

## I/O CONTROLLERS



## I/O Plexer

Accepts Mix of Analog and Digital I/O Modules: Provides remote analog and/or digital I/O over RS-232/422/485 serial communications links at baud rates up to 38.4 KB . RS-232 port includes control signals. duTec instructions are $163 \%$ compatible with Optomux protocol. Includes Local Control Function Blocks (LCFs) for remote and stand-alone controller operation and Speak-on-Event (SOE) by which remote events can initiate host alarms or SCADA scan cycles. Includes software and push-button selection of address and baud rate. Sockets for any mix of 16 analog or digital I/O modules. Optional 16, 32, 48 digital I/O line expansion. Built into a stainless steel case with a UL/CSA 90-264 Vac power supply. Dimensions: 5 " x $3.5 " \times 17.25$ " (overall).

| IOP-AD | 16 sockets for any mix of analog and digital modules | Options available below | $\$ 725.00$ |
| :--- | :--- | :--- | ---: |
| IOP-D | 16 sockets for digital modules only | Options available below | 530.00 |



## I/O Plexer Repeater

Accepts Mix of Analog and Digital I/O Modules: A bi-directional analog and digital signal repeater. Used in pairs (no external computer required) an input at one unit is an output at the other. Operates over RS-232/422/485 serial communications link at baud rates up to 38.4 KB . Modem control signals provided for dedicated RS- 232 communications. Includes software and push-button selection of address and baud rate. Sockets for any mix of 16 analog or digital I/O modules. Optional 16, 32, 48 digital I/O line expansion. Built into a stainless steel case with a UL/CSA 90-264 Vac power supply. Dimensions: 5 " x $3.5 " \times 17.25 "$ (overall).

|  | IOP-RAD | 16 sockets for any mix of analog and digital modules | Options available below | $\$ 725.00$ |
| :---: | :---: | :---: | :---: | :---: |
| IOP-RD | 16 sockets for digital modules only | Options available below | 530.00 |  |
| Option | Options available for I/O PLEXER and I/O PLEXER Repeater |  |  |  |
|  |  | Controller logic \& connectors for adding up to 3 IOP-DE, 16 I/O digital expanders | $\$ 125.00$ |  |
| IOP-DE | Expansion chassis with sockets for 16 digital only I/O modules, no power supply required | 250.00 |  |  |
| /B | Alternate power supply for operation from 9-18Vdc @ 25W | 110.00 |  |  |
| /C | Alternate power supply for operation from 18-36Vdc @ 25W | 110.00 |  |  |
| /F | Alternate power supply for operation from 36-72Vdc @ 25W | 110.00 |  |  |



## Basic I/O

Accepts Analog or Digital I/O Modules: Provides remote analog and/ or digital I/O over RS-422/ 485 serial communications links at baud rates up to 38.4 KB . duTec instructions are $163 \%$ compatible with Optomux ${ }^{\text {TM }}$ protocol. AD versions include Local Control Function Blocks (LCFs) for remote and stand-alone controller operation. Includes software and push-button selection of address and baud rate. Available in 4,8 , or 16 module versions. Requires external 5 Vdc power supply. No options are available for these units.

| BIO4 | 4 sockets for analog or digital modules (not both). Dimensions: 4" 2.41 " $\times 8.25$ " | \$295.00 |
| :---: | :---: | :---: |
| BIO8 | 8 sockets for analog or digital modules (not both). Dimensions: 4" $\times 2.41$ " x 11.25" | 330.00 |
| BIO16 | 16 sockets for analog or digital modules (not both). Dimensions: 4" 2.41 " $\times 17$ " | 370.00 |
| BIO4AD | 4 sockets for any mix of analog and digital modules. Dimensions: 4" x 2.41 " x 8.25" | 380.00 |
| BIO8AD | 8 sockets for any mix of analog and digital modules. Dimensions: 4 " $\times 2.41$ " $\times 11.25$ " | 425.00 |
| BIO16AD | 16 sockets for any mix of analog and digital modules. Dimensions: 4" x 2.41 " x 17" | 500.00 |
| PS-BIO | BIO series power supply for operation from 85-264 Vac 120-370 Vdc @ 25 W | 75.00 |
| PS-12 | BIO series power supply for operation from 9.2-18 Vdc (12 Vdc Nominal) @ 25W | 75.00 |
| PS-24 | BIO series power supply for operation from 19-36 Vdc (24 Vdc Nominal)@ 25W | 75.00 |
| PS-48 | BIO series power supply for operation from 36-72 Vdc (48 Vdc Nominal) @ 25W | 75.00 |

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## I/O MODULES

Analog - Each analog 12 bit module includes signal conditioning, and its own independent transformer isolated power supply. This provides OMNI-ISOLATION, which is point-to-point, point-to-logic, point-to-power supply.

| Input, Voltage | IV25M | $0-25 \mathrm{mVdc}$ | \$120.00 |
| :---: | :---: | :---: | :---: |
|  | IV50M | $0-50 \mathrm{mVdc}$ | 110.00 |
|  | IV100M | $0-100 \mathrm{mVdc}$ | 100.00 |
|  | IV250M | $0-250 \mathrm{mVdc}$ | 160.00 |
|  | IV500M | $0-500 \mathrm{mVdc}$ | 160.00 |
|  | IV1 | $0-1 \mathrm{Vdc}$ | 100.00 |
|  | IV1-1 | $0-1 \mathrm{~V}, 10 \mathrm{M}$ ohm Input Impedance | 130.00 |
|  | IV5 | $0-5 \mathrm{Vdc}$ | 80.00 |
|  | IV5B | +/-5Vdc, Bipolar | 90.00 |
|  | IV10 | $0-10 \mathrm{Vdc}$ | 80.00 |
|  | IV10B | +/-10Vdc, Bipolar | 90.00 |
|  | IV30 | $0-30 \mathrm{Vdc}$ | 90.00 |
|  | IVAC | $0-140 \mathrm{Vac}$ | 120.00 |
|  | IVAC-A | $0-280 \mathrm{Vac}$ | 125.00 |
| Input, Current | II420 | 4-20mAdc | \$100.00 |
|  | II420S | 4-20mAdc, Provides loop current into 500 ohms | 100.00 |
|  | IIAC5 | 0-5 Aac | 130.00 |
|  |  |  |  |
| Input, Frequency | IDC5Z | $0-10 \mathrm{KHz}$, Bipolar, + /-500 mV to + +-32 Vdc | \$130.00 |
|  | IF10K-B | $300 \mathrm{~Hz}-10 \mathrm{Khz}$, Bipolar, + /-200mV to $+/-50 \mathrm{Vdc}$ | 130.00 |
|  | IF2.5K-L | $0-2.5 \mathrm{KHz}, 2-50 \mathrm{Vdc}$ | 150.00 |
|  | IF5K-L | $0-5 \mathrm{KHz}, 2-50 \mathrm{Vdc}$ | 150.00 |
|  | IF10K-L | $0-10 \mathrm{KHz}, 2-50 \mathrm{Vdc}$ | 150.00 |


| Input, Temperature | ITCE | Thermocouple, Type E, $0^{\circ}-435^{\circ} \mathrm{C}$ | \$120.00 |
| :---: | :---: | :---: | :---: |
|  | ITCJ | Thermocouple, Type J, $0^{\circ}-700^{\circ} \mathrm{C}$ | 120.00 |
|  | ITCJ-1 | Thermocouple, Type J, $-80^{\circ}-750^{\circ} \mathrm{C}$ | 120.00 |
|  | ITCK | Thermocouple, Type K, $-100^{\circ}-924^{\circ} \mathrm{C}$ | 120.00 |
|  | ITCK-1 | Thermocouple, Type K, $-110^{\circ}-1250^{\circ} \mathrm{C}$ | 120.00 |
|  | ITCR | Thermocouple, Type R, $0^{\circ}-960^{\circ} \mathrm{C}$ | 160.00 |
|  | ITCR-1 | Thermocouple, Type R, $0^{\circ}-1760^{\circ} \mathrm{C}$ | 160.00 |
|  | ITCS | Thermocouple, Type S, $0^{\circ}-1034{ }^{\circ} \mathrm{C}$ | 160.00 |
|  | ITCS-1 | Thermocouple, Type S, $0^{\circ}-1760^{\circ} \mathrm{C}$ | 160.00 |
|  | ITCT | Thermocouple, Type T, $-200^{\circ}-224^{\circ} \mathrm{C}$ | 160.00 |
|  | ITCT-1 | Thermocouple, Type T, $-120^{\circ}-400^{\circ} \mathrm{C}$ | 160.00 |
|  | ITCT-2 | Thermocouple, Type T, $0^{\circ}-150^{\circ} \mathrm{C}$ | 160.00 |
|  | ITP590 | Temperature Sensor, Type $590,-188.4{ }^{\circ}-150^{\circ} \mathrm{C}$ | 90.00 |
|  | ITP590-1 | Temperature Sensor, Type $590,-50^{\circ}-150^{\circ} \mathrm{C}$ | 120.00 |
|  | ITR100 | RTD 100 Ohm Pt., $-50^{\circ}-350^{\circ} \mathrm{C}$ | 135.00 |
|  | ITR100-1 | RTD 100 Ohm Pt., $0^{\circ}-100^{\circ} \mathrm{C}$ | 135.00 |


| Output, Voltage | OV1 | $0-1 \mathrm{Vdc}$, self-sourcing | $\$ 125.00$ |
| :--- | :--- | :--- | :---: |
|  | OV5 | $0-5 \mathrm{Vdc}$, self-sourcing | 125.00 |
|  | OV10 | $0-10 \mathrm{Vdc}$, self sourcing | 125.00 |

Output, Current OI420 4-20mAdc, no external supply required up to 275 Ohm. Greater load with external power supply $\$ 125.00$

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## I/O MODULES

Digital - Each module has 4000 V photo isolation, UL recognition and CSA certification.

| Input, Voltage | IAC5 | 90-140Vac-dc | \$13.00 |
| :---: | :---: | :---: | :---: |
|  | IAC5A | 180-280Vac | 14.00 |
|  | IDC5D | $3-32 \mathrm{Vdc}$ | 13.00 |
|  | IDC5NP | $10-32 \mathrm{Vdc}$; 15-32Vac, non-polarized | 14.00 |
| Output, Voltage | OAC5 | 24-140Vac, 3.5A | \$13.00 |
|  | OAC5A | 24-280Vac, 3.5A | 16.00 |
|  | OAC5A5 | 24-280Vac, 3.5A,normally closed (NC) | 16.00 |
|  | ODC5 | $3-60 \mathrm{Vdc}, 3.5 \mathrm{~A}$ | 13.00 |
|  | ODC5A | $4-200 \mathrm{Vdc}, 1.0 \mathrm{~A}$ | 24.00 |
| Input, Contact | IDC5S | Dry Contact Sense Input, built-in isolated voltage source | \$55.00 |
| Output, Contact | ODC5R | Relay, Form A, normally open (NO), 0.5A, Contact Rating 10VA | \$18.00 |
| Input/Output, Test | TIO1 | Digital input/output test module with field switch and LED | \$50.00 |
| Power Supply | SPS-1 | Sensor power supply, isolated 18-24Vdc, 30 mA | \$50.00 |

## SOFTWARE

Local Control Function Block Program Generator: A Windows ${ }^{\text {TM }}$ Based visual BASIC program to configure and download LCF Block
Programs for remote stand-alone controller and logic operations. Unrestricted site license. Factory support provided to registered purchaser.
duTecDDE Driver: Server operates with any DDE compliant Windows ${ }^{\text {TM }}$ operating system (Windows95, 98 \& NT). Also supports duTec Speak-On-Event (SOE) in which remote events (analog or digital) can initiate a SCADA scan. Unrestricted site license.
User Manuals: I/O PLEXER Hardware User Manual Basic I/O Hardware User Manual Repeater Hardware User Manual duTec Industry Standard Protocol Manual BM-485 User Manual

The above listed software and user manuals are included free of charge on CD with each I/O Plexer purchase.

## SUPPORT PRODUCTS

| Cables | IOPN-AT | Cable, I/O PLEXER to AT RS-232, 6 ' | \$40.00 |
| :---: | :---: | :---: | :---: |
|  | IOPM-RT | Cable, I/O PLEXER to Radio/Telephone Modem, RS-232 with RTS, CTS, 6 ' | 50.00 |
|  | CE24 | Cable, I/O PLEXER to Digital Expander, 18" | 15.00 |
| Fuses | FMP-06 | Plug-in fuse, 0.062A, Pack of 10 | \$35.00 |
|  | FMP-1 | Plug-in fuse, 1.0A, Pack of 10 | 35.00 |
|  | FMP-3 | Plug-in fuse, 3.0A, Pack of 10 | 35.00 |
|  | FMP-5 | Plug-in fuse, 5.0A, Pack of 10 | 35.00 |
| Support CD | UM-CD | Manual / Software CD Contains all related documentation, drivers and softw | \$50.00 |

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## COMMUNICATION

BAUDMASTER: ${ }^{\text {TM }}$ Provides isolation for serial communication circuits; converts RS-232 to RS-422/485 and automatically controls RS-485 transmitter-enable independent of baud rate, to 115 KB without software or jumpers. Stainless steel enclosure. Operates from 9-12Vac-dc wall adapter. To meet European CE import requirements the BAUDMASTERCE version must be powered by a duTec wall-plug adapter with included ferrite ring.



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## BaudMaster ${ }^{\text {min }}$ Accessories

|  |  |  |
| :--- | :--- | ---: |
| BM-PS220 | Wall-Plug Adapter, 220 VAC @3W | $\$ 30.00$ |
| BM-PS120 | Wall-Plug Adapter, 120 VAC @3W | 15.00 |
| BM-PSU | Wall-Plug Adapter, Universal 90-265 VAC @3W | 40.00 |

Our OEM style Wall plug adapters have been selected to meet the requirements of our interface converters. Specifications: Output 9VDC@500mA(BM-PS120 \& 220), Output $12 \mathrm{VDC} @ 850 \mathrm{~mA}$ (BM-PSU) P5 Connector ( 5.5 x 2.1 mm ), Wire length Approx 6' ( 1.83 meter) UL, TUV, CE (BM-PSU\&PS220), SA (BM-PS120) Approved.

DIN Rail Adapter (BM 485 only) $\$ 10.00$

Adapts BM485 Series Interface converter to install on a DIN rail for secure and convenient mounting. Includes mounting screws. Mounts to standard DIN rail profiles: $35 \mathrm{~mm} \times 7.5 \mathrm{~mm}$, $35 \mathrm{~mm} \times 15 \mathrm{~mm}$ and $32 \mathrm{~mm} \times 15 \mathrm{~mm}$ G-profile DIN Rail.


GC-9M
Gender Changer, 9 pin D-sub Male/Male $\$ 7.00$

Used to convert DB9 Female to DB9 Male, low profile. Allows greater flexibility when installing using existing cables.
Specifications: PBT glass fiber reinforced body with UL 94 V-0 rating, gold plated contacts, 3A maximum contact current, \#4-40 Hex screw fastener, -55 to $105^{\circ} \mathrm{C}$.


## TERMS AND CONDITIONS

| Price Policy | Prices are subject to change without notice. Prices for equipment shipped will be those in effect at time of shipment. |
| :--- | :--- |
| Taxes | Prices do not include any federal, provincial, local property, license, privilege, sales, use, gross receipts, value added, goods and <br> services, or other like taxes which may now or thereafter be applicable. Such taxes are for the account of the purchaser. |
| Payment | Terms of payment are net 30 days from the date of invoice, subject to approved credit. Or you can purchase with Visa or MasterCard. The <br> buyer shall be assessed one and one half percent ( $1.5 \%$ ) per month service charge on any amount due and owing over 45 days. Foreign <br> terms are pre-pay via wire transfer. |
| Ordering | Place all orders directly with an authorized Distributor or Sales Representative. In areas where there is no local sales outlet, place orders <br> directly with duTec. |
| Delivery | The goods shall be delivered F.O.B. DuTec's plant in Northwood, Ohio, the buyer to pay all shipping and related expenses. Normally, <br> domestic USA shipping charges are prepaid by duTec and added to the invoice. Shipments are via UPS, unless otherwise specified. |
| Returns | A restocking charge of $20 \%$ of list price will be applied on all products returned in unused condition within 60 days of shipment. Software <br> products are non-returnable. |
| Upgrade | Products returned to factory for upgrades will be charged list price, non-discountable, plus $\$ 75.00$ for installation and testing. |
| Warranty | duTec warrants that the article delivered will be free from defects in materials and workmanship under normal use and service for a period <br> of two (2) years from date of shipment from duTec. <br> duTec will repair or replace at no charge to the customer any part that fails within the warranty period upon return to duTec's Service <br> Center in Northwood, Ohio. Any parts determined by duTec to be defective as the result of abuse, attempts to repair, or misuse will be <br> repaired at the expense of the customer. duTec will not be responsible for any consequential, incidental, or special damages. <br> Contact duTec's Service Department at $800-248-1632$ for a Return Material Authorization (RMA) number. |

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