, the Uniflex 3000? No need to add anything and it works the first time, every time. Please contact us if you have any questions or if you would like a quotation on your project. We welcome your questions and comments.

Uniflex Relay Systems

"Uniquely flexible"

"Controlling the wind that drives the pipes of the future"

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