

OIL & GAS LINE CARD

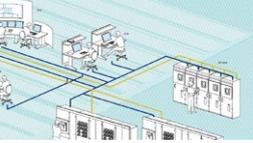
Low- and medium-voltage products and systems

Global product offering

ABB offers the complete range of products, solutions and services for the electrification infrastructure in the Oil, Gas & Chemical industry. ABB makes it easier to do business with, being the one-stop-shop from source to socket, and further offering the full integration and optimization of these products and solutions, backed by a global presence and service footprint. ABB Electrification Products save time and costs during project execution and ensure highest process uptime, with increased efficiency and maximized safety.

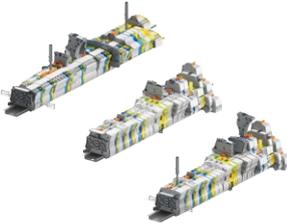
| Product / Offering | Benefits and features |
|---|--|
| POWER DISTRIBUTION EQUIPMENT | |
| Medium-voltage switchgear  | Switchgear solutions for primary and secondary distribution to suit every application. Air- and gas-insulated switchgear technology for all customers, from system integrators to end users, and all applications, from refurbishment, line extension to new installations. full engineering and technical support <ul style="list-style-type: none"> - products tailored to meet your local requirements and standards - short lead times - fast response |
| Medium-voltage Digital Switchgear  | An innovative solution combining protection, control, measurement and digital communication, Digital Switchgear is designed to enable a safe, flexible, eco-efficient and smart electrical network that can deliver power reliable and efficiently. The difference to “traditional switchgear” is that state-of-the-art current and voltage sensors are used together with ABB’s multifunctional Relion® IEDs (Intelligent Electronic Devices), enabling full utilization of IEC 61850 GOOSE. Our Digital Switchgear results in: <ul style="list-style-type: none"> - 30% shorter delivery time - Possibility of late customization “one size fits all” – last-minute changes - Quicker installation Quicker testing and commissioning at site - Increased substation availability and equipment safety - Lower costs of operation (250MWh saved in S/S over 30 years) - Space saving and less weight |

| Product / Offering | Benefits and features |
|---|--|
| Eco-efficient gas insulated switchgear (GIS)  | <p>ABB has developed alternatives to the greenhouse gas sulfur hexafluoride (SF6) on the path towards greater eco-efficiency and lower environmental impact.</p> <ul style="list-style-type: none"> - Eco-efficient with a GWP < 1 - Compact - Retains advantages of established GIS technology - Avoids SF6 regulations - Used in reliable and proven switchgear products - ZX2 available SF6-filled, but 'Ready-for-AirPlus' |
| Medium-voltage outdoor products  | <p>ABB reclosers have over 15 years of proven field performance incorporating innovative technology and unique ABB expertise, including embedded sensors with the highest accuracy and least environmental sensitivity in the market.</p> <p>Increased reliability</p> <ul style="list-style-type: none"> - Unparalleled performance - Simple, fast and safe maintenance - Easy integration with multiple controller options |
| MNS intelligent low-voltage switchgear and motor control (ANSI/ IEC)  | <p>MNS intelligent switchgear and motor control is ABB's global solution for power distribution up to 690V / 6300A / 250kA (IEC) and 600V / 5000A / 100kA (ANSI) respectively. With options for fixed, plug-in and withdrawable breakers and modules and top or bottom power cable and bus duct connections, it offers unrivalled flexibility. The product is fully arc-proof as per the applicable IEC and ANSI/UL standards, respectively, thus setting the standard for operator and equipment safety.</p> <p>The product offers wide-ranging protection and control functions; flexibility during design stage; the best plant information through enhanced measurement functions; and application of industry standard communications for control system integration.</p> <p>Main Benefits:</p> <ul style="list-style-type: none"> - Unmatched safety for protection for personnel and plant - Simplicity and high functionality - Improved plant availability - Integrated communications - Flexibility in a standardized solution - Rapid fault detection and rectification |
| MNS iS integrated low-voltage switchgear and motor control (IEC)  | <p>The design of MNS iS incorporated fully segregated power and control cable compartment for independent access. The withdrawable units are incorporates equipped with the smart sensor technology for measuring current, voltage and contact temperature. Control and protection components, installed separately from electrical circuits, are connected to the data concentrator, that collects all switchgear and starter/feeder information and distributes right information to right operator. This means process related information is sent to Process Operator and electrical oriented information to electrical operator in real time. Information to electrical operator can also be offered based on condition monitoring so that the plant electrical staff can operate the switchgear with ease and can maintain the switchgear in top condition- tackling the day to day situation proactively.</p> <p>Main benefits:</p> <ul style="list-style-type: none"> - Unmatched safety for the protection of personnel and plant - Reliable, flexible and scalable - Easy to and fast to maintain - Reduced footprint due to the most compact module size - Switchgear real time 'Condition Monitoring' functionality to support pro-active maintenance - Increased plant availability |

| Product / Offering | Benefits and features |
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| <p>Electrical system integration (ANSI/ IEC)</p>  | <p>Global trends towards improved energy management highlight the importance of reliable and efficient power monitoring and control leading the success of energy-intensive industries. Electrical System Integration (ESI) solution provides real-time data acquisition from all electrical equipment and network ensures safe and efficient plant operation and maintenance. ESI solution is backed by our ABB's leading-edge technology, global application knowledge and experience support network.</p> <ul style="list-style-type: none"> - Supplier-agnostic integration of all electrical equipment - Consolidated data control and distribution throughout the plant network - Control in the event of unstable or disruption of power to prevent any blackout or costly, unplanned shutdown |
| <p>Main Distribution Boards System pro E power</p>  | <p>System pro E power is the ABB solution for main distribution switchboard with rated current up to 6300 A and short-circuit current up to 120 kA. It meets all types of installation requirements, degrees of protection, and the electrical and mechanical specifications. ABB System pro E power provides complete solutions for main power distribution in infrastructure and industries in accordance with the Standard IEC 61439. In addition, it guarantees full compatibility with all other ABB products.</p> |
| LOW VOLTAGE PRODUCTS | |
| <p>Automation Boards System pro E control – IS2</p>  | <p>System pro E control – IS2 is the ABB range of metal structures and boxes for industrial automation and controlgear switchboards compliant to several international standard such as the IEC 62208, to the new IEC 61439-1-2 and UL 50.</p> <p>The structures IS2 are also seismic-proof according the IEEE Std 693 and tested against vibrations. Their high mechanical performances, the sturdiness and the loading capacity are the market benchmark and allow to achieve the most typical 19" Rack applications.</p> |
| <p>Emax 2 circuit breakers</p>  | <p>Emax 2 air circuit breakers with integrated power management, Ekip Power Controller, and with seven communication standards embedded (Modbus, Profibus, Devicenet, Modbus TCP, Profinet, Ethernet IP and IEC61850) protect the power network and can interface with the plant's central intelligence to keep operations running smoothly. In addition to this, specific trip units for generator protection and dedicated automatic network-generator transfer solutions make Emax 2 particularly suitable for Oil & Gas requirements.</p> |
| <p>Tmax circuit breakers</p>  | <p>Tmax XT and Tmax T moulded case circuit breakers are available with advanced electronic trip unit to achieve extremely reliable and accurate protection. They can be easily integrated in a supervision system and remotely operated thanks to internal communication modules and field installable motor operators.</p> |
| <p>Current and voltage sensors</p>  | <p>As an expert in low-voltage and control systems, we offer sensors that can handle rough applications and combine excellent accuracy, reliability and robustness.</p> |
| SAFETY, PROTECTION & CONTROL | |
| <p>Is-limiter</p>  | <p>Is-limiter to reduce high short-circuit currents.</p> <p>The trend towards higher line kVA ratings and the growing intermeshing of power systems are increasing the likelihood that distribution switchboards will be subject to unacceptably high short-circuit currents. Reliable and economic protection against these surge currents is provided by the Is-limiter.</p> <p>This fast-acting switching device triggers a small charge to open the main conductor, which is designed to carry high operating currents. The current commutates to a parallel fuse with high breaking capacity, which limits the short-circuit current during the first rise. Is-limiters are being used successfully in more than 2.500 stations in 70 countries.</p> |

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|---|---|
| Relays  | <p>The Relion® product family offers the widest range of products for the protection, control, measurement and supervision of power systems for IEC and ANSI applications.</p> <ul style="list-style-type: none"> - One product family - One look & Feel - One common software tool - Native IEC 61850 (direct integr. with PMLS) - +500.000 relays in operation |
| Active Arc Mitigation Ultra-Fast Earthing Switch (UFES)  | <p>UFES – Active internal arc protection for switchgear</p> <p>Innovative arc flash mitigation in less than 4 ms: the highest possible level of arc flash protection for personnel and equipment, maintenance of secure power supply and the reduction of production stoppages</p> <ul style="list-style-type: none"> - Avoidance of the severe effects of arc faults - Greatly increased switchgear operator safety - Drastic reduction in downtimes & repair costs - Retrofitting of ABB and non-ABB switchgear |
| SUE 3000 – High Speed Transfer Device  | <p>SUE 3000 – High Speed Transfer Device</p> <p>Ensuring continuous power supply by super fast automatic transfer:</p> <ul style="list-style-type: none"> - 30ms High Speed Transfer in case of a fault on an incomer (in 2- or 3-breaker configurations) - No more process interruptions, but maximized power quality and permanent availability - Protects electrical equipment (motors stay in synch) |
| Compact Power Management System (cPMS)  | <p>Compact Power Mgmt System (cPMS)</p> <p>Load-shedding functionality for independent power networks:</p> <ol style="list-style-type: none"> 1. Fast LS based on network contingencies 2. Slow LS based on overload of power sources and power demand violation at grid tie line 3. Manual LS (defined priorities or power value) 4. Frequency LS based on detection of underfrequency (up to 2 stages per sub-network) <p>Native IEC 61850 design enables interoperability with other IEC 61850 products & systems like ABB Relion® Series, COM600, AC800M, 800xA, MicroSCADA and 3rd party IEDs.</p> |
| Compact Substations (CSS)  | <p>Compact Substations</p> <ul style="list-style-type: none"> - Fully type tested: Arc resistant, IP protection, enclosure temperature class (lifetime of transformer) - Naturally cooled, no fans required - Easy transport and installation - In steel (ZAM Zinc Aluminium Magnesium) or in GRP (harsh conditions) |
| E-Houses  | <p>E-Houses</p> <p>Modular, fully coordinated & tested units containing power equipment (MV & LV Switchgear, Transformers, Automation, ...)</p> <ul style="list-style-type: none"> - Pre-fabricated in a controlled factory environment - Increases safety & reliability, is cost & time saving alternative to on-site building construction & connection of loose equipment - Single source responsibility & accountability |
| Arc guard TVOC-2  | <p>ABB is a leader in electrical safety with the TVOC-2 arc guard system providing an unrivaled optical arc mitigation device with SIL-2 safety certification. With TVOC-2 an arc is detected in < 1ms and a trip signal is sent to the breaker to isolate the panel and limit the damage. With TVOC-2 both lives and cost can be saved if an electrical arc happens and it is an industrial standard in several markets. The TVOC-2 is very easy to install and with the plug-in communication module, it provides operators real time status updates and instant information regarding the location of any arcs.</p> |

| Product / Offering | Benefits and features |
|---|--|
| Hazardous electronic system protection – Furse  | Our exhaustive range of equipotential bonding and transient overvoltage surge protection devices (SPDs) providing fully coordinated protection against transient overvoltages on all incoming and outgoing metallic service lines including power, data, signal & tele-coms. In addition to our full offer of SPDs we offer specific hazardous SPDs: <ul style="list-style-type: none"> – Category D,C, B tested protector (BS EN 61643-21) – ATEX/IECex approved – Ultrathin 7mm width e.g. for process control installations with large number of lines – Replaceable protection module |
| Surge protection – Joslyn  | Surge protection <ul style="list-style-type: none"> – More than 1,300 standard AC surge protector configurations – AC devices include products for facility-wide installation, prewired units for equipment-level protection and custom-tailored solutions for OEMs |
| Russellstoll DuraGard® Interconnection Systems  | Russellstoll DuraGard® waterproof connections: <ul style="list-style-type: none"> – Applications: washdown duty, chemical, outdoor, industrial and marine use non-metallic plugs, connectors receptacles and Inlets – 20, 30, 50 and 60 Amp, Maximum 600VAC/250VDC. – Truly waterproof: not just watertight, but waterproof (tested under 1000 PSI) – Waterproof locking connections: locking screw collars with O-ring gaskets – Lockout capable (30/50/60A Plugs): Access hole for padlock hasp, Interlock engagement CDA 360 solid brass pin and sleeve contacts – Durable and UL® 94-V0 Flame Rated Housings: DuraV® high-impact body and collars, Thermoset interiors, Deadfront construction – Fast, easy, rear-load wiring and assembly: drop-in assembly interior, sleeve and cable bushing, easy-in pressure screw wiring terminations – Long-lasting self-cleaning connections: full round pin and sleeve contacts – Waterproof cable sealing: neoprene compression bushing cable locking system, locking bushing nut with external cable clamps, bushing sizes available for any cable size |
| Russell Stoll MaxGard – Plugs & sockets & and static ground clamp  | Benefits: <ul style="list-style-type: none"> – No maintenance: maintenance-free and range from 16 to 400 amps – Fully Polarized: offers full polarization for exact voltage, frequency and phases, power supply ratings can't mix – Quick installation: solderless, pressure screw terminals and rear access, combined with take-apart housings, means quick wiring access Features: <p>MaxGard® – Heavy industrial applications: harsh environments and extreme conditions such as explosion-proof areas, high-corrosion atmospheres and rugged terrain.</p> <p>DuraGard® – Light industrial applications: Waterproof (1000-PSI water test). Areas where there are size constraints, chemicals, moisture, high water pressure and the need for waterproof rather than water-resistant protection.</p> <p>ABB IEC 60309 – Light Industrial Applications: International IEC 60309 – IP67 and IP69K Watertight. Situations that require international interchangeability, high-pressure wash-down, outdoor exposure, watertight construction and corrosion and chemical resistance.</p> |
| Tough & Safe heavy duty mechanical interlocks  | <ul style="list-style-type: none"> – For oil & gas applications with demanding and corrosive environments – The plastic material and robust design of housings: best material used for these kind of products for liquid ingress, corrosion and chemical resistance – Material also shows a unique combination of valuable properties, such as flammability rating, resistance to UV and humidity and resistance to impact – Connectors and sockets from our Tough & Safe range and heavy duty mechanical interlocks from the Critical & Safe range: tested by 3rd party for IP69, they fulfil the IP69 requirements both as stand-alone and while mated with our Tough & Safe plugs or inlets |

| Product / Offering | Benefits and features |
|---|--|
| <p>Explosion proof industrial plugs and sockets</p>  | <p>With robust design, specific safety features and user friendly installation they fit very well into our IP&S offering.</p> <p>These plugs and sockets are certified for category 2, gas and dust protection, and fulfill the European Directive 94/9/EC valid for products to be used within an explosive atmosphere. ATEX = ATmosphere EXplosive</p> |
| <p>Pilot devices</p>  | <p>ABB pilot devices have high reliability with self-cleaning contacts and up to IP69K rating for water- and dust-proof panels. They are very easy to install with the modular range that allows for simple reconfigurations of e.g. number of contacts during installation and the compact range with an all-in-one design. The same ranges are available World-wide and our pilot devices comply with all major certifications, making them the perfect option for exporting industries.</p> |
| SWITCH & CONNECT | |
| <p>Limit switches</p>  | <p>Using limit switches is the easiest way to convert mechanical movement in to electrical signals. They combine different types of actuators, casings and contacts and are perfectly suited to a large variety of applications, whatever the environment.</p> |
| <p>SNK series terminal blocks</p>  | <p>SNK series the truly smart and innovative terminal block range is certified IEC Ex in accordance with IEC 60079-0 and IEC 60079-7 (increased safety "Exe") world international standards for products used in explosive atmospheres.</p> <p>The range is available in PI-Spring (Push-in and spring) , screw clamp and pluggable technologies with common accessories.</p> <p>In order to serve specific local market requirements, some SNK products have additional local certifications such as: ATEX, UL hazardous Locations or BR-Ex...</p> <p>Connecting capacity from 0.22 to 95 mm² (24 to 0000 AWG)</p> |
| <p>ADO system® IDC terminal blocks</p>  | <p>The ADO system® terminal blocks based on Insulation displacement (IDC) technology offer significant productivity savings as well as secure and reliable connection. Trust ADO System® reliability in harsh environments.</p> <p>ADO System® technology provides superior performances and is the best solution for installations with severe constraints (continuity of service, clearance for work) as well as strong environmental requirements (vibrations,corrosion)</p> <p>This is the reason why today ADO System® is successfully used in chemical/petrochemical, traction, waste water treatment environments.</p> <p>Connecting capacity from 0.22 to 4 mm² (24 to 12 AWG).</p> |
| <p>Interfast pre-wiring system for PLC's</p>  | <p>The Interfast pre-wiring system for PLC's offers flexible, user-friendly and competitive wiring thanks to pre-assembled cables and interface modules.</p> <p>Interfast solution is compatible with seven type of PLC's and DCS manufacturers and more than 600 I/O's cards.</p> <p>Save up to 98% on wiring time thanks to an easy assembling and servicing on wiring and plug & play function.</p> <p>Functions from feed-through, disconnect, fuse, multi-level from 1 to 4 levels, relays, optocouplers and standard cable length from 1 to 5 meters.</p> |
| MOTOR CONTROL & PROTECTION | |
| <p>Manual motor starters</p>  | <p>Manual motor starters are electromechanical protection devices for the main circuit. They are used mainly to switch motors manually ON/OFF and to provide fuseless protection against short-circuit, overload and phase failures. Fuseless protection saves costs, space and ensures a quick reaction under short-circuit condition by switching off the motor within milliseconds. Starter combinations are set up together with contactors. Special versions for control transformer protections complete the portfolio.</p> |

| Product / Offering | Benefits and features |
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| <p data-bbox="118 237 312 259">Motor controllers</p>  | <p data-bbox="485 237 1453 551">The ABB Motor Controller UMC100.3 combines flexible motor control, motor protection and fieldbus/Ethernet communication in one modular solution. With its advanced diagnosis functions it can create pre-warnings before a fault actually happens and helps to avoid unwanted downtimes. The device can easily be expanded when needed for example with analog & temperature inputs, voltage measurement or digital inputs and outputs. Due to its flexible configuration options the engineering effort can be significantly reduced and the design is reduced to a minimum. All these functions let the UMC100.3 become the intelligent HUB within an Motor Control Center. Due to the benefits it provides, the UMC100.3 is used worldwide in many application segments and in projects where several thousand motors must be reliably controlled.</p> |
| <p data-bbox="118 584 264 607">Soft Starters</p>  | <p data-bbox="485 584 1437 898">ABB's soft starters increase a motor's lifetime by protecting it from electrical stresses. They do so by letting you optimize starting currents that with conventional starting methods put lots of stress on the motor. With many built-in motor protection features, your motor is safe in its hands. ABB's soft starters are also installation-friendly and can cut your assembly and startup time by being easy to use and easy to learn. With everything that you need in one unit, from bypass contactor to overload protection, a single soft starter makes for a compact and complete starting solution. Furthermore, with many application specific features, ABB's soft starters can ultimately help you increase productivity. Torque control, pump cleaning and many more features let you do more than simply softstarting.</p> |
| <p data-bbox="118 931 443 1021">3-pole contactors and overload relays for Motor Starting and power switching</p>  | <p data-bbox="485 931 1406 1088">ABB 3-pole contactors offer an exhaustive selection of products for simple and extreme applications as well as products with specific purposes. The AF contactor technology revolutionizes how we use contactors and allows use in all parts of the world and in a variety of network conditions. Furthermore, the mini-contactor range offers compact dimensions and specific connection possibilities.</p> |
| <p data-bbox="118 1178 341 1245">4-pole contactors for power switching</p>  | <p data-bbox="485 1178 1430 1335">AF 4-pole contactor range is a complement to the family of 3-pole AF contactors and motor protection equipment. Unmatched performance in a variety of applications and environments has made the AF contactors well appreciated by customers throughout the world. You can also benefit from the compactness of the 4-pole mini contactors available with 3 connection types.</p> |
| <p data-bbox="118 1368 416 1391">Electronic compact starter</p>  | <p data-bbox="485 1368 1461 1525">Electronic compact starters are innovative hybrid starters. Direct-on-line, reversed starting, motor overload protection and emergency stop are all fully integrated. It combines the benefits of solid-state electronics and a mechanical relay to deliver highest performance over an exceptionally long lifetime. Due to its width of only 22.5mm, the HF range will be the technology of choice where space is limited</p> |
| <p data-bbox="118 1592 284 1615">Bar contactors</p>  | <p data-bbox="485 1592 1461 1783">With over 100 years of experience in control, ABB has designed its R bar contactors to meet the particular requirements of power applications from 63 A up to 5000 A in AC and DC. With a variable number of poles and advanced features, these tailor-made bar mounted contactors remain the most flexible solution. Robustness and reliability bring our technology far beyond the limits of standard contactors. Our know-how enables us to offer R bar contactors perfectly suited to your applications whatever the environment.</p> |

| Product / Offering | Benefits and features |
|---|---|
| ELECTRONIC RELAYS AND CONTROL | |
| <p>Electronic timers</p>  | <p>The electronic timers of the CT range have been used in applications worldwide and have proven their excellent functionality in daily use, even under the toughest conditions. Three ranges of electronic timers provide timing functions for all applications. ABB ensures all low voltage timing control needs are met with our wide variety of product options – from economic to highly sophisticated, providing maximum value.</p> |
| <p>Measuring and monitoring relays</p>  | <p>ABB's measuring and monitoring relays are designed to not only detect overloads, but also temperature, liquid and other potentially damaging fluctuations. Choose among a large range of high quality products to ensure reliable protection, save cost and avoid unplanned downtime of your processes and equipment by uninterrupted monitoring no matter what environment you operate in.</p> |
| <p>Primary switch mode power supplies</p>  | <p>The CP range offers the latest technology in a compact construction of power supplies. Modern power supply units are a vital component in most areas of energy management and automation technology. ABB pays the utmost attention to the resulting requirements. Innovation is the key to a substantial enlargement of our power supply product program.</p> |
| <p>Interface relays and optocouplers</p>  | <p>ABB's interface relays and optocouplers ensure a reliable voltage conversion between process peripherals and higher level control systems. For all sorts of machinery, our relays ensure reliable signal switching and provide electrical isolation for your sensitive electronics such as PLCs. The wide variety of pluggable interface relays with standard or logic sockets can be used for switching AC or DC loads. Suitable for extreme environments, ABB's interface relays offers a range of different coil voltages and plug-in functional modules.</p> |
| <p>Signal converters</p>  | <p>ABB's universal signal converters of the CC-range amplify, convert, isolate and measure any type of analog signal to ensure safe and reliable plant processes. Whenever you need 3-way electrical isolation, select an ABB signal converter to protect your process and automation applications from overvoltage.</p> |
| EXPLOSION PROOF LIGHTING | |
| <p>Ex lighting</p>  | <ul style="list-style-type: none"> - New LED range for greater lifespan, decreased maintenance costs and lower energy consumption - All components mounted on a removable gear tray for an easy maintenance - Emergency lighting: self-contained or slave fittings available - For Zones 1, 2 and 21, 22 & industrial applications - ATEX, IECEx, EACEx, PCEC, INMETRO approved |
| <p>Ex floodlights</p>  | <ul style="list-style-type: none"> - Available in LED, HP sodium, metal halide, halogen - Flat or pole mounting - Wide or narrow beam for lighting up corridors or larger areas - For Zones 1, 2 and 21, 22 & industrial applications - ATEX, IECEx, EACEx, PCEC, INMETRO approved |
| <p>Industrial lighting</p>  | <ul style="list-style-type: none"> - Area, flood, linear, emergency & strobe lighting for hazardous & adverse environments, available in LED and traditional HID light output. - Temperature ranges from -51oC to +65oC - Luminaires are available in copper-free cast aluminum and non-metallic fiberglass-reinforced polyester housings - Certifications and ratings met include UL, CSA, NEMA, NEC & CEC |

| Product / Offering | Benefits and features |
|---|--|
| (EX) CABLE PROTECTION SYSTEMS & ENCLOSURES | |
| Ex control panels & junction boxes | Control boxes, cabinets and junction boxes: <ul style="list-style-type: none"> - Staged approach to create custom-built control panels - Wide variety of standard components: switches, contactors and relays for instance to meet any specific requirement - ATEX, IECEX, EACEX, PCEC, INMETRO approved |
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| T&B EX™ enclosures for hazardous and adverse areas | <ul style="list-style-type: none"> - Enclosures and junction boxes in a wide range of sizes, with many options, for challenging hazardous areas and industrial environments - Power distribution including factory sealed Class I, Division 2 panelboards and explosionproof Class I, Division 1 panelboards for optimized protection - Dust ignition proof enclosures for specific use in combustible Class II, Div. 1 environments - Large assortment of instrument, equipment and meter enclosures available with solid, dome, or glass covers - Hazardous location motor controls available with starters, breakers, switches and control stations, including a complete selection of pilot lights, push buttons and selector switches - UL / CSA approved |
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| Explosion proof conduits & fittings | Liquid tight metallic, stainless steel & non-metallic flexible conduit systems & fittings <ul style="list-style-type: none"> - Liquid tight flameproof Ex d e fittings - Liquid tight Ex e fittings - Non-metallic Ex e conduits systems for really dynamic applications. - Ideal for running multiple cores from one point to another - Available for oil-resistant, high-temperature and low and limited fire hazard applications - ATEX, IECEX, UL/CSA, EAC Ex, InMetro, CNEX, KSC |
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| Explosion proof cable glands | Metallic and non metallic cable glands <ul style="list-style-type: none"> - Available for most cable types, armoured and non-armoured - EMC and heat-trace options available - Ex d e Approved - Nylon and high impact nylon Ex e glands - Approved for marine applications - ATEX, IECEX, UL, EAC Ex, InMetro, CNEX, DNV |
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| Explosion proof accessories | Metallic and non metallic accessories to complement and complete installations <ul style="list-style-type: none"> - Ex d and Ex e metallic stopping plugs to close enclosures - Ex e nylon stopping plugs - Ex d e thread converters to allow the adaptation of thread sizes and types - Drain valves to help reduce the dangers from condensation - ATEX, IECEX, EAC Ex, InMetro, CNEX, KSC |
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| STAR TECK® XP explosion-proof fittings | Form a strong mechanical grip and water and/or oil-resistant termination. <ul style="list-style-type: none"> - Provide grounding continuity of cable armor - Patented powergrip grounding ring for easy installation - Designed to accommodate a broad range of cables - Built-in sealing device provides a 3600 seal when enclosure surface is rough or uneven - NEMA 4, 4X (stainless steel), 6P ratings |
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| Product / Offering | Benefits and features |
|---|--|
| STAR TECK EXTREME DIRECTOR™  | <p>Form a strong mechanical grip and water and/or oil-resistant termination.</p> <ul style="list-style-type: none"> - Provide grounding continuity of cable armor - Patented powergrip grounding ring for easy installation - Designed to accommodate a broad range of cables - Built-in sealing device provides a 3600 seal when enclosure surface is rough or uneven - NEMA 4, 4X (stainless steel), 6P ratings <p>STAR TECK EXTREME® DIRECTOR™</p> <ul style="list-style-type: none"> - Fitting adjusts from 90° to 180° - Saves on installation time by up to 50% |
| T&B® Liquidtight Fittings  | <p>Features & benefits of our liquidtight fittings:</p> <ul style="list-style-type: none"> - Available in Steel, Stainless Steel, Aluminum and High Temperature - No moisture pooling: the distinctive pumpkin-like appearance and unique gland nut deflects water away from the connector and prevents pooling - Double-beveled sealing: unique sealing mechanism, made from high-temperature rated thermoplastic in a distinctive blue coloring, can't be installed backwards – error-free installation designed in - Infinitely adjustable: save time and money with revolver grounding fittings that use an infinitely adjustable rotating ground lug <p>T&B Fittings 52® Series high-temperature flexible metal liquidtight fittings Withstand temperature range between –60°C to 150°C.</p> <ul style="list-style-type: none"> - Steel or malleable iron construction, electro-zinc plated and chromate coated for corrosion protection - Available in straight, 45° and 90° 45 versions |
| Stainless steel form 8 and BlueKote® conduit bodies  | <ul style="list-style-type: none"> - Marine-grade Type 316 stainless steel construction in rugged Form 8 design in sizes to 2" and LB, T, TB and LU® shapes - Ferrous Form 7 and Form 8 designs in all popular sizes and shapes with triple-layer, corrosion-resistant BlueKote® finish - UL Listed and CSA Certified |
| OCAL-BLUE® PVC-coated conduit & fittings system  | <p>PVC-coated, hot-dipped galvanized conduit and threads.</p> <ul style="list-style-type: none"> - Complies fully with UL® 6, NEMA RN-1 and ANSI C80.1 - Superior corrosion protection against harsh elements - Interior blue polyurethane provides corrosion protection around copper wire or fiber optics |
| Rigid conduit systems  | <p>Industrial & explosion-proof conduit systems for heavy duty industrial & hazardous locations</p> <ul style="list-style-type: none"> - Comprehensive range of conduit bodies & fittings - Explosion-proof & dust ignition-proof sealing fittings, outlet boxes, reducers & unions (Class I & Class II) |
| CONNECTIVITY & GROUNDING | |
| Earthing and lightning protection systems  | <p>With our Blackburn and Furse brands we offer a complete range of grounding & lightning protection systems, grounding connectors and surge protection devices (SPD) to protect your building, processes and people.</p> |

| Product / Offering | Benefits and features |
|--|--|
| Grounding systems – Blackburn | <p>Blackburn® compression, mechanical and exothermic connectors and accessories for the creation of a safe, code compliant and reliable grounding system. Range covers E-Z-Ground® Compression Connectors.</p> <ul style="list-style-type: none"> – High-conductivity copper and bronze allow connectors for direct burial, OEM or telecomm applications <p>Mechanical Grounding Connectors</p> <ul style="list-style-type: none"> – High-strength split-bolt connectors for copper-to-copper connections – Service post connectors for steel structures, fence posts or transformers using one or two cables – ViceLock® connectors for cable tray, channel and strut applications <p>Exothermic Welding System</p> <ul style="list-style-type: none"> – Simple, self-contained system to form high-quality electrical connections |
| Compression connectors – Color Keyed (AWG – UL, CSA) | <p>Compression lugs for power cables rated voltage up to 35kV with high-voltage insulation.</p> <ul style="list-style-type: none"> – From #8 Str. to 1000 kcmil – Specially designed for AWG stranded, flexible cable, welding cable and portable chord Hole inspection to ease installation control and chamfer barrel to assist installation work – Made of high-conductivity seamless copper tubing, tin plated – UL, CSA listed for AWG conductors |
| Compression connectors – Color Keyed & Spec-Kon (IEC) | <p>Solid, homogenous connection via special system utilizing compression tools with matching dies that forms connector & wire.</p> <ul style="list-style-type: none"> – Made of 99.9% pure, oxygen free copper. – Assured high conductivity, exceeding IEC 61238 Class A (Color-Keyed) and Class B (Spec-Kon) – Color-Keyed: straight 1 hole Short & Long barrel; 45°/90°, Narrow palm/tongue: 6–300mm² M5 to M16; Straight 2 holes: 25mm² till 400mm² M6 to M12 – Spec-Kon: straight 1 hole: 6–400mm² M4 to M24; 45°/90°: 6–240mm² M6 to M16; Straight 2-hole: 25–300 mm² M6 to M12 |
| Motor connectors | <p>Quick, reliable change-out of electric motors with no bolting, taping or loose connections</p> <ul style="list-style-type: none"> – Complete line of motor lead disconnects for 600V and 5kV applications, covering wire ranges from #16 through 4/0 AWG – Total assembly fits into tight motor housings – Featuring the Color-Keyed® compression system that ensures proper connections |
| ENGINEERED INSTALLATION PRODUCTS | |
| Cable tray & metal framing systems | <p>ABB manufacturers a comprehensive range of cable tray systems and solutions including cable ladder, perforated tray and channel tray. Additionally ABB offers a comprehensive lines of metal framing (strut) including the industry's only 100% plated products, our 11/2" modular system, and hundreds of accessories to complete any job.</p> |
| Stainless steel cable ties & tools | <p>Ballock, ladder type, releasable, identification, tooling</p> <ul style="list-style-type: none"> – Strong, safe installation with dual locking mechanism – Coated version: halogen free, non-toxic polyester – Uncoated version: for extreme / high temperature applications: –80°C to +300°C – Corrosion resistant 316 grade stainless steel – UV-resistant, weather & fire-proof, resistant to radiation, chemicals, absolutely fireproof |
| High performance cable ties & tools | <ul style="list-style-type: none"> – Tensile strength up to 540N – Flame retardant, UV resistant – Extra-high temperature resistant –40° to 150°C – Flammability ratings UL94V-2 and V-0 – Heat-Stabilized/Ultraviolet-resistant |

Product / Offering**Benefits and features**

SERVICE

Medium-voltage Services



ABB provides complete Service Offering, from Asset Management Solutions to Service Agreements covering: Installation & commissioning, Spare parts service Maintenance & field service, Training, Retrofit & refurbishment, Extension, Monitoring & diagnostics, Engineering & consulting, Site audits.

Some of our Medium Voltage services include:

1. PowerCare agreements:

- Basic: Emergency support
- Plus: Trouble shooting & inspection
- Advanced: preventive maintenance, testing and warranty extension
- Excellent: remote services and 24 hrs spare parts support

2. MySiteCondition: Asset Condition and Risk Assessment for MV and LV products

Move from time-based to reliability centered strategy by assessing:

- Importance of equipment
- Actual site condition
- Critical points in network
- Available historical data
- Operator and asset safety

MService solution



MService is based on a simple premise: When an asset's condition is monitored continuously, in real time, maintenance intervals can be accurately planned. In this regard, the probability of asset failure between maintenance intervals is significantly reduced, improving the availability and health of the asset – and overall operations.

With MService you will benefit from

- Increased maintenance effectiveness through fast failure location and identification that leads to quick resolution. Easy operator interfaces such as Module Details, Trend Display, Edit Note speed communications, achieving higher performance and lower maintenance costs
- Higher asset availability through continuous online supervision. MService reports history, measurement values and real-time conditions, enabling predictive maintenance that reduces unnecessary downtime. MService statistical reporting helps expose the root cause of failures and promotes proactive maintenance practices
- Lower maintenance costs through alarms messaging for required maintenance, helping avoid catastrophic shutdowns

PowerCare



The number of elements in an electrical system can be very large and managing them can be challenging even for experienced site managers. A service contract is the best, most convenient and guaranteed way of ensuring electrification system availability and reliability. Based on your company profile, ABB can provide a wide range of service packages to choose from and customize an agreement to suit your company's needs.

When partnering with ABB under PowerCare service contract you get access to PowerCare portal – a personalized web page that contains all the details on your support agreement and electrification system. It provides you with direct contact to your ABB coordinator and a gateway to multiple on-line services you have subscribed to.

Relying on ABB support maintains your electrical system at top performance and lets you stay focused on core business.

Please note: This is ABB's global offering and some products might not be available in your country. Refer to abb.com for your location.

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ABB

For more information and local contacts, please visit:

new.abb.com/oil-and-gas

new.abb.com/low-voltage

new.abb.com/medium-voltage

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