

ELECTROMECHANICS



Innovative Products for intelligent Applications

endrich ...proudly represents.

Amphenol
Amphenol-Tuchel Electronics GmbH

CITIZEN
Micro HumanTech

CONEC
TECHNOLOGY IN CONNECTORS™



DURAKOOL

ECE®

 *GoodTronic Corp.*

ETRI®

 **Minebea**

 **TONELUCK MICRO**

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DC AXIAL FANS



Features

- » dimensions: 25×25 mm ... 127×127 mm or \varnothing 172×162 mm
- » air flow: 0.034 m³/min ... 8.5 m³/min
- » voltage: 5 VDC ... 48 VDC
- » temperature range: -10 °C ... +70 °C
- » connection: lead wires or faston terminals
- » further options: alarm sensor, speed sensor, temperature sensor, PWM, IP54, IP67
- » specials/news:
 - low noise fans
 - intelligent 6"-turbo fans for very high cooling capacity (with microcontroller for variable voltages)

A wide range of DC axial fans. The housing and the impeller consist of reinforced plastic material. The brushless DC motor is provided with precision ball bearings from NMB's own production. Tacho signal, locked rotor signal are available on request.

Applications

- » standard axial fans are used in equipments of office and industrial automation primarily
- » air-conditioning technology
- » solar engineering
- » telecommunication



AC AXIAL FANS



Features

- » dimensions: 60×60 mm ... 119×119 mm or \varnothing 172×150 mm
- » air flow: 0.26 m³/min ... 6.0 m³/min
- » voltage: 100 VAC ... 240 VAC
- » temperature range: -40 °C... +70 °C
- » connection: lead wires or faston terminals
- » further options: sucking direction of flow, flat cable plug with cable, IP54

AC axial fans with aluminum housing. The impeller consists of reinforced plastic material or metal. A shaded pole motor or condenser motor is provided with precision ball bearings from NMB's own production. The standard direction of flow is blowing, sucking as an option.



DC BLOWERS



DC blowers are used in equipments of air-conditioning and media technology primarily. The housing and the impeller consist of reinforced plastic material. The brushless DC motor is provided with precision ball bearings from NMB's own production. Furthermore the blowers are equipped with inverse-polarity and blocking protection with automatic restart. Tacho signal, locked rotor signal are available on request.

Features

- » dimensions: 45×44 mm ... 120×120 mm
- » air flow: 0.075 m³/min ... 0.94 m³/min
- » voltage: 12 VDC / 24 VDC
- » temperature range: -10 °C... +70 °C
- » connections: lead wires AWG24, length: 300 mm
- » alarm sensor, speed sensor, temperature sensor, PWM



ETRI®

FANS AND BLOWERS



Advantages

- » high-precision ball bearings
- » long mechanical and electrical life
- » high-temperature resistance available
- » robust against mechanical impact
- » vario-speed option
- » low current consumption
- » IP54 available
- » pre-wired or terminal versions available
- » customized value added solutions

Features

- » brushless DC axial fans and DC centrifugal blowers
- » AC axial fans and AC centrifugal blowers
- » AC high performance fans
- » 400 Hz axial fans
- » energy-saving EC technology
- » sensor option, PWM
- » VDE, UL, CSA approvals
- » ISO 9001, TS14001 & TS 16949 certified manufacturer
- » marine and railway certifications



SWITCHES



Advantages

- » switches for use in electronic equipments
- » power switches, UL, ENEC & CQC approved
- » board space can be saved when using sub miniature switches
- » high quality standard products, which cover nearly all needs
- » the combination of switch and LED in a single package provide a space-saving and cost-saving mounting process

Features

- » miniature and subminiature tactile switches
- » miniature tactile switches with LED
- » DIP-switches
- » rotary code switches
- » detector switches
- » multi-function switches
- » slide switches
- » rocker switches
- » toggle switches



SILICONE RUBBER KEYPADS



Features

- » storage temperature: -40°C ... +250° C
- » operating temperature: -20°C ... +70° C (if no other specification)
- » contact resistance: < 200 Ω
- » contact rating: 25 mA / 30 V
- » actuation force: 20 gf ... 500 gf
- » key stroke: up to 5 mm
- » contact bounce: <5 ms
- » any printing, any colours, "night design" possible

Silicone rubber keypads offer a wide range of design options as well as high flexibility in individual applications at favourable prices.

Advantages

- » all silicone rubber keypads are custom designed products, so they can be adapted exactly to the application
- » rubber keypads provide long operational life and excellent tactile sensation; they meet the industrial and automotive standards for quality and performance
- » combinations with PCB, adhesive foils and plastic parts are possible



SNAP-ACTION MICROSWITCHES



Features

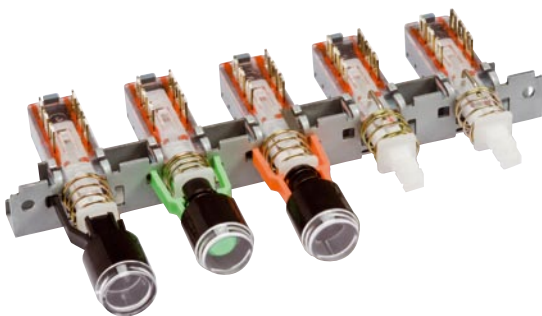
- » snap-action mechanism
- » ultraminiature style
- » subminiature style
- » miniature style
- » wide range of versions and levers
- » ENEC, UL, CSA, CQC approvals
- » ISO 9001 certified manufacturer

Advantages

- » high-precision microswitches
- » long mechanical and electrical life
- » the following models are available:
 - high-power option
 - high-temperature option
 - RAST 5
 - light force option
 - IP 67
 - pre-wired versions
 - gold contact option for control circuits
- » customized value added solutions



PUSHBUTTON SWITCHES



Applications

- » precision switches for all consumer, commercial and safety critical products, e. g.:
 - audio and video equipment
 - telecommunication
 - medical products
 - laboratory equipment
 - building and home automation

Features

- » types:
 - standard pushbutton switches
 - miniature pushbutton switches
 - vertical pushbutton switches
- » ENEC and UL approved power switches
- » telephone hook switches
- » straight PCB, snap-in PCB and solder terminals
- » mounting chassis available
- » LED illumination as an option
- » various buttons and indicating buttons



SPECIAL RELAYS AND TILT SENSORS



Features

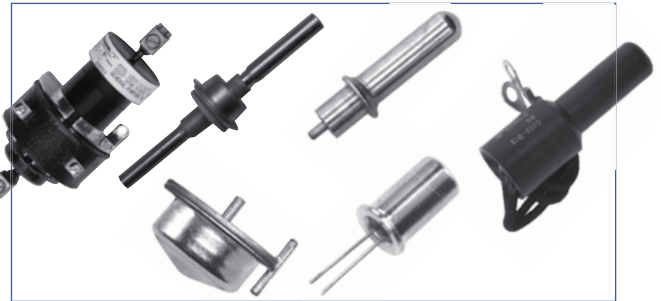
- » silent operation relays
- » high voltage contactors up to 3500 V
- » high-power relays rated up to 150 A

Applications

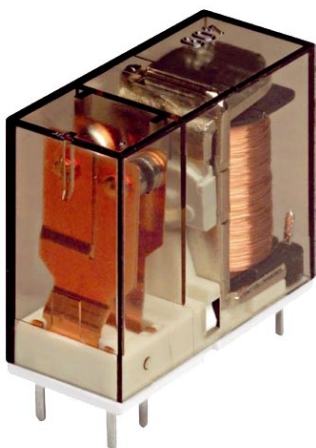
- » industrial applications
- » medical industry
- » electronic industry
- » automotive
- » special vehicles

Specialized electrical and electronic components

- » hermetic seals (glass to metal)
- » tilt sensors
- » tip-over sensors
- » G-force sensors
- » mercury relays & contactors
- » non-mercury products



RELAYS



Features

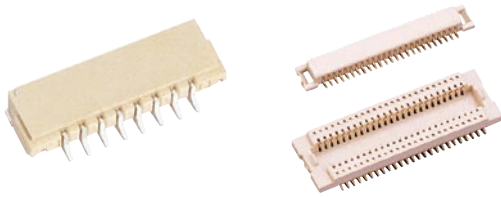
- » reed relays
- » optical relays
- » solid state relays
- » electromechanical relays
- » mechanical automotive relays
- » range of sockets & accessories
- » UL, CSA and VDE approvals available
- » ISO 9001, TS 16949 and ISO 14001 certified

Applications

- » automotive
- » special vehicles
- » general controls
- » telecommunication
- » home & building automation



CONNECTORS



Features

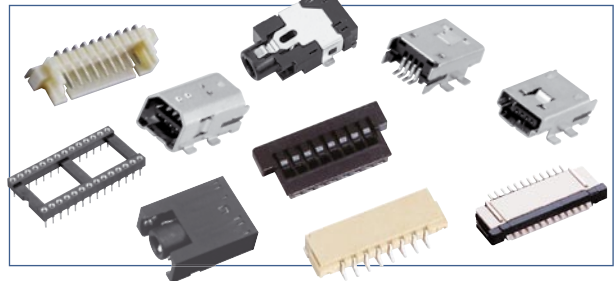
- » number of contacts depending on type and customer request
- » rated current: 0.5 A ... 1A
- » contact spacing: 1.27 , 1.0 , 0.8 or 0.5 mm
- » ultraminiature USB and mini USB series
- » ISO 9001, TS 16949 and ISO 14001 certified

Applications

- » industrial applications
- » medical industry
- » electronic devices
- » automotive applications
- » computer applications

Connector product line

- » FPC/FFC connectors
- » board to board connectors
- » board to wire connectors
- » card connectors
- » I/O- and battery connectors
- » earphone and microphone jacks and plugs
- » modular connectors
- » USB connectors & IEEE1394
- » splicing connectors
- » IC sockets



TERMINAL BLOCKS



Features

- » Eurostyle PCB type
- » plug-in type
- » screwless type
- » high-power type
- » 'wire to PCB' type
- » UL, CSA and VDE approvals available
- » ISO 9001, TS 16949 and ISO 14001 certified

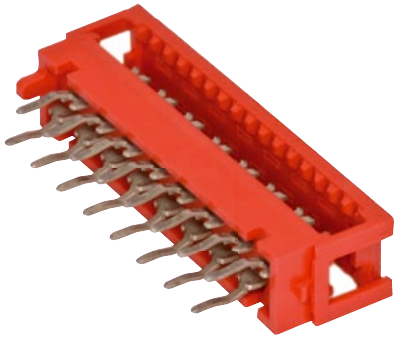
Applications

- » industrial applications
- » telecommunication
- » home and building automation
- » home appliances





PCB CONNECTORS

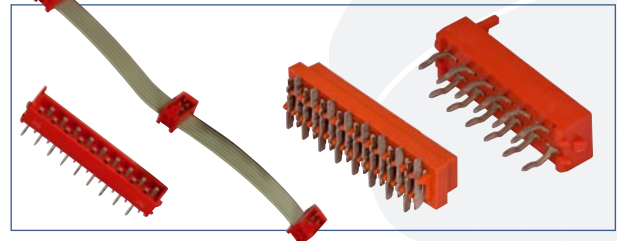


Features

- » connectors for printed circuit boards, contact spacing 1.27 mm
- » board to board connectors
- » wire to board connectors
- » fully tinned contacts
- » from 4 ... 26 positions for kinked contacts
- » locking latches available on female connectors

Applications

- » Amphenol PCB connectors meet a wide variety of needs in telecommunication and industrial equipments



SMART-CARD CONNECTORS SERIES C700

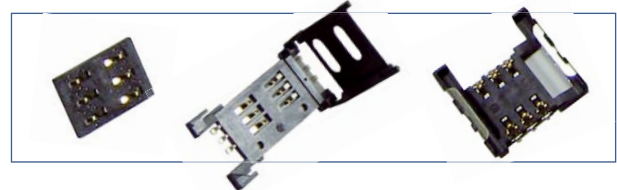


Features

- » Amphenol contact systems to read smart cards
- » hybrid reader
- » several handling systems, e. g. ,push only', ,push-push', ,push-pull', ,pushmatic'
- » several contact methods, e. g. ,landing', ,wiping', ,Simlock®', ,Simblock®'
- » 100,000 ... 500,000 contact cycles
- » EMC compliant

Applications

- » suitable for applications such as access control, vending machines, terminals, digital receivers, also for automotive applications



CIRCULAR CONNECTORS SERIES C091



Applications

- » industrial applications
- » sensor and measurement technology

Features

- » type of contact: male/female
- » straight 180° or angled 90°
- » internal strain relief
- » **model A (metal-plastic design, shielded):**
 - snap-in, number of contacts: 2 ... 8, 12+14 poles
 - protection class: IP40
- » **model B (plastic design, unshielded):**
 - snap-in, number of contacts 3 ... 8, 12+14 poles
 - protection class: IP40
- » **model D (metal design, shielded):**
 - locking acc. to DIN EN 60130-9,
 - protection class: IP65, IP67,
 - number of contacts: 3 ... 8, 12+14 poles
 - crimp or solder connection



CIRCULAR CONNECTORS SERIES ECOMATE AND C16-3



Applications

- » motion control
- » measuring and controlling
- » lighting systems

Features

- » **eco mate^m:**
 - different housing colors available on request
 - easy and quick coding
 - one housing for cable diameters 6 mm...12.5 mm
 - 3+PE, 6+PE
 - up to 400 V, 16 A max. per contact
 - impulse withstand voltage 6000 V, protection: IP65, IP67
 - safe cable restraint by internal cable clamp or clamping ring
- » **C16-3:**
 - 2 housings available
 - 5+PE up to 19+PE max.
 - protection class: IP65
 - up to 600 V, 41 A max. per contact





HF- AND COAXIAL PRODUCTS



Features

- » Amphenol's HF- and coaxial products include different models of high reliable connectors, cables and cable assemblies
- » microminiature-, subminiature- standard- and wireless systems: BNC, TNC, SMA, SMB/SMC, type N, type F, type G, 7/16, QWS, QDS, MMCX, MCX

Applications

- » HF- and coaxial products are used for mobile antennas, base stations and antenna-jumpers as well as for internal cable designs
- » NF products are well suited for telecommunication, computer and measuring applications



RADSOK® - POWER BOARD CONNECTORS



Applications

Radsok® power board connectors

- » press-in contact modules for pluggable input and output of high current boards for high power applications
- » automotive applications

ground mate®

- » grounding cable-connections in Radsok®-technology for switch cabinets

Features and advantages

Radsok®-power board connectors

- » fast and easy mating saves time and assembly costs, self-cleaning effect during mating, vibration absorption
- » pin-/thread contacts: 3.6 mm ... 8 mm, 70 A ... 300 A
- » versions of Radsok®-contacts:
 - Radsok®-contacts for PCBs
 - press-in contacts with cable
 - piggyback board

ground mate®

- » contacts: 6 mm Radsok® ... 8 mm Radsok® for 10 mm² ... 50 mm² cable
- » cable lengths: 170 mm ... 300 mm, also customized
- » all advantages of the Radsok® technology
- » compatible to M6, M8 or M10 threads

INDUSTRIAL HEAVY DUTY CONNECTORS C146-SERIES



Features

- » **model E (all purpose series):**
number of poles: 6, 10, 16, 24 and 48 with PE contacts, 400 V, ≤ 22 A, also ‚double density‘, IP65, crimp or screw connections
- » **model D (acc. to CECC 75301-801 standard):**
7 ... 128 crimp contacts (punched and turned), 250 VAC, ≤ 16A, IP54 and IP65, crimp-, wire wrap connections
- » **model M (modular system):**
e. g. for signal and power contacts within one connector, customized designs at 3 ... 280 contacts, 63 V ... 1000 V, 5 A ... 70 A, IP65, crimp terminal
- » EMC compliant housings available

Applications

- » heavy duty connectors for engineering
- » energy generation by solar and wind power
- » rail traffic industry
- » applicable for harsh environment



D-SUB CONNECTORS ACC. TO DIN 41652 / MIL-C-24308 STANDARD



Applications and advantages

- » D-SUB connectors acc. to DIN 41652 / MIL-C-24308, suitable for industrial, telecommunication, computer and IT, medical and aerospace applications
- » a lot of mounting and fastening types
- » high-density types
- » protection class IP67 available
- » wide choice accessories, e. g. protection caps, lockings and screws, tools etc.

Program/Features

- » standard D-SUB connectors
 - solder cup, solder pin, press-fit, crimp, IDC design
- » combination D-SUB connectors
 - power, high current and coaxial contacts
 - power connectors with integrated filter
- » D-SUB connectors with C-, LC- and π-filter technology
 - wide range of standard filter values, filter-adapters
- » D-SUB connectors for rough environments
 - solid body versions (one-piece Zn die-cast casing)
 - waterproof hoods and equipment
- » dual-port types
 - standard and combination D-SUB, internal filter optional
 - MicroTCA power module input connectors 7W2/9W4





SENSOR CABLES AND CONNECTORS M8, M12 / VALVE CONNECTORS



Applications and advantages

- » innovative industrial connecting solutions
- » wide range of products for production process control and automatization
- » global market leader with superior technical support

Program

- » molded, assembled connectors M8 with latching and screwing connection (male/female M8)
- » molded, assembled connectors M12 with screwing connection (male/female M12)
- » molded cables M8/M12 acc. to DIN43650
- » adapter DIN43650 M12/M8 connector
- » Y-splitter M8/M12, T-splitter M12, M12 splitter x2
- » shielded connector M12, shielded T-splitter M12
- » PROFIBUS, CAN-Bus – molded connectors/cables M12
- » DESINA-connectors/cables M12
- » M23/M40 molded and assembled connectors
- » Mini Change® molded and assembled connectors (male/female)
- » special models
- » protection class IP67/IP68



Amphenol

INDUSTRIAL CIRCULAR CONNECTORS ACC. TO MIL-C-5015



Advantages

- » compatible to all MIL-C-5015 connectors
- » quick, safe, and high reliable connections by prefabricated frames
- » variety of applications by more than 73 different contact arrangements

Connectors for aerospace industry

Features

- » circular connectors acc. to MIL-C-5015
- » D/MS A/B series with 12 different housing models and sizes from 10SL to 36 and 5 contact types #0 to #16
- » withstand voltage: 250 VDC ... 4200 VDC (200 VAC ... 3000 VAC)
- » withstand current:
 - contact size #0: 150 A / contact
 - contact size #4: 80 A / contact
 - contact size #8: 46 A / contact
 - contact size #12: 23 A / contact
 - contact size #16: 13 A / contact



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