

LynTec PDS-10 series Power Delay Sequencer

Relay based power sequencer for sound systems — Turns on front-end gear first, power amplifiers last
Protects expensive loudspeaker systems from damaging power-on or power-off click & pop transients

- Tested, complete package — low labor — mount next to any circuit breaker panel to sequence AC power "hot" lines
- Time proven, reliable, G-E RR7P3 latching relays snap in and have low voltage plug-in connectors
- Low power consumption — no continuous relay coil current — runs cool for long life
- Diagnostic LEDs and internal ON - OFF test switches speed installation for testing and troubleshooting
- Cabinet and all components connected to high voltage are UL listed — low voltage electronics are isolated.
- 4, 8 or 10 20/30 A circuits — 120 or 240 volt models available
- Up to 6 **One Touch** remote control locations possible
- Kill function uses external contact for instantaneous shutdown.
- HurryOff function shuts down immediately if you hold down any OFF button for 2 seconds.
Great for Ohh.... no..... situations.
- Daisy-chains for unlimited circuit count. Interfaces with LynTec MSLC, MSP, SLC, SP or multiple PDS sequencing systems.



New Features

- Multiple delay options.
- Variable step rate
- Completion contact option on last step can be used for additional indicators or to trigger more equipment.

ONE TOUCH REMOTE POWER CONTROL

SHOWN ACTUAL SIZE



Green LED illuminated

Red

SS-2 Sequencer Switch Set

One SS-2 switch set is supplied with each panel.

How they work

Applies AC to low level, front-end electronics... waits for them to stabilize... (clicks and pops are ignored by un-powered power amplifiers)...

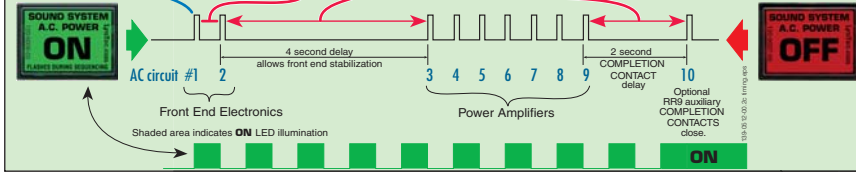
AC is then sequenced to power amplifiers spreading high inrush currents over time.

Protects valuable loudspeaker systems by delaying turn-on until all low level equipment has stabilized.

PDS-10 series INTERIOR and WIRING

HOW IT WORKS

Sequencer pulses on and off coils of latching power relays.



Easily selectable Circuit jumpers set field adjustable programming

This circuit breaker panel is shown for illustration purposes and is not sold by LynTec.

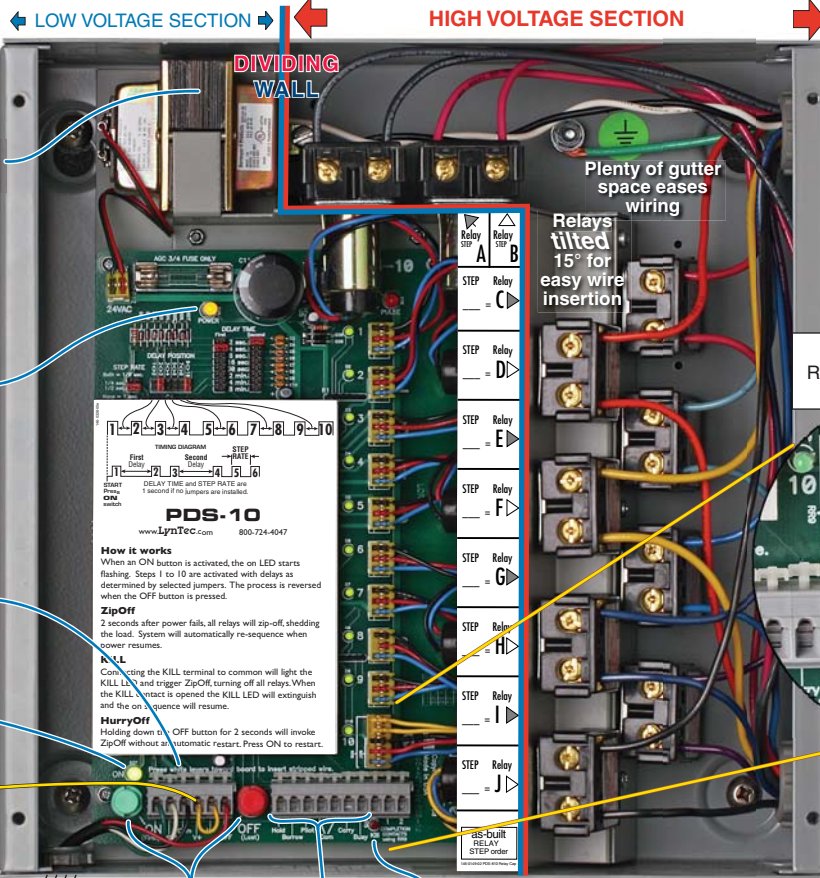
To avoid nuisance circuit breaker tripping on high inrush current devices, specify High Magnetic circuit breakers.

High Magnetic type breakers typically have the **HM** suffix such as Square D QO120HM, Cutler Hammer CH120HM or G-E THQL1120HM.

24 V — 40 VA Power transformer. Connect to 10A circuit breaker. Mark

SEQUENCER POWER

with supplied label.



15A or 20A circuit breaker "hots" feed sequenced relays

-CC option RR9 Replaces RR7 to add Completion Contacts.

Sequenced "hots" to receptacles

POWER led

Lever actuated cage-clamp terminal strips.

Press white levers toward board to insert stripped wire.

ON led Flashes during sequencing, stays lit at end of on sequence.

V+ to V- jumper must be in LAST sequencer in system to guarantee ON led stays on at the end of the on sequence.

Test switches provide local control for troubleshooting remote switch wiring.

Expansion terminals for daisy-chaining to other LynTec sequencers

Connect Kill line to Common with external switch for immediate shutdown. Kill led lights to indicate external switch closure. Sequence resumes operation when switch opens.

GE RR7P3 Latching Relay



GE RR7 and RR9 Relay ratings

- Power Contacts: Latching
- 20A Tungsten, 125Vac 1/2HP motor at 110-125Vac
- 30A Ballast, 277Vac 1 1/2 HP motor at 277Vac
- 30A Resistive, 277Vac
- 20A Ballast, 347Vac 1 1/2 HP motor at 220-277VAC
- 20A Resistive, 347Vac

FOR COPPER WIRE ONLY

This product is NEC 110 Compliant when used in accordance with the following: Suitable For Use On A Circuit Capable Of Delivering Not More Than 10 kA Sym. Amps., 277 Volts Maximum. UL Listed 508G Industrial Control Equipment — CSA certified

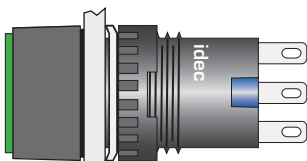
Low voltage characteristics — RR7P3 and RR9P5 P3 and P5 suffixes denote a 3 pin and 5 pin, .156" AMP or Molex connector respectively.

RR9 pilot contact rating: (COMPLETION CONTACTS) Normally open, 1A, 24 VAC isolated, close at end of on sequence. Actuating coils: 21-30 Vac (class 2) Momentary. OFF (1-black), ON (2-red), Common (3-Blue) 55-60 Ohms DCR, each coil.

Supplied SS-2 remote Switch Set — Actual Size



Wiring: Typically "half" of a Cat 5 cable. 4 conductors - 22-26 ga. - 5,000 ft. max.



Switches mount in 5/8" dia. round holes on 1" centers in material up to 1/4" thick. Solder wire connections.

SPECIFICATIONS — LOW VOLTAGE SECTION — Class 2

RELAY CONTROL CIRCUITS

10 ON and 10 OFF RR7P3 relay coil drivers.

RELAY DRIVER CHARACTERISTICS

Each 3 pin header is connected to ON and OFF open collector NPN transistors. Built-in reverse EMF snubber diodes connect from the collector to the sequencer's built-in +35 volt supply.

Relay drive capacity: One RR7 coil (530 mA. max.) NEVER parallel relay coils!

Relay ON/OFF pulse width and spacing: Variable

RELAY SOURCE — ZIP-OFF LOAD SHEDDING

The +35 volt internal dc relay supply has a PULSE CURRENT indicator for visual as well as aural troubleshooting. Each time the LED flashes a relay should click.

All latched-on relays are zipped-off 2 seconds after power fails, shedding the load.

ZIP-OFF minimizes the surge load when power resumes.

The sequencer remembers if the system was ON and automatically re-sequences when power resumes. No manual reset is required.

Short protection: A 0.75A Fuse protects in the event of a short.

REMOTE CONTROL CHARACTERISTICS

A momentary contact from **ON** or **OFF** to COMmon is required to activate the ON or OFF function in the sequencer.

The **SS-2** Sequencer Switch Set (one set supplied, up to 6 supported) provides easy-to-mount switches, with built-in film legends, to remote control the AC power. Switches are IDEC AL6 series.

Mount in 5/8" diameter round holes on ≥ 1 " centers.

Typical remote switch current: 9 milliamperes.

Minimum closure time to initiate sequence: 25 milliseconds.

Open circuit voltage appearing at **ON** and **OFF** terminals: +30 to +35 volts.

REMOTE PILOT LED OUTPUT

Pulsed 12 volts DC will drive remote pilot **ON** LEDs up to 200 ma. or 6 - SS-2's.

All pilot LEDs flash once per second during the sequence cycle.

All pilot LEDs glow continuously at the end of the ON cycle if the POWER VERIFICATION terminals are bridged by a resistance lower than 100K Ω .

Output protection: Short circuit protected, automatically resets after fault clears.

LOW VOLTAGE CONNECTIONS

Relays: 3 position, .156" center male headers to mate with GE RR7P3 relays. 5 position, .156" center male headers to mate with GE RR9P5 relays for CR option.

Remote Control Wiring: 4 conductor, 22-26 gauge wire, solder to SS-2 Switch Set and connect to spring-lever actuated, cage-clamp terminals in the sequencer.

LOCATING RR7 RELAYS REMOTELY

In some instances it is desirable to locate one or two RR7 relays at a location other than the PDS-10 cabinet. Example: Control room electronics need to be sequenced but they are located several hundred feet from the power amplifier racks. The PDS-10 is located near the power amp racks. RR7's may be driven remotely via a 3 wire, low voltage cable for one or a 5 wire cable for two relays.

Wire sizing minimums: ≤ 75 ft. run, use 22 ga., ≤ 125 ft. run, use 20 ga., ≤ 200 ft., use 18 ga., ≤ 300 ft. run, use 16 ga. RULE: Keep loop resistance $\leq 2.5\Omega$.

Connect to PDS-10 board mounted plugs with AMP or Molex 3 pin housing: Digi-Key WM2123-ND & 3 crimp pins per relay: Digi-Key WM2300-ND. Five pin connector for CR option is Digi-Key part # WM2103-ND.

Digi-Key: 800-344-4539. Independent control of these remote relays is also possible. Example: Turn on control room only. Call LynTec for details.

PDS-10 POWER SOURCE REQUIREMENT

24 volts AC, 50/60 Hz, ≤ 6 watts.

SPECIFICATIONS — HIGH VOLTAGE SECTION — Class 1

AC POWER CONTROL

GE RR7 and RR9 Relay ratings — see page 2

NOTE Tungsten lamps have high inrush currents similar to power amplifiers.

SEQUENCER POWER TRANSFORMER

INPUT VOLTAGE	Standard PDS-10: 120 volts $\pm 15\%$ overseas PDS-10: 240 volts $\pm 15\%$
FREQUENCY	50/60 Hz
OUTPUT VOLTAGE	24 volts @ 40 VA., 27 volts, No Load.
UL Listed	428L, Class 2 B6
CUL Listed (Canadian)	428L, Class 2 B6
	120 volt: (Dormeyer # DCT-40-120)
	240 volt: (Dormeyer # DCT-40-240)

The sequencer power transformer should be connected to a separate 10 Amp circuit breaker and labelled SEQUENCER POWER.

CABINET

GE RBS2 REMOTE CONTROL CABINET — surface mount

Type 1 Enclosure "INDOOR USE ONLY" — UL Listing: 508G Industrial Control Equipment

MECHANICAL

Size: 12.4" square x 3.5" high max. Cover attached with 4 — 10-32 screws.

Mounting: Cabinet has 4 raised mounting dimples with 1/4" holes on 10" vertical and horizontal centers for surface mounting.

Orientation: Any position. Weight: 15 lb.

Shipping Weight: 17 lb. Shipping size: 15.5" x 15.5" x 6.5", .9 cu. ft.

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SPECIFYING & ORDERING DETAILS

Any number of LynTec sequencers may be daisy-chain cascaded; **PDS-8EK's**, **MSLC** & **S LC** series Sequencing Load Centers or **MSP** & **SP** series Sequencing Panelboards.

PDS-10 Power Sequencing System

Includes: Cabinet and cover with the following installed: 120 v, 50/60 Hz power transformer, sequencer, and 10 ea. GE RR7P3 relays. One SS-2 switch set is supplied.

PDS-10-4

Same as above but only loaded with 4 RR7P3 relays for four circuits.

PDS-10-8

Same as above but loaded with 8 RR7P3 relays for eight circuits.

PDS-100V , PDS-10-8KOV PDS10-40V

overseas part number suffix for 240v, 50/60 Hz operation.

A GE RR9 relay can be added in the #10 position to provide completion contact capability. Please indicate the **CC option** when specifying. (ex. PDS-10**CC**)

SS-2 Switch Set.

OFF and illuminated **ON** switches with built-in film legends. One set included with each PDS-10 system, Up to 6 total supported for multiple location remote control.

SS-2PL Locking Switch Plate (photo on page 3)

A locking key switch to restrict access installed with a SS-2 switch set in a single gang stainless steel wall plate. **ON** and **OFF** switches may be field rotated for horizontal mounting. All locks are keyed alike.

SS-2LRP Locking Rack Plate (photo on page 3)

A locking key switch to restrict access installed with a SS-2 switch set in a single rack plate. All locks are keyed alike.

RR7P3 Latching relay. (P3 = 3 pin, .156" Plug). (photo on page 2)

For more than 10 circuits, 208 v. circuits or 30A circuits see

MSLC series Sequencing Load Centers or **MSP** series Sequencing Panelboards
(photo on page 3).

In the interest of product improvement, specifications are subject to change without notice — see web site for the most current data.

www.LynTec.com

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