Relays, Contactors, Solenoids and PDUs for High Performance Applications

28 VDC CONTACTORS

HARTMANN Lightweight 28 Vdc Contactors
- Main contact ratings to 1000 A
- Available with a variety of auxiliary contact arrangements
- SP12 and SP15 main contact forms
- Standard, reverse current and automatic dropout types
- Hermetically-sealed models in conventional or bus bar mounting

270 VDC CONTACTORS

KLOVEX Lightweight Contactors Designed to Switch 270 Vdc and 600 A
- Nominal current up to 2700 A
- Voltage isolation from 5 to 600 Vdc
- Direct-actuated models with normally open or normally closed main contacts
- Non-position sensitive hermetically-sealed models for side or bottom mounting
- Available with a variety of auxiliary contact arrangements
- Latching and non-latching types

CRYSTAL CAN RELAYS

- For 28 V, 1/2 and Full Size Crystal Can Relays
- Hermetically-sealed in 28 V, 1/2 size or full size crystal cans
- Terminals are arranged on .200" grid (1/2 and full size) or .150" grid (28 V size)
- Suitable for all contact arrangements including bridging or mounting bars
- Non-latching or latching designs
- Choice of straight pins or solder hooks
- MIL-P-53777 and MIL-P-9390 qualified products available

PDUs

Customized Lightweight Power Distribution Units
- For primary and secondary power distribution
- Modular systems consist of various plug-in and bus bar line replaceable modules (LRMs) installed on a panel mounting system or backbone
- LRMs may be contactors, circuit breakers, sensing units, etc.
- Backplanes, designed as a fault-free zone with no moving parts, are intended as a permanent installation on the vehicle
- Optional current/voltage sensing, fuses, circuit breakers, power monitors, etc.
- Weight-saving and space-saving designs reduce OEM labor requirements and ease maintenance
- Optional integration of generator control units and logic control units

FOR MORE INFORMATION

Technical Support

Internet: www.te.com/ADM
E-mail: product.info@te.com
USA: +1 (800) 522-6752
Canada: +1 (905) 470-6605
Mexico: +52 (0) 1-55-5848-3500
Europe: +31 (0) 73-624-0000
South America: +55 (0) 21-2103-2500
Switzerland: +41 (0) 26-490-6100
Great Britain: +44 (0) 870-600-2928
France: +33 (0) 1-3420-8686
Netherlands: +31 (0) 73-624-999
China: +86 (0) 400-820-6015

© 2011 Tyco Electronics Corporation. All Rights Reserved.
FOR MORE INFORMATION

Technical Support

Internet: www.te.com/ADM
E-mail: product.info@te.com
USA: +1 (800) 522-6752
Canada: +1 (905) 476-6665
Mexico: +52 (55) 156-3844
Europe: +353 (0) 1499-1100
South America: +55 (0) 11-3832-2506
China: +86 (0) 400-820-6015

CII, HARTMAN, KILOVAC, TE Connectivity, TE connectivity (logo) and TE (logo) are trademarks of the TE Connectivity Ltd. family of companies. Other logos, product and Company names mentioned herein may be trademarks of their respective owners.

While TE has made every reasonable effort to ensure the accuracy of the information herein, nothing herein constitutes any guarantee that such information is error-free, or any other representation, warranty or guarantee that the information is accurate, correct, reliable, or current. The TE entity issuing this publication reserves the right to make any adjustments to this information contained herein at any time without notice. All material contained herein is subject to change without notice. The information herein is not intended for inclusion in contracts or purchase orders unless specifically written into a purchase order. The information herein is not intended to be a representation of capability, nor should TE component qualification be assumed from this form. The information herein is not intended to be a representation of capability, nor should TE component qualification be assumed from this form. The information herein is not intended to be a representation of capability, nor should TE component qualification be assumed from this form. The information herein is not intended to be a representation of capability, nor should TE component qualification be assumed from this form. The information herein is not intended to be a representation of capability, nor should TE component qualification be assumed from this form.

9-1773446-6   ADM   2.5M   06/2011

CII TO-5 and .100 Grid Low Signal Relays
- Miniature hermetically sealed relays
- Non-latching, single-coil or dual-coil latching designs
- Through hole and gull-wing surface mount terminals
- Numerous mounting options
- Choice of straight pins or solder hooks
- MIL-PRF-45266 and MIL-PRF-45266 qualified products available

CII Mid-range Relays
- SS-54 Kappa or standard case sizes
- Balanced force design with permanent magnet drive
- Terminal plates include spade pin and hood-style terminals
- Numerous mounting options
- Interchangeable, modular, welded construction
- MIL-PRF-45266 and MIL-PRF-45266 qualified products available

Solid State Relays and Power Controllers
- Various models have switch ratings ranging from 90 mA up to 25 A
- AC, DC and bi-directional output
- Available for panel or PC board mounting
- Several types incorporate circuit protection and other functions
- Most are qualified to MIL-PRF-28776 or associated DSCC drawings

CII Time Delay Relays
- Solid state timing circuitry with either electromechanical or solid state output
- Sensors for voltage frequency or phase
- Most types offer a variety of enclosures and mounting options
- Several models qualified to MIL-PRF-4726

Solid State Relays
- Various models have switch ratings ranging from 90 mA up to 25 A
- AC, DC and bi-directional output
- Available for panel or PC board mounting
- Several types incorporate circuit protection and other functions
- Most are qualified to MIL-PRF-28776 or associated DSCC drawings

CII Hermetically Sealed Relays
- Available in various case styles
- Through hole and gull-wing surface mount terminals
- Numerous mounting options
- Choice of straight pins or solder hooks
- MIL-PRF-45266 and MIL-PRF-45266 qualified products available

Relays, Contactors, Solenoids and PDUs for High Performance Applications

SIGNAL RELAYS

CF 104 and 300 Grid Low Signal Relays
- Non-latching, single-coil or dual-coil latching designs
- Through hole and gull-wing surface mount terminals
- Choice of straight pins or solder hooks
- MIL-PRF-45266 and MIL-PRF-45266 qualified products available

MID-RANGE RELAYS

CII MUX Relays
- SS-54 Kappa or standard case sizes
- Balanced force design with permanent magnet drive
- Terminal plates include spade pin and hood-style terminals
- Numerous mounting options
- Interchangeable, modular, welded construction
- MIL-PRF-45266 and MIL-PRF-45266 qualified products available

TOLL-STATE RELAYS

Solid State Relays and Power Controllers
- Various models have switch ratings ranging from 90 mA up to 25 A
- AC, DC and bi-directional output
- Available for panel or PC board mounting
- Several types incorporate circuit protection and other functions
- Most are qualified to MIL-PRF-28776 or associated DSCC drawings

TIME DELAY RELAYS

Time Delay Relays
- Solid state timing circuitry with either electromechanical or solid state output
- Sensors for voltage frequency or phase
- Most types offer a variety of enclosures and mounting options
- Several models qualified to MIL-PRF-4726

ROTARY RELAYS

Rotary Relays for Shock and Vibration Naval Applications
- Contacts will not chatter when relay is subjected to 2000 ft-lb shock blows
- Panel mount relays are often used aboard combat naval vessels
- Contact arrangements from 4PDT up through 24PDT
- Rated to carry maximum currents of up to 10 A
- Continuous and AC coils

CRYSTAL CAN RELAYS

CII 1/5, 1/2 and Full Size Crystal Can Relays
- Hermetically sealed in 1/5 size, 1/2 size or full size crystal cans
- Terminals are arranged on 200 grid (1/2 size) and 382 grid (full size)
- Non-latching and latching designs
- Choice of straight pins or solder hooks
- MIL-PRF-45266 and MIL-PRF-45266 qualified products available

SOLID-STATE RELAYS

Solid State Relays
- Various models have switch ratings ranging from 90 mA up to 25 A
- AC, DC and bi-directional output
- Available for panel or PC board mounting
- Several types incorporate circuit protection and other functions
- Most are qualified to MIL-PRF-28776 or associated DSCC drawings

CII 1/5, 1/2 and Full Size Crystal Can Relays
- Hermetically sealed in 1/5 size, 1/2 size or full size crystal cans
- Terminals are arranged on 200 grid (1/2 size) and 382 grid (full size)
- Non-latching and latching designs
- Choice of straight pins or solder hooks
- MIL-PRF-45266 and MIL-PRF-45266 qualified products available

High Performance Relays, Contactors, Solenoids and Power Distribution Units
Market Segments Served:

TE Connectivity has extensive capabilities in the design and manufacture of relays, contactors, sensors and power distribution units for demanding high-performance applications. Whether you need commercial off-the-shelf products, components that must meet stringent military specifications or highly specialized, custom-designed products, look to TE to meet your requirements.

Among our brands are some of the more respected names in the high performance switching industry:

- KILOVAC
- HARTMAN
- CII

TE Connectivity has extensive capabilities in the design and manufacture of relays, contactors, sensors, monitors and other products into compact, cost-effective modular solutions. Our solenoids are also designed and manufactured on a custom basis to precisely meet your demanding high performance actuation requirements.

Keep in mind that the items listed in this brochure represent only a sampling of our products.

Contact your TE sales engineer to learn more about how we can help solve your performance actuation requirements.

Relays, Contactors, Solenoids and PDUs for High Performance Applications

DC RELAYS AND CONTACTORS

KILOVAC High Voltage Relays
- Voltage rating to 75 kV
- Current carrying capability to 10 A
- Service life to 100 million cycles
- Flange, panel or board mounting styles
- To 750 Other types combine solid state circuits with electromechanical or solid state output to create timers, sensors, monitors and controllers.

HARTMAN DC Relays and Contactors
HARTMAN DC Contactors for Space Applications
- Light-weight construction with hermetically sealed panel-mount enclosure
- Non-contact rating of 500 A at 28 Vdc or 56 Vdc
- Non-contact arrangements to 2PST, double break
- SPDT auxiliary contacts
- Efficient magnetic latching design with self-deenergizing coil

SPACE-QUALIFIED DC CONTACTORS

HARTMAN DC Contactors for Space Applications
- Lightweight construction with hermetically sealed panel-mount enclosure
- Non-contact rating of 500 A at 28 Vdc or 56 Vdc
- Non-contact arrangements to 2PST, double break
- SPDT auxiliary contacts
- Efficient magnetic latching design with self-deenergizing coil

CUSTOM SOLENOIDS

CII Custom-Designed, Linear Motion, Tubular High Performance Solenoids
- Rated 5, 10 and 15 A power switching relays for make and break applications
- High voltage relays rated for isolation to 15 kV
- Contacts available in Form A, Form B, Form C and latching arrangements
- Voltage isolation from 5 to 1800 Vdc
- Main contact ratings to 1000 A
- Main contact arrangements to 2PST, double break
- Non-position sensitive, hermetically sealed models for side or bottom mounting
- Customized lightweight Power Distribution Units
- For primary and secondary power distribution
- Modular systems consists of various plug-in bus bar (non-isolated) or panel mounting systems
- LED may be contactors, circuit breakers, sensors, units, etc.
- Gearboxes, designed as a fault-free zone with no moving parts, are intended as a permanent installation on the mother vehicle
- Optional current/voltage sensing, fuses, circuit breakers, power monitors, etc.
- Weight-saving and space-saving designs reduce OEM labor requirements and ease maintenance

Relays, Contactors, Solenoids and PDUs for High Performance Applications

Relays, Contactors, Solenoids and PDUs for High Performance Applications
TE Connectivity is a powerful source for high-performance switching components that must meet stringent military specifications. TE Connectivity has extensive capabilities in the design and manufacture of relays, contactors, solenoids, and power distribution units. Our solenoids are also designed and manufactured on a custom basis to precisely meet your demanding high-performance actuation requirements. They are specifically designed for operation in extremes of temperature, shock, vibration and altitude. We also work closely with our customers to design, build, and qualify lightweight power distribution units and custom solutions to meet your requirements.

Among our brands are some of the more respected names in the high-performance switching industry:

- **KILOVAC**
  - High Voltage Relays
  - Contactors
  - AC and DC contactors
  - Latching and non-latching types
  - KILOVAC DC Contactors
  - 28 VDC Contactors
  - 28 VDC Contactors for Space Applications
  - Lightweight, Hermetically Sealed Construction
  - Interrupt currents up to 2000 A
  - One or two-pole models, with normally open or normally closed main contacts
  -一位或兩極型號，具有常閉或常開的主要接點
  - Non-rotation sensitive, hermetically sealed models for sale or bottom mounting
  - Available with a variety of auxiliary contact arrangements
  - Latching and non-latching types

- **HARTMAN and KILOVAC Sensors, Monitors and Protective Relays**
  - Overcurrent, undercurrent and over/undercurrent sensors and indicators
  - Current/voltage sensing, fuses, circuit breakers, power monitors, etc.
  - Overfrequency, underfrequency and over/underfrequency sensors
  - Time delay versions available

- **PDUs**
  - Customized Lightweight Power Distribution Units
  - For primary and secondary power distribution
  - Modular systems consist of various plug-in bus bar replaceable modules (LRMs) installed on a panel mounting system or backplane
  - LRMs may be contactors, circuit breakers, sensors, ELCUs, etc.
  - Backplanes, designed as a fault-free zone with no moving parts, are intended as a permanent installation on the mother vehicle
  - Optional current/voltage sensing, fuses, circuit breakers, power monitors, etc.
  - Weight saving and space-saving designs reduce OEM labor requirements and ease maintenance
  - Optional integration of generator control units and logic controls

- **SPACE-QUALIFIED DC CONTACTORS**
  - Lightweight construction with hermetically sealed panel-mount enclosure
  - Non-contact rating of 500 A or 28 Vdc or 55 Vdc
  - Non-contacting arrangements on the mother vehicle
  - Dual-break, zero-voltage switching
  - HARTMAN auxiliary contacts
  - Efficient magnetic actuation design with self-deenergizing coil

- **CUSTOM SOLENOIDS**
  - Custom-designed, Linear Motion, Tubular high-performance solenoids
  - From 0.5" (12.7 mm) diameter models producing force in the ounces to 11 kN of force in the thousands of pounds
  - Push, pull or combination motion available
  - Wide variety of coil terminations, plug-in options

- **Sensors and Monitors**
  - PEER DC CONTACTORS
  - UL Certified
  - High-quality contactors and sensors
  - Optional current/voltage sensing, fuses, circuit breakers, power monitors, etc.
  - Weight saving and space-saving designs reduce OEM labor requirements and ease maintenance
  - Optional integration of generator control units and logic controls

This brochure provides an overview of our product line. It includes products with switching capabilities from dry circuit up through 2000 A. Some relays are capable of switching up to 10 GHz signals, while others can handle voltages up to 70 kV. Other types combine solid state circuits with electromechanical or solid-state output to create diverse solutions.

Contact your TE sales engineer to learn more about how we can help solve your specific requirements.
Market Segments Served:

TE Connectivty has extensive capabilities in the design and manufacture of relays, contactors, solenoids and power distribution units for demanding high performance applications. Whether you need commercial off-the-shelf products, components that must meet stringent military specifications or highly specialized, custom-designed products, rely on TE to meet your requirements.

Among our brands are some of the more respected names in the high performance switching industry:

- CII aerospace power relays, contactors, sensors and power distribution units
- KILOVAC high voltage relays, contactors, protective relays and power distribution units
- HARTMAN AC contactors
- SPACE-QUALIFIED DC CONTACTORS
- CUSTOM SOLENOIDS
- PDUs

This brochure provides an overview of our product line. It includes products with switching capabilities from dry circuit to 6 GHz signals, while others can handle voltages up to 15 kV. Other types combine solid state circuits with electromechanical or solid state output to create transistors, sensors, monitors and controllers.

And they are specifically designed for operation in extremes of temperature, shock, vibration and altitude. We also work closely with our customers to design, build and qualify lightweight power distribution units that combine relays, contactors, circuit breakers, sensors, monitors and other products into compact, cost-effective modular solutions.

Our solenoids are also designed and manufactured on a custom basis to precisely meet your demanding high performance actuation requirements.

Keep in mind that the items listed in this brochure represent only a sampling of our products. Contact your TE sales engineer to learn more about how we can help solve your specific requirements.

SPACE-QUALIFIED DC CONTACTORS

HARTMAN DC Contactors for Space Applications
- Lightweight construction with hermetically sealed panel-mount enclosure
- Non-position sensitive, hermetically sealed models for side or bottom mounting
- Optional current/voltage sensing, fuses, circuit breakers, power monitors, etc.
- Phase loss/rotation sensors and ground power monitors
- Time delay versions available

PDUs

Customized Lightweight Power Distribution Units
- For primary and secondary power distribution
- Modular systems consist of various plug-in and bus bar interchangeable modules (LRMs) installed on a panel mounting system or backplane
- LMRs may be contactors, circuit breakers, sensors, units, etc.
- Backplanes, designed as a fault-tolerant system, are installed as a permanent installation on the mother vehicle
- Optional current/voltage sensing, fuses, circuit breakers, power monitors, etc.
- Weight-saving and space-saving designs reduce OEM labor requirements and ease maintenance
- Optional integration of generation control units and logic controls units