EXTERNAL INTERFACE 7

7.1 External Interface Wiring

External monitoring and control of the IntelliRay is possible by wiring to the unit's rear panel 15 pin connector, using the optional Remote Interface Cable (Uvitron P/N UV00000526). See fig. 6 below for wiring schematics of typical configurations.

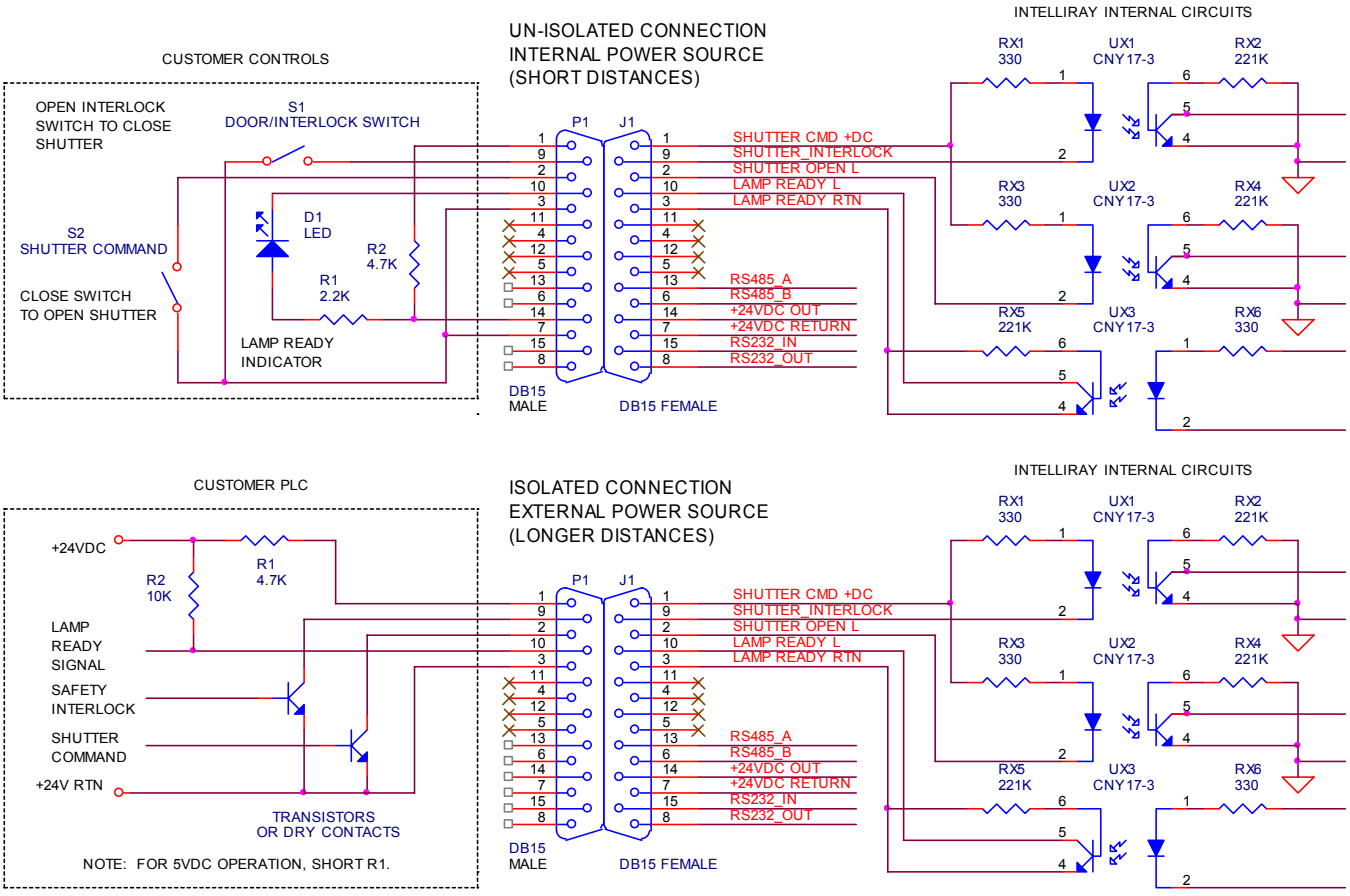

Fig. 6, Signal interface wiring diagram

EXTERNAL INTERFACE (CONTINUED) 7

The DSUB interface connector pin descriptions are listed in the table below. For applications utilizing the optional UV00000526 Interface Cable, wire names and colors are also included.

Pin Number	Signal Description	Interface Cable Wire Name	Interface Cable Wire Color
1	Shutter command input DC power	CONV_SIG+	BLUE
2	Shutter command input, LO=open, HI=close	CONV_OPT_SEN	VIOLET
3	Lamp Ready/Shutter Open signal return	CONV_RTN	YELLOW
6	RS485B	RS485B	TAN
7	+24VDC return	SERIAL-	RED/BLACK
8	RS232 out	RS232_OUT	RED/YELLOW
9	Shutter Interlock signal, LO=normal, HI=interlock active (shutter closes)	SPARE4	GREEN
10	Lamp Ready/Shutter Open signal, LO=lamp ready, HI=lamp warming up or shutter open	CONV_PWM	BLACK
13	RS485 A	RS485A	PINK
14	+24VDC out	SERIAL+	ORANGE
15	RS232 in	RS232_IN	RED/GREEN

7.2 Logic Signal Descriptions

The *Lamp Ready/Shutter Open signal* is a dual function status output from the curing system. During the warm-up period, the signal remains in a high (no conduction) state, and will drop low to signal the warm-up interval is complete. Once the shutter is commanded to open (either by the keypad or external interface connector signal), the Lamp Ready/Shutter Open signal will again return to a high (no conduction state) as soon as the shutter has reached its fully open position. When the shutter is commanded to shut, the signal will drop back low again once the shutter has reached its fully closed position. The toggling of this signal with shutter position, allows an external PLC or controller to confirm the shutter has reached its newly commanded postion.

The *Shutter Command Input* can be used to externally control exposure time of the curing system. When controlling the shutter from the shutter command input, the exposure timer should first be set to manual by entering a value of zero at the front panel keypad (refer to Exposure Time in section 6.5). This setting will only have to be made once, since it will be stored in non-volatile memory and recalled after power is cycled. When the shutter input is

EXTERNAL INTERFACE (CONTINUED) 7

pulled low, the shutter will open, and when the signal returns to a high level (non conduction state), the shutter will close. If it is desireable for the external signal to only initiate shutter opening, with the IntelliRay performing exposure timing, then the exposure time setting can be set to a non-zero value at the unit's front panel keypad. In this case when the signal goes low, the system will open the shutter for the exposure time interval set at the keypad, and then the shutter will close automatically.

Timing for the control signals is shown below in fig. 7:

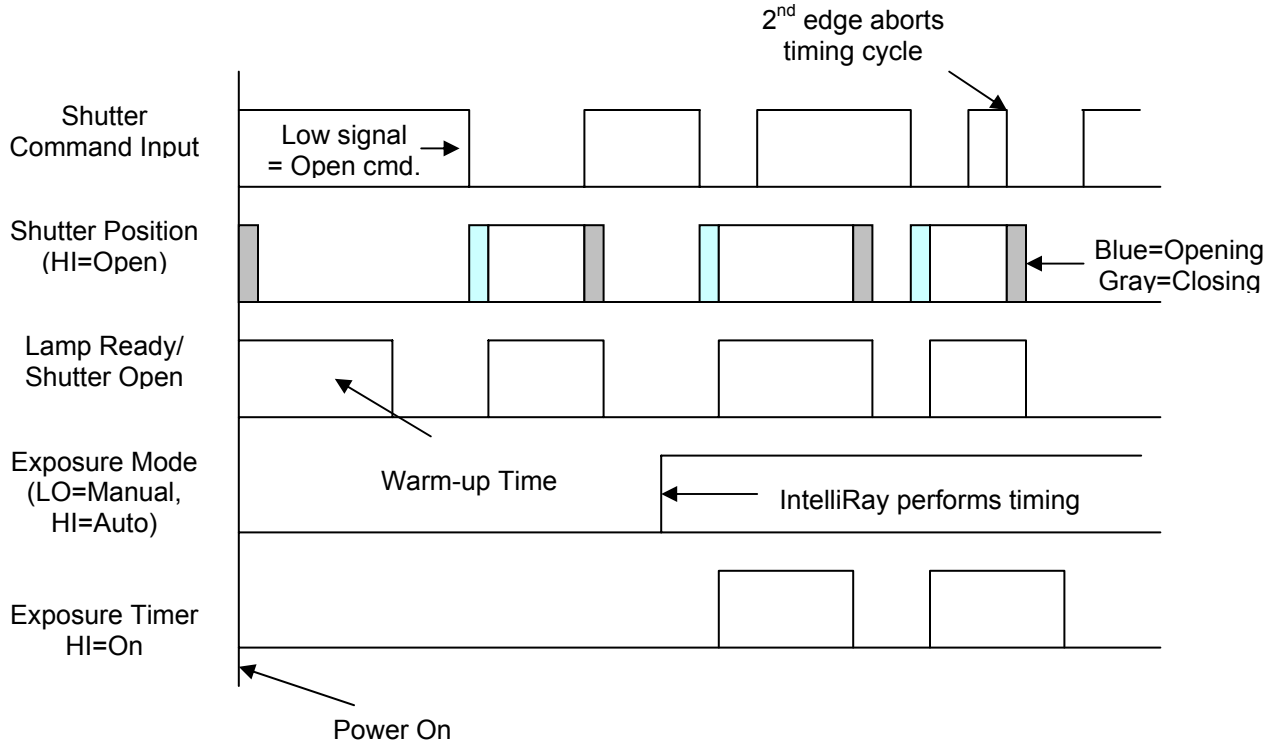

Fig. 7, Signal interface timing

The *Shutter Interlock signal* provides a way to interrupt the system's exposure cycle for cases where a safety switch on a door or access panel is opened on customer equipment, or when the IntelliRay is used in conjunction with the optional UV00001080 Rayven curing oven. This signal only becomes active once it is enabled in the Setup Menu (see Interlock ON/OFF menu item **S6** in section 6.6). In order for the shutter to operate normally while the interlock is set to on, the interlock signal must be shorted to its respective return signal. If the interlock signal transitions high (no conduction) state during exposure, the shutter will immediately close, the current timer count will be held on the LCD display, and the Standby light will flash to signal the user that the interlock has opened.

EXTERNAL INTERFACE (CONTINUED) 7

7.3 Foot Pedal Control

The system's shutter can also be controlled using an optional foot pedal (Uvitron P/N UV00000725), allowing for hands-free operation. The foot pedal connects to the IntelliRay's rear panel DSUB connector. When the exposure is set to timed mode, a momentary press of the foot pedal will cause the shutter to open for a duration specified by the exposure time setting. After the requested time has elapsed, the shutter will automatically close. To prematurely terminate exposure before the timer has expired, the foot pedal can be pressed a second time, and the shutter will close.

When the exposure time is set to zero (manual timer mode), the shutter will be held open as long as the foot pedal is pressed down. As soon as the pedal is released, the shutter will close. If it is desirable to have manual pedal control of the shutter position without having to continuously hold down the pedal, the exposure timer can be set to a higher value than what is desired, and the pedal can be alternately pressed to open and close the shutter.

7.4 Serial Port Control

The system can be controlled remotely via a PC serial port using the optional Microsoft Windows™ compatible IntelliRay Curing System Control program (Uvitron P/N UV00000527). To connect the curing system to the PC's serial port, either the RS232 Interface Cable (Uvitron P/N UV00000525), or the RS485 Remote Interface Cable (Uvitron P/N UV00000526) may be used. The IntelliRay software allows for complete monitor and control of all system functions from an easy to use graphical user interface. The program also allows multiple curing systems to be networked using the individual addressing capability of the RS485 communications protocol. (Refer to the IntelliRay Software instruction sheet provided with the program CD for more information on serial port control.)