RT-1000 SERIES DIGITAL RANGE TIMER
REVISION 1.2

The Digital Instruments RT-1000 Series Digital Range Timer is a microprocessor based timing and control device, specifically designed to meet the needs of small to medium sized shooting ranges. The standard device offers basic range timing and control functions. Numerous optional upgrades offer various types of output relay configurations, internal power supplies for target servos or solenoids, wireless remote control, and an audio range command generator are available. Digital Instruments can also provide custom timer settings, output control functions, and customer specific branded front panel overlays.

The basic model provides the following:

1. Ergonomically designed, sloped panel instrument case.
2. Precision timer and controller using 16 bit 68HCS12 microprocessor.
3. Rotary switch with 12 preprogrammed timer settings.
4. Two line by 20 character high contrast status display.
5. Timed, face lock and edge lock mode switches.
6. Start/reset push button switch.
7. Four mode and two target position indicator LEDs.
8. Internal , 8 Amp DPDT or DP3T target control relay.
9. Robust XRL type output connector.

OPERATING MODES:

POWERUP AND SELF TEST MODE – Immediately after the power switch is turned on, the unit will run a set of diagnostics on the microprocessor controller. If everything is operational, the display screen will show the Digital Instruments contact information. After several seconds the unit part number and software edition will be displayed.

RANGE CONTROL MODE :

1. After self test mode has been completed, and the unit has the MODE switch set to Timed, the unit enters range control mode. The display will show the course of file selected by the rotary switch, and the time in minutes and seconds for that course of fire. The green Target Edged and yellow Timed LEDs will be illuminated. If the course of fire switch is changed, the LCD display will change to display the course of fire name and time associated with that switch setting.
2. During this mode, the red START/RESET button may be depressed to initiate the currently set course of fire. Once this button is depressed and released, the targets will face, the red Target Faced LED will illuminate, and the timed LED will have a steady yellow color. The display will count down until time expires, and then the targets will edge, the green Target Edged will illuminate, and a COURSE OF FIRE COMPLETE message will be displayed on the LCD display. After 4 seconds, the unit will be ready to run the course of fire selected by the course of fire rotary switch.
3. If the course of fire needs to be terminated before time has expired, the START/RESET button may be depressed. This will turn the targets to the edged position, illuminate the Targets Edged LED, and display a TERMINATED BY RANGE OFFICER message on the LCD display. After 4 seconds, the unit will be ready to run the course of fire selected by the course of fire rotary switch.
4. The START/RESET button may be used to activate a timed cycle in two different ways. The button is configured to begin a course of fire when the button is released. The user can depress the button at any time during the pre-firing range commands. After the last command is given, the button is released to begin the course of fire that was set by the course of fire rotary switch. This eliminates the need to hunt for the switch, while monitoring the firing line, which can result in less precise activation timing. If precise activation timing is not required, depressing and immediately releasing the switch is an option.

LOCK MODES:

1. FACE LOCK – When the MODE switch is set to FACE LOCK, the targets are locked in a faced position, the face locked LED is illuminated yellow, the TARGET FACED LED is illuminated red, and the LCD display shows a FACE LOCKED TARGETS message. The START/RESET button is disabled.
2. EDGE LOCK – When the MODE switch is set to EDGE LOCK, the targets are locked in an edged position, the edge locked LED is illuminated yellow, the TARGET EDGED LED is illuminated green,

and the LCD display shows a EDGE LOCKED TARGETS message. The START/RESET button is disabled.

OPTIONAL SINGLE BUTTON WIRELESS REMOTE MODE:

1. The single button remote mode provides the functionality of the START/RESET button on a wireless remote controller.
2. When the wireless remote button is depressed and then released, the course of fire set on the course of fire rotary switch is activated. Operation mimics when the panel mount START/RESET switch is depressed, except the timed LED will rapidly flash yellow to indicate that a wireless activation occurred.
3. If the course of fire needs to be terminated before time has expired, the wireless button or panel mounted START/RESET BUTTON may be depressed. This will turn the targets to the edged position, illuminate the green Targets Edged LED, and display a TERMINATED BY RANGE OFFICER message on the LCD display. After 4 seconds, the unit will be ready to run the course of fire selected by the course of fire rotary switch.

OPTIONAL REMOTE CONTROL MODE:

(1) The optional remote control mode provides the same functionality of the single button wireless mode, plus the ability to remotely run 3 preprogrammed courses of fire without setting the panel mounted course of fire rotary switch.
(2) Wireless button D replicates the single button wireless remote mode.
(3) Wireless buttons A, B, and C are used to activate three factory programmed courses of fire.
(4) When the rotary course of fire is set to remote control, and wireless remote button A, B, or C is depressed and then released, the course of fire programmed for that button is activated. Operation mimics when the panel mount START/RESET switch is depressed, except the timed LED will rapidly flash yellow to indicate that a wireless activation occurred.
(5) If the course of fire needs to be terminated before time has expired, any of the wireless buttons or panel mounted START/RESET BUTTON may be depressed. This will turn the targets to the edged position, illuminate the green Targets Edged LED, and display a TERMINATED BY RANGE OFFICER message on the LCD display. After 4 seconds, the unit will be ready to run the course of fire selected by the course of fire rotary switch.
(6) The standard configuration of the 4 button wireless transmitter is:

> Button A - NRA Rapid Fire
> Button B - NRA Timed Fire
> Button C - NRA Slow Fire
> Button D - Single Button Remote