

WRC Outsource Success Stories

Product	Technology Used	Customer Type	Market/industry	Problem / Need	WRC Solution	Customer Benefits
Communications Gateway	DeviceNet ModBus	Industrial OEM	Drive OEM	Integrate DeviceNet into existing product	Developed custom DeviceNet interface, optimized for OEM ModBus operation	<ul style="list-style-type: none"> ▪ Opens DeviceNet markets ▪ Low entry cost ▪ Low risk ▪ Full ODVA compliance ▪ Simple to use
Communications Gateway	DeviceNet ModBus I/O	Industrial OEM	Valve OEM	Integrate DeviceNet and ModBus into existing product	Developed custom DeviceNet interface with diagnostics, optimized for OEM valve operation	<ul style="list-style-type: none"> ▪ Opens DeviceNet markets ▪ Low entry cost ▪ Low risk ▪ Full ODVA compliance ▪ Simple to use
Discrete I/O mounting board	I/O	Distributor and OEM	Commercial OEM	Reduce size / form factor of discrete I/O mounting board	Developed new board to OEM specs	<ul style="list-style-type: none"> ▪ 25% reduction in control panel space ▪ Cost-reduction ▪ Simplified cabling ▪ Distributor support ▪ No up-front cost
Discrete I/O module	I/O	Distributor and OEM	Commercial OEM	Need 120Vac output module with ON/OFF switch for manual operation of equipment	Developed new module to OEM specs	<ul style="list-style-type: none"> ▪ Cost-reduction ▪ Distributor support ▪ Reduces down time by allowing manual activation of controls ▪ No up-front cost
SSR module	I/O	OEM	Commercial OEM	Replacement for original mfr's product that was discontinued	Developed new module to original specs and form factor	<ul style="list-style-type: none"> ▪ Prevented machine control redesign ▪ No expenses
Discrete I/O interface to e-stop circuit	I/O	Distributor and OEM	Industrial OEM	Need to monitor status of e-stop 120Vac pushbutton on network	Developed new module to OEM specs	<ul style="list-style-type: none"> ▪ Improved response to e-stop situation ▪ Integrated E-Stop on DeviceNet ▪ Distributor support ▪ Reduces down time ▪ No up-front cost

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Multi-channel mixed I/O on DeviceNet	I/O DeviceNet	Distributor and OEM	Inspection equipment OEM	Replacement for a competitor's product which experienced sourcing and support problems	Developed enhanced version of competitive product which meets or exceeds the previously-spec'd product	<ul style="list-style-type: none"> ▪ Improved product performance ▪ Improved service with local support ▪ Improved delivery ▪ Distributor support
Torque feedback and analysis circuit, product	Analog I/O	End-user	Major automotive mfg facility	Existing product design unreliable	Developed custom circuit to monitor and report torque operation	<ul style="list-style-type: none"> ▪ Improved reliability ▪ Reduced end-product problems
Operator Interface station	Analog I/O, discrete I/O, DeviceNet	End-user	Major automotive mfg facility	Existing product large and expensive, not reliable measurements	Developed custom OI with pushbuttons, LEDs, LED display, I/O circuits on DeviceNet	<ul style="list-style-type: none"> ▪ Reduced product cost 70% ▪ Torque circuit improves production quality ▪ More production status information
Discrete I/O block DeviceNet	Discrete I/O, DeviceNet	Industrial controls OEM	General Industrial	Incomplete product line	Developed new I/O node as joint development	<ul style="list-style-type: none"> ▪ Expanded product line ▪ Expanded opportunity to bid on new projects
Valve / DeviceNet interface	DeviceNet, discrete I/O	Mechanical OEM	General industrial	Need entry into networked applications	Developed DeviceNet interface prototype	<ul style="list-style-type: none"> ▪ Allows concept investigation
Fuel Control Module	Analog I/O	Electro-mechanical OEM	Aerospace	Reduce cost and improve reliability of existing product	Developed new design and provided mfg	<ul style="list-style-type: none"> ▪ Reduced cost ▪ Improved reliability ▪ Better mfg turn-around
Solenoid Circuit	Analog I/O	Electro-mechanical OEM	Aerospace	Improve electronics to aerospace specs	Developed circuit and manufactured prototypes	<ul style="list-style-type: none"> ▪ Improved quality
Light display	Discrete electronics and manufg.	Electronics OEM	Aerospace	Develop low-cost multi-color light system	Consulted on circuit design for manufacturability and built prototypes	<ul style="list-style-type: none"> ▪ Improved cost

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Communications Gateway	DeviceNet, serial comm	Industrial controls OEM	Industrial mfg	Method to communicate with RS232 serial devices in existing proprietary rack-based I/O subsystem	Ported existing product design to OEM packaging and backplane, added significant enhancements	<ul style="list-style-type: none"> ▪ Significant new opportunities ▪ Low cost ▪ Customer satisfaction ▪ Versatile performance
Communications Gateway	DeviceNet, serial comm	Industrial controls OEM	Industrial mfg	RS422 / RS485 version of above product to satisfy European market	Updated existing design to support RS422 and RS485	<ul style="list-style-type: none"> ▪ Significant new opportunities ▪ Low cost ▪ Customer satisfaction ▪ Versatile performance ▪ Compatible with existing products
Communications Gateway	DeviceNet, serial comm.	Industrial controls OEM	Industrial mfg	Method to communicate with RS232 serial devices in a DeviceNet system	Ported existing product design to new packaging, added significant enhancements	<ul style="list-style-type: none"> ▪ Expands market opportunities ▪ Low cost ▪ Customer satisfaction ▪ Versatile performance
Discrete I/O block DeviceNet	DeviceNet, Discrete I/O	Industrial controls OEM	General Industrial	Reduce cost and increase functionality of DeviceNet I/O	Developed new I/O node as joint development	<ul style="list-style-type: none"> ▪ Improved cost ▪ Enhanced performance
Communications Gateway (4 channels)	DeviceNet, serial comm	OEM	Semiconductor	Integration of stand-alone serial devices into DeviceNet system	Ported existing product design to OEM packaging, expanded to 4 serial channels	<ul style="list-style-type: none"> ▪ Improved total delivery system as joint venture development ▪ Started field trials
Water valve control interface	Discrete I/O, optics	Mechanical OEM	General, aviation	Replace mechanical sense and control with solid-state	Developed solid-state board assembly to fit valve	<ul style="list-style-type: none"> ▪ Improved reliability ▪ Improved cost

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Inverter	Power electronics	Electro-mechanical OEM	Residential, commercial buildings	High-power inverter to operate with elevator	Developed 12Vdc to 240Vac, 300W inverter	<ul style="list-style-type: none"> ▪ Low cost ▪ Custom fit ▪ Improved performance
Fiber optic CAN bus extender	Industrial CAN, i P	Industrial communic. OEM	Industrial, mining, material handling	Need to provide CAN bus capability	Ported existing design, plus enhancements to OEM form factor	<ul style="list-style-type: none"> ▪ New market opportunities ▪ Reduced development effort
Electro-static liquid dispenser	Analog electronics	OEM	Medical	Provide improved method of delivering liquid spray	Designed circuit for electro-static atomization of liquid	<ul style="list-style-type: none"> ▪