

I/O

MODULE SPECIFICATIONS



duTec

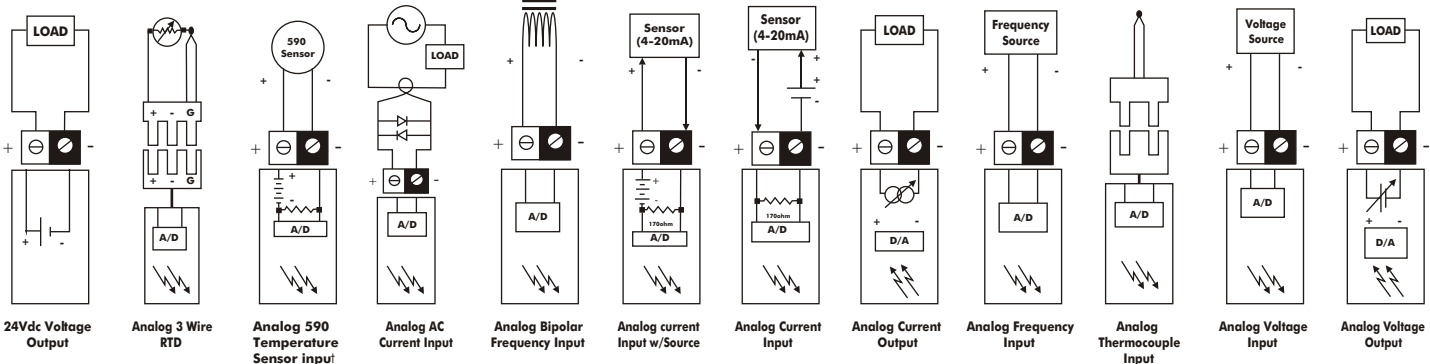


**duTec's remote I/O products give you the
VERSATILITY, FLEXIBILITY & COMPATIBILITY
interface with virtually anything!**

A N A L O G M O D U L E S

ANALOG INPUT MODULES		Range	Resolution (12 bits)	Input Res. nom. ohms	Accuracy @25°C	Drift ppm/°C Gain Offset	Connect Color	Notes	Figure
Voltage	IV25M	0-25mVdc	6.10 μ V	100K	$\pm 0.1\%$ FS	55 20			K
	IV50M	0-50mVdc	12.21 μ V	100K	$\pm 0.1\%$ FS	55 20			K
	IV100M	0-100mVdc	24.41 μ V	100K	$\pm 0.1\%$ FS	55 20			K
	IV250M	0-250mVdc	61.04 μ V	100K	$\pm 0.1\%$ FS	55 20			K
	IV500M	0-500mVdc	122.07 μ V	100K	$\pm 0.1\%$ FS	55 20			K
	IV1	0-1Vdc	0.24 μ V	100K	$\pm 0.1\%$ FS	55 20			K
	IV5	0-5Vdc	1.22 μ V	100K	$\pm 0.1\%$ FS	55 20			K
	IV5B	-5-5Vdc	2.44 mV	100K	$\pm 0.1\%$ FS	55 20		Bipolar	K
	IV10	0-10Vdc	2.44 mV	100K	$\pm 0.1\%$ FS	55 20			K
	IV10B	-10-10Vdc	4.88 mV	100K	$\pm 0.1\%$ FS	55 20		Bipolar	K
	IV30	0-30Vdc	7.32 mV	100K	$\pm 0.1\%$ FS	55 20			K
	IVAC	0-140Vac	34.20 mVac		1.5Meg $\pm 0.1\%$ FS	55	20	70.7% averaged peak	K
	IVAC-A	0-280Vac	68.40 mVac		1.5Meg $\pm 0.1\%$ FS	55	20	70.7% averaged peak	K
	Current	II420	4- 20 mAdc	3.91 μ V	170	$\pm 0.1\%$ FS	55 20	275 ohm maximum loop resistance	
II420S		4- 20 mAdc	3.91 μ V	170	$\pm 0.1\%$ FS	55 20	Provides loop current into <500 ohms		F
IIAC5		0- 5 Adc	1.22 mA	0.02	$\pm 0.1\%$ FS	55 20	Current transformer used for >5 Adc		D
Thermocouples- cold junction compensated, linearized by duTec I/O controllers									
Temperature	ITCE	0-435°C	32-815°F	0.11°C .19°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Purple	All thermocouples include mating connector for sensor to module connection.	J
	ITCJ	0-700°C	32-1292°F	0.17°C .31°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Black		J
	ITCJ-1	-80-750°C	-112-1382°F	0.20°C .36°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Black		J
	ITCK	-100-924°C	-148-1695°F	0.25°C .45°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Yellow		J
	ITCK-1	-100-1250°C	-166-2282°F	0.28°C .60°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Yellow		J
	ITCR	0-960°C	32-1760°F	0.23°C .42°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Green		J
	ITCR-1	0-1760°C	32-3200°F	0.43°C .77°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Green		J
	ITCS	0-1034°C	32-1893°F	0.25°C .45°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Green		J
	ITCS-1	0-1760°C	32-3200°F	0.43°C .77°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Green		J
	ITCT	-200-224°C	-328-435°F	0.10°C .19°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Blue		J
	ITCT-1	-120-400°C	-184-752°F	0.13°C .23°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Blue		J
ITCT-2	0-150°C	32-302°F	0.04°C .07°F	$\pm 3^\circ$ C $\pm 5^\circ$ F		Blue		J	
RTDs	ITR100	-50-350°C	-58-662°F	0.10°C .18°F	100 $\pm 0.8^\circ$ C $\pm 1.4^\circ$ F		White		B
	ITR100-1	0-100°C	32-212°F	0.02°C .04°F	100 $\pm 0.8^\circ$ C $\pm 1.4^\circ$ F		White		B
Temp. Sensor	ITP590	-188-150°C	-306-302°F	0.08°C .14°F	$\pm 0.3^\circ$ C $\pm 0.5^\circ$ F				C
	ITP590-1	-50-150°C	-58-302°F	0.05°C .09°F	$\pm 0.3^\circ$ C $\pm 0.5^\circ$ F				C
Frequency	IDC5NP	0-100 Hz	0.04 Hz	1.8K	± 1 Hz		Non-Polarized		I
	IDC5D	0-500 Hz	0.04 Hz	1.2K	± 1 Hz				I
	IDC5Z	0-500 Hz	0.04 Hz	10K	± 1 Hz	55 20	Bipolar input signal 0.5-32V		I
	IF2.5K-B	0.3-2.5 KHz	0.61 Hz		$\pm 0.1\%$ FS	55 20	Magnetic pickups, ± 0.2 -10V		E
	IF5K-B	0.3-5 KHz	1.22 Hz		$\pm 0.1\%$ FS	55 20	Magnetic pickups, ± 0.2 -10V		E
	IF10K-B	0.3-10 KHz	2.44 Hz		$\pm 0.1\%$ FS	55 20	Magnetic pickups, ± 0.2 -10V		E
	IF2.5K-L	0-2.5 KHz	0.61 Hz	10K	$\pm 0.1\%$ FS	55 20			I
	IF5K-L	0-5 KHz	1.22 Hz	10K	$\pm 0.1\%$ FS	55 20			I
IF10K-L	0-10KHz	2.44 Hz	10K	$\pm 0.1\%$ FS	55 20			I	

A B C D E F G H I J K L



24Vdc Voltage Output

Analog 3 Wire RTD

Analog 590 Temperature Sensor Input

Analog AC Current Input

Analog Bipolar Frequency Input

Analog current Input w/Source

Analog Current Input

Analog Current Output

Analog Frequency Input

Analog Thermocouple Input

Analog Voltage Input

Analog Voltage Output



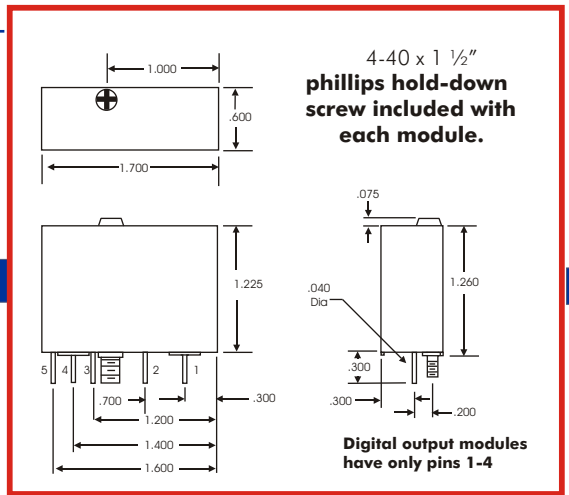
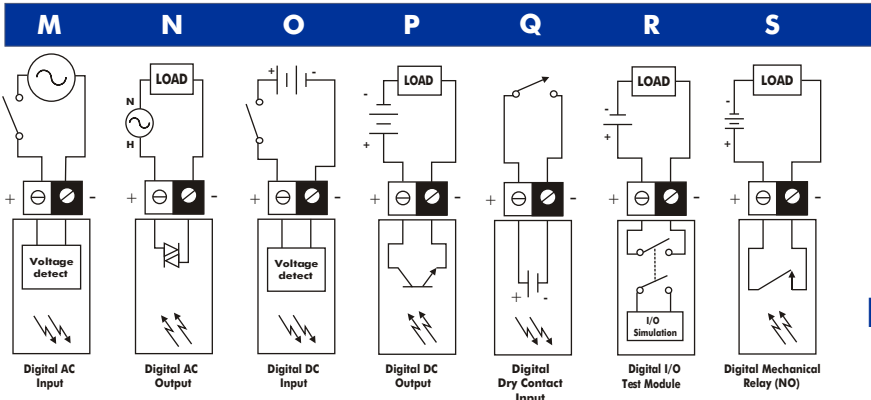
With the most comprehensive variety of modules in the industry, duTec's advanced engineering lets you interface with virtually any sensor or actuator of any process.

ANALOG MODULES									
ANALOG OUTPUT MODULES	Range (12 bits)	Resolution nom. Ohms	Input Res. @25 C°	Accuracy Gain	Drift ppm/°C Offset	Connect Color	Notes	Figure	
Analog Volts	OV5	0-5 Vdc	1.22 mVdc	0.2%FS	55 20		Provides output voltage	L	
	OV10	0-10 Vdc	2.44 mVdc	0.2%FS	55 20		Provides output voltage	L	
Analog Current	OI420	4-20 mA dc	3.91 uAdc	0.2%FS	55 20		Provides output current	H	
Power Supply	SPS-1	24 Vdc open circuit; 30 mA max					Can provide loop power for II420	A	

DIGITAL MODULES																
DIGITAL INPUT MODULES		Range max volts	Load Current, Amps Cont min Surge			ON min Volts	OFF max Volts	Sat volts	OFF-to-ON Delay, mSec	ON-to-OFF	Input Res. nominal ohms	Label Color	dV/dt Static KV/uSec	Comm Pwr Factor	Leakage Current mA	Figure
AC	IAC5 ^{1,2}	140 rms	-	-	-	90 rms	25	-	20	20	22 K	Yellow				M
	IAC5A ^{1,2}	280 rms	-	-	-	180 rms	50	-	20	20	60 K	Yellow				M
DC	IDC5D ^{1,2}	32 dc	-	-	-	3 dc	1	-	0.2	0.4	1.8 K	White				O
	IDC5NP ^{1,2}	32 dc	-	-	-	10 dc	1	-	5	5	1.8 K	White				O
Contact Test	IDC5S											White				Q
	TIO1	120 ac/dc	5	0					Manual	Manual		White				R
DIGITAL OUTPUT MODULES																
AC	OAC5 ^{1,2}	140 rms	3.5	0.03	80	24 rms	1.5	0.5Hz	0.5Hz		Black	3	0.5	2 ms	N	
	OAC5A ^{1,2}	280 rms	2.5	0.03	80	24 rms	1.5	0.5Hz	0.5Hz		Black	3	0.5	4 ms	N	
DC	ODC5 ^{1,2}	60 dc	3.5	-	5	3 dc	1.2	20	50		Red			1.5 dc	P	
	ODC5A	200 dc	1	-	1.5	4 dc	1.8	75	750		Red			.01 dc	P	
Contact Test	ODC5R	10 VA		0.5				500	600		Red				S	
	TIO1	120 ac/dc		0				Manual	Manual		White				R	

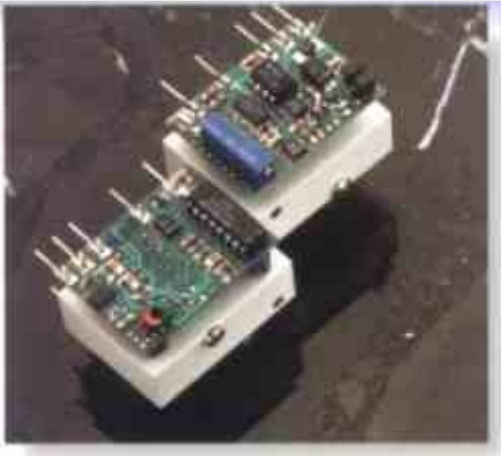
- Notes: ¹ UL File number Es8632 ⁴ One cycle
² Isolation 4,000 Vrms ⁵ One second
³ 1 A @ 45 C, Derate 18mA/V C°

Digital modules are interchangeable with industry modules of the same type.



INNOVATIVE I/O SINCE 1977 **duTec**

**INNOVATIVE
I/O SINCE
1977**



Mix and Match Analog & Digital with duTec's Remote I/O Products!

Real-world process control is a mixture of analog and digital I/O. Open architecture systems from duTec provide proven, cost-effective solutions that optimize your capabilities. Our I/O products can be controlled from a remote host PC, operate as a StandAlone controller or both.

- duTec's industrial I/O controllers can be populated with any mixture of analog or digital, input or output, ac or dc modules. Because real world process control systems use a wide variety of signal types, single point packaging lowers total system costs, simplifies troubleshooting, and reduces back-up inventory requirements.
- Omni-isolated I/O modules provide point-to-point, point-to-logic and point-to-power supply protection from accidental damage to controllers or computers and prevent ground loops.
- The command instructions, a superset of the Optomux™ protocol, is supported by over 30 third party MMI and SCADA software packages. I/O products from duTec can operate simultaneously with other products on the same network using the same software.
- No jumpers-baud rates and communication addresses are set by an on-board push button or remotely by the host. A continuous display verifies the selected baud rate and addresses. It operates over RS-232/422/485 networks from 300 to 38,400 baud.
- Built-in LCFs (Local Control Functions) add StandAlone remote control for faster, more predictable real-time response. LCFs include logic gates, analog compare and math, dead-band and PID controllers, and ladder logic.
- The Windows™ Based LCF Program Generator software configures the interactions between analog and digital I/O modules and LCF Blocks to perform complex operations.
- Comprehensive high temperature product testing and readily available technical support ensure worry-free installation operation and product satisfaction for your customer.

duTec

**6979 Wales Road
Northwood, OH 43619**

The historic achievements of duTec's founder, John Dute', have made the company a leader in control innovations. His previous company, Information Instruments, Inc., in partnership with General Motors, developed the earliest computer-controlled production equipment. He later invented the Standard Machine Controller or PLC. DuTec's progressive I/O technology is in high demand, and has been licensed to others in the industry.

Phone: 419/-666-4700 **Fax:** 419/-666-4702

Website: [Http://www.dutec.net](http://www.dutec.net) **E-mail:** info@dutec.net

Support: Support@dutec.net