Ballast Interface Matrix Switch
1596

The 1596 is a chassis based on the XITRON 1500 family load/line switch chassis for the 2574R ballast test instruments. It connects a standard ballast to the 2574R using the wiring colors.

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The 1596 incorporates a phase programmable line switch and has space for up to 5 additional 1580 series line switches which may be used for additional line switching or for line source selection, configurable by the user.

Ballast Wiring

All wiring for the ballast, with the exception of the ballast safety ground, connects to the rear panel of the 1596 using the ballast wire colors — Black, White, Red (up to 2 wires), Blue (up to 3 wires), Yellow (up to 2 wires), Blue/White (up to 2 wires), Brown (up to 2 wires).

According to the wiring chart selected in the 2574R configuration (Ballast Type & Wiring) menu these signals are connected to the correct terminals of the 2574R by relays contained in the 1596. The wiring charts supported by the system are updated as required. Wires not used for the configured chart are always open circuited.

The Line wire (Black) is switched with a SCR switch/relay combination to achieve high inrush capability and phase control, while maintaining a low on resistance for low voltage drop.

Flexibility

The connections provided by the 1596 may be disabled (all ballast wires open circuit) by selecting a non-chart configuration in the 2574R, allowing the user to support additional wiring schemes. It is also possible to define test steps in the 2574R which will open circuit all ballast output wires, the user should ensure that all switching as a result of these test steps is performed under no signal conditions.

Connections

All ballast connections are made to the 1596 using 4-pin "Internal PC Power" type connectors. All analog connections to the 2574R are made using 4-pin "Internal PC Power" type connectors. The digital connection to the 2574R uses the RJ45 type connectors as for a 15xx family chassis.

CONDENSED SPECIFICATIONS

(Contact XITRON for complete specifications)

Physical Specifications:

Power Input: 80-265 VRMS autoselect, 50/60/400 Hz @100 VA max

Size: (HxWxD) 4-1/2″ x 11-1/2″ x 10-1/2″

Weight: 16 lbs. (7.3 kg)

Operating Range: 0ºC to 45ºC, <85% RH @ 40ºC non-condensing

Storage Range: -30ºC to 65ºC, <95% RH @ 40ºC non-condensing

Line:

Max. Line Voltage: 2.5kV peak max. (1596) for 1 minute

Max. Line Source Voltage: 600V rms, 1kV peak, max. continuous

Line Frequency: 30Hz to 600Hz

Turn On Phase: Programmable 0 to 359° via 2574R, 1° + 20µs accuracy

Max. Line Inrush Current: 250Apeak (1 cycle) max

Max. Line Carry Current: 3Arms max. continuous

Switching Time: Less than 2 cycles of line (assumes line present prior to switch). Add 5 cycles of line if line presented at same time as commanded on

Ballast Output:

Max. Voltage: 2.5kV peak max. continuous

Max. Carry Current: 5A rms max continuous

Switching Conditions: Always switched under no voltage conditions

Switching Time: 10ms max

Reliability:

Typical relay life is specified as 3 million operations, this assumes all switching is performed under no load conditions. Other than the line switch, switching is only performed when needed for a change in the ballast wiring configuration

ORDERING INFORMATION

PART#	Description
1596	Ballast Interface Matrix Switch
MO1596	Additional Operating Manual

QUALITY AND RELIABILITY

XITRON Technologies, founded in 1990, is the premier source of precision power testing and measurement instruments for industrial manufacturing and medical electronics. Using the latest digital signal processing and circuitry, XITRON's sophisticated technology gives our customers the edge in design verification and product manufacturability. XITRON is ISO 9001:2000, EN46001 registered, and FDA (GMP 820) compliant.

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