Analog & Digital Output Signal Conditioners/Transmitters

The iD Series signal conditioners combine the accuracy of laboratory instrumentation with the performance required by demanding industrial applications. The iD Series signal conditioners are ideal for those applications in Data Acquisition, Test & Measurement, Process Control, and Industrial Automation where accuracy, performance, and reliability are critically important.

The iD Series signal conditioners mount on a 35mm DIN rail, and operate on any voltage between 10 to 32 DC power. (A matching 24 Vdc 850 mA switching power supply is also available.) The devices feature three-way isolation of up to 1800 Vdc between the signal inputs, outputs, and power supply.

The iD Series feature seven (7) models designed for each of the most widely measured signal inputs: Process (DC) Voltage and Current; Strain Gage; Thermocouples; RTD’s; AC Voltage; AC Current; Frequency/Pulse.

The iD series devices are designed to work directly with a variety of sensors and transducers; no other components are necessary. For sensors such as RTD’s, strain gages, and some process transducers, precise stable excitation is provided directly from the iD module.

The iD Series are available with two different types of signal outputs: Analog or Digital. The iDRN Series provide a totally scalable analog output in DC voltage or current. The iDRX series provide a digital RS-485 output. Both iD Series signal conditioners are intelligent microprocessor based instruments that can be scaled and programmed by computer via serial communications, or over an Ethernet network.

The iDRN series feature a 0 to 10 Vdc, or 0 to 20 mA (including 4 to 20 mA) analog output signal that is typically scaled to be directly proportional to the input signal. It is an ideal component in a system with PLC’s or PC’s with analog data acquisition boards.

The iDRN series are an excellent choice for applications that demand an extra measure of accuracy and performance that is not possible with conventional “analog” signal conditioners or transmitters. Unlike conventional analog devices that are scaled by adjusting zero and span “pots”, the programmable, micro-processor based iDRN instruments are scaled precisely on a PC with free and simple Windows software. The iDRN modules connect directly to a PC’s RS232 Serial Communications port for programming and scaling.

Once the module is configured, the parameters are saved in non-volatile memory. The device can be disconnected from the PC, or the RS232 output from the module can be used for continuous data acquisition in addition to the analog output.

Alternatively, the iDRN signal conditioner can be connected to a PC’s Ethernet port or an Ethernet network using the EIT module as a Serial/Ethernet bridge.
Free Setup and Configuration
If an iDRN signal conditioner is not going to be connected to a computer, it can be ordered preconfigured by the factory at no extra charge. The user can select the input types, ranges and output scale, and OMEGA will program the instruments to those specific requirements in our calibration lab prior to shipment. For custom factory setup and scaling of the iDRN model, please specify the “-FS” option.

iDRX Series Digital Output
The iDRX Series Signal Conditioners provide highly accurate digital outputs. Each module provides an RS-485 Serial output that can be transmitted directly to computers and other devices with serial communications capability, or converted to Ethernet. On an RS-485 bus, up to 32 modules can be connected over a distance of 1200 m (4000') on a single pair of wires. With optional RS-485 repeaters, up to 254 modules may be connected to a single RS-485 port. The iDRX Series digital conditioners may be connected to an RS-485 bus using either screw terminator or RJ-12 connector.

ASCII and MODBUS
The user can select between an easy-to-use, straightforward ASCII protocol, or the popular MODBUS protocol found in many existing industrial installations. With the simple ASCII commands, writing programs using the iDRX does not require special drivers or libraries. In addition, many off-the-shelf software packages can be used with the iDRX devices without any programming. OMEGA also provides a number of useful programs and demos for the iDRX at no charge.

OPC Server And Active X Controls
OMEGA offers an optional OPC Server (OLE for Process Control) and ActiveX Controls for the iDRX Series. These programs make it easy to integrate the iDRX devices with information systems using “ActiveX Containers” such as Microsoft Visual Basic and Microsoft Excel as well as with popular OLE and OPC compliant data acquisition, process control, and industrial automation software from OMEGA, Iconics, Wonderware, Intellution, Rockwell Automation, and GE Fanuc Cimplicity among others.

iDRX and iDRN Series
Common Specifications
Input Power Supply: 10 to 32 Vdc
iDRX Output: 2-wire (half duplex) RS-485 (OMEGA Serial Protocol and Modbus Serial Protocol)
iDRN Output: 0 to 10V @ 10 mA max; 0 to 20 mA or 4 to 20 mA, 10V compliance
Isolation: 1800 Vdc peak
Typical Step Response to 99%: 1 second
Operating Ambient: -5 to 55°C (23 to 131°F)
Storage Temperature Range: -40 to 85°C (-40 to 185°F)
Mounting: 35 mm DIN rail
Dimensions: 90 H x 25 W x 107 mm D (3.54 x 0.99 x 4.21”)

<table>
<thead>
<tr>
<th>Input Type</th>
<th>Thermocouple</th>
<th>RTD</th>
<th>ac Voltage</th>
<th>ac Current</th>
<th>Process</th>
<th>Strain/Bridge</th>
<th>Frequency Pulse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model No.</td>
<td>iDRN/iDRX-TC</td>
<td>iDRN/iDRX-RTD</td>
<td>iDRN/iDRX-ACV</td>
<td>iDRN/iDRX-ACC</td>
<td>iDRN/iDRX-PR</td>
<td>iDRN/iDRX-ST</td>
<td>iDRN/iDRX-OPC</td>
</tr>
<tr>
<td>Input Range</td>
<td>J, K, T, E, R, S, B, N, J DIN thermocouple full range</td>
<td>RTD Temperature sensor Pt100, 500, 1000Ω</td>
<td>Full range of RTD 2, 3 or 4-wire</td>
<td>Full Scale Range: 400 mV to 400V</td>
<td>Full Scale Range: 10 mA to 5 A</td>
<td>Full Scale Range: ±400 mV to ±400 mV</td>
<td>Full Scale Range: ±2k to 100 M pulses</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±1°C</td>
<td>±0.5°C</td>
<td>0.2%</td>
<td>0.2%</td>
<td>1% FS</td>
<td>0.2% FS</td>
<td>0.1% FS</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1°C</td>
<td>0.1°C</td>
<td>10 to 14 Bit</td>
<td>10 to 14 Bit</td>
<td>12 to 15 Bit</td>
<td>13 to 15 Bit</td>
<td>15 to 19 Bit</td>
</tr>
<tr>
<td>Excitation</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>14 Vdc @ 25 mA</td>
<td>10V @ 30 mA</td>
<td>5, 8.2 and 12.5 Vdc @ 25 mA</td>
</tr>
</tbody>
</table>
Ethernet and Internet

The iDRX signal conditioner can also be connected to an Ethernet network using the EIT module as a Serial/Ethernet bridge. One EIT module can be a hub for up to 32 iDRX modules. The EIT module packages the ASCII serial communications in standard TCP/IP Protocol for transmission over standard Ethernet networks and the Internet. Unlike some manufacturer’s products this system uses totally open, non-proprietary standards and protocols for Ethernet and Internet. The user can integrate these devices with any commercial or industrial grade networking components that also comply with the popular international standards.


Get Internet E-mail Notification of Alarm Status on your web enabled smartphone or blackberry.

Digital Output iDRX modules connected to Ethernet

iDRX modules on RS485 Serial Bus
Switching Power Supply

- 24 Vdc Supply for iDRN/iDRX Modules
- iDRN-PS-1000 Switching Supply Powers up to 7 Units

### To Order

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIT-D</td>
<td>Internet Server RS-232 serial interface without I/Os, serves one iDRN unit</td>
</tr>
<tr>
<td>EIT-D-485</td>
<td>Serial to Ethernet iServer Industrial MicroServer™ with screw terminal serial port, serves 32 iDRX devices</td>
</tr>
<tr>
<td>iDRN-PS-1000</td>
<td>Power supply (switching), 95 to 240 Vac input, 24 Vdc output @ 850 mA (power 7 units)</td>
</tr>
</tbody>
</table>

### Software

- OMEGA-ENTERPRISE™ GATEWAY: Logging/Alarming/Monitoring with Integration Capabilities

### Accessories

- CAT-285: Bi-directional RS232-RS485 converter for iDRX series
- DB9-RJ12: DB9 to RJ12 connector adaptor, includes 2 m (7') RJ12 cord
- DB25-RJ12: DB25 to RJ12 connector adaptor, includes 2 m (7') RJ12 cord
- RJ12T: RJ12 “T” split connector for RS-485 instruments, includes 2 m (7') RJ12 cord
- RAIL-35-1: 35 mm (1.4”) DIN rail, 1 m (3.3’) length
- RAIL-35-2: 35 mm (1.4”) DIN rail, 2 m (6.6’) length

**Ordering Example:** EIT-D-485, serial to Ethernet Industrial MicroServer™, iDRN-PS-1000, power supply, iDRX-TC, thermocouple conditioner, iDRX-RTD, RTD conditioner, RAIL-35-2, DIN rail, DB9-RJ12, connector adaptor.
Thermocouple Signal Conditioners

iDRX-TC

- T/C Types J, K, T, E, R, S, B, N, J DIN
- 0.1°C Resolution
- ±1°C Accuracy
- 1800 Vdc Isolation
- 250 V/1 Min. Input Overvoltage Protection
- Free Setup and Configuration Software
- Factory Setup and Configuration Available at No Charge (for iDRN Analog Output Models)
- RoHS 2 Compliant

The iDRN-TC and iDRX-TC signal conditioners provide highly accurate, stable, isolated measurement of thermocouple sensors. Thermocouple types are selected and the outputs are scaled with the free configuration software, or can be done at the factory for no additional charge. The T/C Signal Conditioners can accept 9 different thermocouple types: J, K, T, E, R, S, B, N, and J DIN.

2 Models (Analog or Digital Outputs)
iDRN-TC provides an analog output that is proportional to the input signal. The iDRX-TC uses a digital RS-485 communication link.

Analog Output Model
The output of iDRN-TC can be user set for 0 to 10V, 4 to 20 mA or 0 to 20 mA. Input scaling and configuration of other operating parameters is accomplished by connecting to a standard RS-232 port of a personal computer and using the free Windows-based setup software. Once configured the settings may be stored in non-volatile memory and the unit disconnected from the PC.

Factory Setup and Configuration at No Extra Charge (iDRN Analog Output Model)
Please Specify:
- Thermocouple Type
- Temperature High & Low
- Output Value High & Low

Example: Type J, 0°C = 4 mA, 100°C = 20 mA

Digital Output Model
The iDRX-TC is a digital signal conditioner which communicates over an RS-485 communication link using either a simple, straightforward ASCII® Serial Protocol or MODBUS Serial Protocol. Up to 32 modules may be connected to a single RS-485 port stretching up to 1200 m (4000') without repeaters.

Ethernet Connection
The Optional EIT iServer module can connect up to thirty-two (32) iDRX RS-485 Signal Conditioners to an Ethernet network and the Internet using standard TCP/IP protocol. The iServer can also be used as a simple Serial to Ethernet “bridge” or converter to connect a single iDRN RS-232 device to an Ethernet network and the Internet.

Specifications
- Accuracy at 25°C: ±1°C
- Resolution: 0.1°C
- Power Consumption: 2 W (84 mA @ 24 Vdc)
- Input Types: J, K, T, E, R, S, B, N, J DIN
- Input Ranges: See range chart
- iDRX Output: 2-wire (half duplex) RS-485 (OMEGA serial protocol and MODBUS serial protocol)
- iDRN Output: 0 to 10V @ 10 mA max; 0 to 20 mA or 4 to 20 mA, 10V compliance

Thermocouple Default settings iDRN: Input Type K, Range 0 to 1000°F; Output 4 to 20 mA (custom settings available at no charge)

<table>
<thead>
<tr>
<th>Input Type</th>
<th>Range, ºC</th>
<th>Range, ºF</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>-210 to 760</td>
<td>-346 to 1400</td>
</tr>
<tr>
<td>K</td>
<td>-270 to 1372</td>
<td>-454 to 2500</td>
</tr>
<tr>
<td>T</td>
<td>-270 to 400</td>
<td>-454 to 752</td>
</tr>
<tr>
<td>E</td>
<td>-270 to 1000</td>
<td>-454 to 1832</td>
</tr>
<tr>
<td>R/S</td>
<td>-50 to 1768</td>
<td>-58 to 3214</td>
</tr>
<tr>
<td>B</td>
<td>100 to 1820</td>
<td>212 to 3300</td>
</tr>
<tr>
<td>N</td>
<td>-270 to 1300</td>
<td>-454 to 2372</td>
</tr>
<tr>
<td>J DIN</td>
<td>-200 to 900</td>
<td>-328 to 1652</td>
</tr>
</tbody>
</table>

To Order

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>iDRX-TC</td>
<td>Digital signal conditioner with RS-485 output for Thermocouple sensors</td>
</tr>
<tr>
<td>iDRN-TC</td>
<td>Signal conditioner with analog output for thermocouple sensors</td>
</tr>
<tr>
<td>-FS</td>
<td>Factory setup and scaling</td>
</tr>
</tbody>
</table>

Comes with complete operator’s manual.
Ordering Example: iDRN-TC, signal conditioner, and DB9-RJ12, connector adaptor.
For iDRN/iDRX accessories and power supplies, please visit OMEGA.
The iDRN-RTD and iDRX-RTD signal conditioners provide highly accurate, stable, isolated measurement of RTD temperature sensors. Both models can accept 2, 3, or 4 wire 100Ω Pt, 500Ω Pt and 1000Ω Pt RTDs.

2 Models (Analog or Digital Outputs)
The iDRN-RTD provides a fully scalable analog output that is proportional to the input signal. The iDRX-RTD uses digital RS-485 communications.

Analog Digital Output
The output of the iDRN-RTD can be user set for 0 to 10V, 4 to 20 mA or 0 to 20 mA. Input scaling and configuration of other operating parameters is accomplished by connecting to a standard RS-232 port of a personal computer and using the Windows-based setup software. Once configured the settings may be stored in non-volatile memory and the unit disconnected from the PC.

Factory Setup and Configuration at No Extra Charge (iDRN Analog Output Model)
Please Specify:
- Type and resistance
- Temperature high and low
- Output Value high and low

Example: Type Pt100; 0.00385; 4-wire; 0°C = 4 mA, 100°C = 20 mA

Digital Output Model
The iDRX-RTD is a digital signal conditioner which communicates over an RS-485 communication link using either a simple, straightforward ASCII Serial Protocol or MODBUS Serial Protocol. Up to 32 modules may be connected to a single RS-485 port stretching up to 1200 m (4000') without repeaters.

Ethernet Connection
The Optional EIT iServer module can connect up to thirty-two (32) iDRX RS-485 Signal Conditioners to an Ethernet network and the Internet using standard TCP/IP protocol. The iServer can also be used as a simple Serial to Ethernet “bridge” or converter to connect a single iDRN RS-232 device to an Ethernet network and the Internet.

Specifications
- Accuracy at 25°C: ±0.5°C
- Input Types: Platinum RTD, 100Ω, 500Ω or 1000Ω element (2, 3 or 4 wire, 385 or 392 curve)
- Resolution: 0.1°C
- Power Consumption: 2.4 W (100 mA @ 24Vdc)
- Input Range: -200 to 850°C (-328 to 1562°F)
- iDRX Output: 2-wire (half duplex) RS-485 (OMEGA Serial Protocol and MODBUS Serial Protocol)
- iDRN Output: 0 to 10V @ 10 mA max; 0 to 20 mA or 4 to 20 mA, 10V compliance
- RTD Default settings iDRN: Input PT100, 0.00385, 3-wire, range 0 to 1000°F; Output 4 to 20 mA (custom settings available at no charge)

To Order
<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>iDRX-RTD</td>
<td>Digital signal conditioner with RS-485 output for RTD temperature sensors</td>
</tr>
<tr>
<td>iDRN-RTD</td>
<td>Signal conditioner with analog output for RTD temperature sensors</td>
</tr>
<tr>
<td>-FS</td>
<td>Factory setup and scaling</td>
</tr>
</tbody>
</table>

Comes with complete operator’s manual. Ordering Example: iDRN-RTD, digital signal conditioner, and DB9-RJ12, connector adaptor. For iDRN/iDRX accessories and power supplies, please visit OMEGA.
Strain Gage/Bridge Transducer-Signal Conditioners

iDRX-ST

- Unipolar/Bipolar 30 mV to 100 mV
- 13-Bit Resolution
- 10 Vdc Excitation
- 0.2% FS Accuracy
- 1800 Vdc Isolation
- 250 Vac/1 Min Input Overvoltage Protection
- Free Setup and Configuration Software
- Factory Setup and Configuration Available at No Charge (for iDRN Analog Output Models)
- RoHS 2 Compliant

The iDRN-ST and iDRX-ST signal conditioners provide highly accurate, stable, isolated measurement for strain gage transducers such as load cells, torque transducers, non-amplified pressure transducers, and other bridge based transducers. Both models can accept signals from 30 to 100 mV full scale and provide 10 Vdc reference voltage which may be used for transducer excitation.

2 Models (Analog or Digital Outputs)
The iDRN-ST provides an analog output that is proportional to the input signal and the iDRX-ST uses RS-485 Serial Communications.

Analog Output Model
The output of iDRN-ST can be user set for 0 to 10V, 4 to 20 mA or 0 to 20 mA. Input scaling and configuration of other operating parameters is accomplished by connecting to a standard RS-232 port of a personal computer and using the free Windows-based setup software. Once configured the settings may be stored in non-volatile memory and the unit disconnected from the PC.

Factory Setup and Configuration at No Extra Charge (iDRN Analog Output and RS-232 signal conditioners)
Please Specify:
- Input value high and low
- Output value high and low
- Excitation: 10 or 14 Vdc
- Ratiometric or non-ratiometric
- Example: 0V = 4 mA, 100 mV = 20 mA, excitation 10V, ratiometric

Digital Output Model
The iDRX-ST is a digital signal conditioner which communicates over RS-485 communication link using either a simple ASCII Protocol or MODBUS Protocol. Up to 32 modules may be connected to a single RS-485 port stretching up to 1200 m (4000') without repeaters.

Ethernet Connection
The Optional EIT iServer module can connect up to 32 iDRX RS-485 Signal Conditioners to an Ethernet network and the Internet using standard TCP/IP protocol. The iServer can also be used as a simple Serial to Ethernet “bridge” or converter to connect a single iDRN RS-232 device to an Ethernet network and the Internet.

Specifications
- Accuracy at 25°C: ±0.2% FS
- Resolution: 13 to 15 bit
- Excitation: 10V @ 30 mA
- Power Consumption: 2 W without excitation (84 mA @ 24 Vdc), 3 W with excitation (125 mA @ 24 Vdc)
- Input Ranges: 0 to 30 to 0 to 100 mV full scale
- iDRX Output: 2-wire (half duplex) RS-485 (OMEGA serial protocol and MODBUS Serial Protocol)
- iDRN Output: 0 to 10V @ 10 mA max; 0 to 20 mA or 4 to 20 mA, 10V compliance

Strain Default Settings iDRN: Input range 0 to 30 mV; output 4 to 20 mA excitation 10V ratiometric (custom settings available at no charge)

To Order

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<tr>
<th>Model No.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>iDRX-ST</td>
<td>Digital signal conditioner for strain gages and bridge transducers with RS-485 output</td>
</tr>
<tr>
<td>iDRN-ST</td>
<td>Signal conditioner for strain gages and bridge transducers with analog output</td>
</tr>
<tr>
<td>-FS</td>
<td>Factory setup and scaling</td>
</tr>
</tbody>
</table>

comes with complete operator’s manual.


For iDRN/iDRX accessories and power supplies, please visit OMEGA.
Process Inputs Signal Conditioners

**iDRX-PR**

- Unipolar/Bipolar 400 mV to 10 Vdc, 0 to 20 mA dc
- 11 to 14-Bit Resolution
- ±0.1% FS Accuracy
- 14 Vdc Excitation
- 1800 Vdc Isolation
- 250 Vac/1 Min Input Overvoltage Protection
  (Voltage Input Only)
- Free Setup and Configuration Software
- Factory Setup and Configuration Available at No Charge (for iDRN Analog Output Models)
- RoHS 2 Compliant

The iDRN-PR and iDRX-PR signal conditioners provide highly accurate, stable, isolated measurement of process signals. Both models can accept unipolar and bipolar signals from 400 mV to 10 Vdc full scale, as well as 0 to 20 mA current range. The Signal Conditioners also provide a 10 Vdc or 14 Vdc reference voltage which can be used for transducer excitation.

**2 Models (Analog or Digital Outputs)**

The iDRN-PR provides a programmable analog output that is proportional to the input signal. The iDRX-PR uses a digital RS-485 Serial Communications.

**Analog Output Model**

The output of iDRN-PR can be user set for 0 to 10V, 4 to 20 mA, or 0 to 20 mA. Scaling and configuration is done with the free software on a PC using either the standard RS-232 port, or an Ethernet connection with the optional EIT module. Once configured the settings are stored in non-volatile memory and the unit disconnected from the PC.

**Factory Setup and Configuration at No Extra Charge (iDRN Analog Output model)**

Please Specify:
- Input value high and low
- Output value high and low
- Excitation: 10 or 14 Vdc
- Ratiometric or non-ratiometric
- Example: 0V = 4 mA, 10V = 20 mA, Excitation 10V, non-ratiometric

**Digital Output Model**

The iDRX-PR is a digital signal conditioner which communicates over an RS-485 communication link using either a simple straightforward ASCII Serial Protocol or MODBUS Serial Protocol. Up to 32 modules may be connected to a single RS-485 port stretching up to 1200 m (4000') without repeaters.

**Ethernet Connection**

The optional EIT iServer module can connect up to 32 iDRX RS-485 Signal Conditioners to an Ethernet network and the Internet using standard TCP/IP protocol. The iServer can also be used as a simple Serial to Ethernet “bridge” or converter to connect a single iDRN RS-232 device to an Ethernet network and the Internet.

**Specifications**

- **Accuracy at 25°C:** ±0.1% FS
- **Excitation:** 14 Vdc @ 25 mA
- **Resolution:** 11 to 14-bit
- **Power Consumption:** 2 W (84 mA @ 24 Vdc) without excitation, 3 W (125 mA @ 24 Vdc) with excitation
- **Input Ranges:** Uni/bipolar, 400 mV to 10 Vdc; 0 to 20 mA
- **iDRX Output:** 2-wire (half duplex) RS-485 (OMEGA Serial Protocol and MODBUS Serial Protocol)
- **iDRN Output:** 0 to 10V @ 10 mA max; 0 to 20 mA or 4 to 20 mA, 10V compliance
- **Process Default settings DRN:** Input Range 0 to 20 mA; Output 4 to 20 mA. Excitation 14V (custom settings available at no charge)

**To Order**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>iDRX-PR</td>
<td>Digital signal conditioner with RS-485 output for process signals</td>
</tr>
<tr>
<td>iDRN-PR</td>
<td>Signal conditioner with analog output for process signals</td>
</tr>
<tr>
<td>-FS</td>
<td>Factory setup and scaling</td>
</tr>
</tbody>
</table>

Comes with complete operator’s manual.  
**Ordering Example:** iDRX-PR, digital signal conditioner with RS-485 output for process signals, iDRN-PS-1000, power supply, 95 to 240 Vac input, 24 Vdc output @ 850 mA.  
For iDRN/iDRX accessories and power supplies, please visit OMEGA.
The iDRN-FP and iDRX-FP signal conditioners provide accurate, stable, isolated measurement of frequency and pulse signals. Both models measure frequency signals up to 50 KHz and can count up to two million pulses. The iDRX-FP and iDRN-FP are compatible with a wide variety of transducers including proximity, switch, magnetic pickup, NAMUR, contact closure and open collector transducers.

2 Models (Analog or Digital Outputs)
The iDRN-FP provides an analog output that is proportional to the input signal. The iDRX-FP uses digital RS-485 Serial Communication.

Analog Output Model
The output of iDRN-FP can be user set for 0 to 10V, 4 to 20 mA or 0 to 20 mA. Scaling and configuration is done with the free software on a PC using either the standard RS-232 port, or an Ethernet connection with the optional EIT module. Once configured the settings are stored in non-volatile memory and the unit disconnected from the PC.

Factory Setup and Configuration at No Extra Charge (iDRN Analog Output signal conditioners)
Please Specify:
- Input signal or sensor type
- Input frequency high and low
- Output value high and low
- Excitation: 10 or 14 Vdc
- Magnetic pickup (2-wire)

Example: 0 Hz = 4 mA, 1000 Hz = 20 mA, excitation N/A

Digital Output Model
The iDRX-FP is a digital signal conditioner which communicates over an RS-485 communication link using either a simple straightforward ASCII Serial Protocol or MODBUS Serial Protocol. Up to 32 modules may be connected to a single RS-485 port stretching up to 1200 m (4000') without repeaters.

Ethernet Connection
The Optional EIT iServer module can connect up to 32 iDRX RS-485 Signal Conditioners to an Ethernet network and the Internet using standard TCP/IP protocol. The iServer can also be used as a simple Serial to Ethernet “bridge” or converter to connect a single iDRN RS-232 device to an Ethernet network and the Internet.

Specifications
- Accuracy at 25°C: ±0.01% FS
- Resolution: 15 to 19-bit
- Power Consumption: 2.4 W (100 mA @ 24 Vdc) without excitation, 3 W (125 mA @ 24 Vdc) with excitation
- Input Ranges: Frequency from 20 Hz to 50 KHz pulse from 20,000 to 200,000,000 pulses full scale
- iDRX Output: 2-wire (half duplex) RS-485 (OMEGA Serial Protocol and MODBUS Serial Protocol)
- iDRN Output: 0 to 10V @ 10 mA max; 0 to 20 mA or 4 to 20 mA

FP Default Settings iDRN:
- Input 0 to 20 KHz; Output 4 to 20 mA (custom settings available at no charge)

To Order

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>iDRX-FP</td>
<td>Digital signal conditioner with RS-485 output for Frequency/Pulse inputs</td>
</tr>
<tr>
<td>iDRN-FP</td>
<td>Signal conditioner with analog output for Frequency/Pulse inputs</td>
</tr>
<tr>
<td>-FS</td>
<td>Factory setup and scaling</td>
</tr>
</tbody>
</table>

Comes with complete operator’s manual. Ordering Example: iDRN-FP, signal conditioner, and DB9-RJ12, connector adaptor. For iDRN/iDRX accessories and power supplies, please visit OMEGA.
AC Voltage/Current Signal Conditioners

iDRX-ACV

- Software Selectable Input Ranges iDRX-ACV: 0 to 400 mV to 0 to 400 Vac
  iDRX-ACC: 0 to 10 mA to 0 to 5 A ac
- 14-Bit Resolution (Max)
- 0.2% FS Accuracy
- 1800 Vdc isolation
- Free Setup and Configuration Software
- Factory Setup and Configuration Available at No Charge (for iDRN Analog Output Models)
- RoHS 2 Compliant

The iDRN and iDRX Series signal conditioners provide highly accurate, stable and isolated measurement of AC voltage and current signals across extremely wide ranges: AC Current ranges from 0 to 10 mA through 0 to 5 A ac; AC Voltage ranges from 0 to 400 mV to 0 to 400 Vac.

Analog or Digital Outputs
The iDRX-ACV and iDRX-ACC accept ac voltage and ac current respectively and provide an analog output which is proportional to the input. The iDRX-ACV and iDRX-ACC accept ac voltage and ac current respectively and transmit via RS-485 Serial Communications.

Analog Output Model
The Analog Output models can be configured for outputs of 0 to 10 Vdc, 4 to 20 mA or 0 to 20 mA with the free configuration software. The modules connect to a PC with RS-232 Serial Communications, or by Ethernet with the optional EIT module. Once configured the settings are stored in non-volatile memory and the unit can be disconnected from the PC.

Factory Setup and Configuration at No Extra Charge (iDRN Analog Output Modules)
Please Specify:
- iDRN-ACV: Input value high and low; output value high and low
  Example: 0 volts = 4 mA,
  400Vac = 20 mA
- iDRN-ACC: Input value high and low; output value high and low
  Example: 0 A = 4 mA, 5 A = 20 mA

Digital Output Model
The iDRX-ACC (Current) and iDRX-ACV (Voltage) communicate via RS-485 Serial Communications using either simple ASCII Commands or the popular MODBUS Protocol. Up to 32 modules may be connected to a single RS-485 port stretching up to 1200 m (4000'), more with RS-485 repeaters.

Ethernet Connection
The optional EIT iServer module can connect up to 32 iDRX RS-485 Signal Conditioners to an Ethernet network and the Internet using standard TCP/IP protocol. The iServer can also be used as a simple Serial to Ethernet “bridge” or converter to connect a single iDRX RS-232 device to an Ethernet network and the Internet.

Specifications
Accuracy at 25°C: ±0.2% FS
Resolution: 10 to 14-bit
Power Consumption: 2.4 W; (100 mA @ 24 Vdc)
MODEL iDRX-ACV/iDRN-ACV
Input Ranges: 0 to 400 mV to 0 to 400 Vac full scale
Interface: RS-485; RJ-12 or screw terminal connector
MODEL iDRX-ACC/ACC
Input Ranges: 0 to 10 mA to 0 to 5 A ac
Digital output Model: 2-wire (half duplex)
RS-485 (OMEGA Serial Protocol and MODBUS Serial Protocol)
iDRN Output: 0 to 10V@10 mA max; 0 to 20 mA or 4 to 20 mA
ACC Default Settings iDRN:
Input 0 to 5 Amp; Output 4 to 20 mA (custom settings available at no charge)

To Order

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>iDRX-ACC</td>
<td>Digital signal conditioner with RS-485 output for ac current input</td>
</tr>
<tr>
<td>iDRX-ACV</td>
<td>Digital signal conditioner with RS-485 output for ac voltage input</td>
</tr>
<tr>
<td>iDRN-ACC</td>
<td>Signal conditioner with analog output for ac current inputs</td>
</tr>
<tr>
<td>iDRN-ACV</td>
<td>Signal conditioner with analog output for ac voltage inputs</td>
</tr>
<tr>
<td>-FS</td>
<td>Factory setup and scaling</td>
</tr>
</tbody>
</table>

Comes with complete operator’s manual.
Ordering Example: iDRN-ACV, signal conditioner, and DB9-RJ12, connector adaptor.

OMEGA offers many types of Current Transformers. Please visit OMEGA.