

AUTOMATED OFF-ROAD VEHICLES AND AUTONOMOUS WORK MACHINES

Power it. Control it. Prove it.

The product lines for the machine that drives itself and the site it works on: the DC switching and connection at the pack, the conversion that feeds the sensors and auxiliaries, the interface for the person who still services it, and the data path that comes back from the field. The manufacturers Dynamic Measurement and Control Solutions represents, on a line card built for the way you design, with an application engineer on the phone before the spec locks.

Power it

Energy in, converted, moved. And the switching and protection that keeps it safe.



SCHALTBAU

Isolates the pack, then keeps working

The contactor in the battery disconnect unit has to clear a DC arc on a fault and work again the next morning, with nobody in the seat to reset it. Schaltbau DC contactors use permanent-magnet arc blowout in an open chamber, **bidirectional, to 3,000 V**: the C800 family for passenger and commercial vehicles with shock and vibration ratings, C110B 48 V-class contactors from 60 to 250 A for trucks and AGVs.



SCHALTBAU

Connectors that carry the traction current

HV connectors at **1 kV and 470 A** for the electric excavator and the mine truck, LV charging connectors to 500 A for forklifts, AGVs and the yard tractor, and snap-action switches for the limit and the interlock from the same catalog. From a company built on rolling stock, where shock and vibration are the normal case.



PREMIUM PSU

The sensor bus, fed from the traction pack

CMS-2000 takes **180 to 950 V DC from a traction pack**, sealed to IP67 and IP69K, for the 24 V bus that runs the sensors and the compute; CVS-280 brings 750 V down to 24 V; ODX-6000 6 kVA inverters, parallelable, put three-phase AC on the machine for a compressor or a welder, built for dust, vibration and temperature extremes. -40 to +70 C ranges available across the product line.



CELDUC

Heat and motion switched with nothing to wear

Solid state relays for hydraulic-oil heaters, sensor and cabinet heaters, and the motor reversing and soft-start duty on an auxiliary drive, 4 to 125 A, **no contact to bounce on a bump**. Magnetic and reed sensors for boom, mast and position detection, sealed, stainless versions for the wet end.

Control it

Commanded, coordinated. The charging trailer, the depot and the service station.



IMO

The charging trailer and the depot panel

Contactors with a **3 W sealed coil draw**, chosen for US rail switching stations running on solar, battery and mains, so a charging trailer on a hybrid supply runs cool; UL-approved miniature circuit breakers, RCBOs and surge protection for the charger and depot circuits; Jaguar drives and iSmart or XGB logic for the wash bay and the workshop.



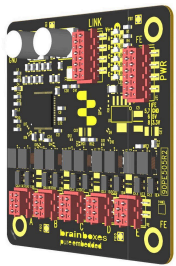
GETT

Input that works with gloves on

The machine drives itself; somebody still services it. Capacitive keyboards and switches that read a **gloved hand through a sealed front**, stainless steel keypads that shrug off weather and abuse, optical switches with no moving part, and InduSmart panel PCs with an IP65 front for the manual-mode station and the service bay.

Prove it

Proven, not assumed. Machine state from the field, on a network the autonomy stack never has to share.



BRAINBOXES

Ethernet that rides along

Board-level Ethernet **55 by 55 by 10 millimeters**, rated **-40 to +85 C**, designed into the autonomy enclosure where every gram and every watt counts; it has flown on weather balloons and gone subsea on inspection vehicles. A ten-year availability commitment behind the part number.



BRAINBOXES

Machine state without touching the controller

Remote I/O reads run states, counts and temperatures at the sensor and presents them as **Modbus TCP devices the fleet system polls**, on a machine whose autonomy controller is off-limits. RTD modules put hydraulic-oil and motor temperatures on the same network.



BRAINBOXES

-40 to +80 C, in the cabinet on the machine

Compact unmanaged switches on the DIN rail that hold **-40 to +80 C** in a roadside cabinet, and managed switches with SFP fiber ports that carry the site network across a pit or a solar field, past the distance and the EMI copper cannot.



SATEC

Every charger feed, one device

BFM-II meters up to **54 single-phase or 18 three-phase circuits** from one DIN-rail unit, against two voltage sources. Each charger on the trailer, the pump station and the shop carry their own kWh, so **the demand charge has a face**. HACS split-core sensors clip on around the conductor, so it goes into a yard that is already running.

Foundation

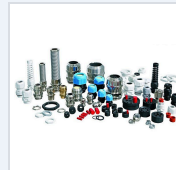
Looks simple. Fails first. Where the schematic meets the panel.



CONTA-CLIP

Terminals and entries that take the vibration

Spring-clamp terminal blocks that hold under vibration, KDS-FB flat-cable entries built for industrial trucks, cranes and elevators, and KDS split entries that pass a pre-terminated harness through a sealed wall, IP66 from -40 to +120 C.



WISKA

Sealing from a shipbuilding start

WISKA started on ship installations in 1919: glands including EMC versions, COMBI junction boxes to IP66, UV and ozone resistant, and venting, for the charging trailer, the pole and the pit.

DC breaks differently than AC

No zero crossing means the contactor has to stretch and cool the arc itself. Ask what a contactor breaks under load, not only what it holds; the two numbers are not the same.

Ratings are thermal-bound

A DC contactor's voltage rating is quoted at its maximum thermal current; at a lower current it switches a higher voltage. Spec the breaking capacity you need, not a cycle count, and split make life from break life when you write it.

Challenge us

After 30-plus years in the industrial hardware space we know these products, on our line card and off it. Bring us your most stringent or most mundane requirement. If one of our product lines fits, we will show you where. If it does not, we know someone who will. We would be happy to help.

Talk it through at the design stage

If any part of this card raises a question mid-design, whether that is the contactor at the pack, the converter feeding the sensor bus or the network in the cabinet, that question is exactly what we are for. A short technical conversation before the spec locks usually surfaces the options a datasheet does not.

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THE MANUFACTURERS ON THIS CARD



WISKA