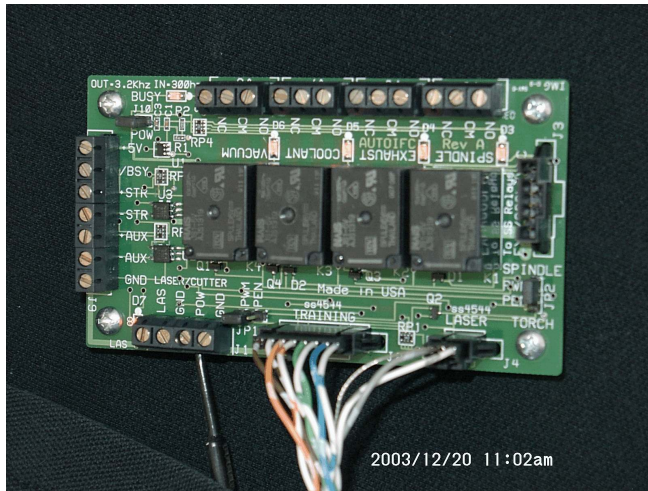


# Testra Corporation

## AUTOIFC-x Automation Interface

### Specifications

December 2003



#### Overview

The AUTOIFC is used along with the ss4544 series motion control systems. It provides expanded I/O capability to the system taking place of a PLC in many applications. Control of these I/O's are provided by the application firmware LExxx or thru the GMCAPL Windows DLL for do it yourself applications.

The AUTOIFC is connected to the ss4544 8 pin Training connector and the 3 pin Laser/PWM connector via a supplied 2' cable allowing it to be mounted in a control cabinet near the ss4544. Mounting may be done with supplied 6-32 threaded 1/2 inch standoffs.

Four 10 amp 125v SPDT relays allow high power external devices to be controlled. DC outputs are also supplied that may be used drive solid state relays directly.

There is also 0 to +5v analog output for power level control, and opto-isolated I/O's for remote system control from a PLC or other control system.

Physical Size 4.5 x 2.5 inches ( 114.3 x 63.5 mm )  
Mounting Hole centers 4.0 x 2.0 inches ( 101.6 x 50.8 mm )  
Recommended Mounting hole diameter 0.150 in ( 3.81 mm )  
Supplied Standoffs 0.5 in ( 12.7 mm ) Threaded 6-32 english.

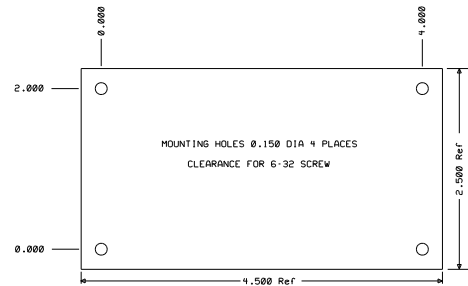
Relays contacts rated at 10 ampere 125 volt AC

Power Requirements +5v 350 ma with all relays on plus any user signal loads.

LED Indicators on all relays, SPINDLE, EXHAUST, COOLANT, VACUUM plus LASER ON and BUSY.

#### ORDERING INFORMATION

AUTOIFC Full Configuration with all options, including connecting cable to ss4544  
AUTOIFC-1 Stripped version for Plasma Torch with one Relay (SPINDLE) including connecting cable



**NOTE:** This interface requires that the STEP&DIR option PAL be installed in the ss4544 series system to get all functionality.

# AUTOIFC-x Automation Interface Specifications

J1 -LASER/CUTTER Screw Terminal Connector at 0.2 inch wire centers.

1	LAS	If JP! Set to PWM then 0 to +5v PWM output. Usually used to drive Opto input to Laser. If JP1 set to PEN then 0 to +5v signal for driving cutter, such as Laser, Plasma, Solenoid driver, etc. Drives only to +5v with 300 ohm pulldown to GND.. Output is capable of driving 100ma. Be careful not to short to ground, since this signal comes from a 1 ohm FET and is not current limited to protect the device.
2, 4	GND	Return signal for LAS and POW
3	POW	Analog 0 to +5.0v signal derived from PWM output of the ss4544. Output is buffered by an OP Amp and can drive a 10k load. The bandwidth is set by jumper J10 labeled POW. With the jumper in the bandwidth is about 300 Hz, while if left out is about 3.3kHz. In the ssLASER application this signal would represent the instantaneous power output desired from the laser, 0 to 100%. With the ssPLASMA application this would represent the torch current 0 to 100%.

J2 - TRAINING - Molex TriPeg 8 pin Connects to ss4544 TRAINING connector via cable.

1	VCC	+5v From ss4544 . Supplies 1 amp maximum for functions used on the AUTOIFC
2	EXHI	YPB From ss4544. Signal used to control the EXHAUST Relay.
3	COOL	YPA From ss4544. Signal used to control the COOL Relay
4	GND	GND From ss4544. Ground Return for VCC and other signals.
5	/AUX	XPB From ss4544. Auxilliary input for PWM input for Plasma Torch voltage
6	VAC	XPA From ss4544. Signal used to control the VACUUM Relay
7	/BSY	YIX From ss4544. Handshake signal indicating the ss4544 is not busy. LO=Busy HI=Not Busy
8	/STR	XIX From ss4544. Handshake signal used to remote start ss4544. LO=Start HI=Idle

J3 - EXH/COOL/VAC - Molex TriPeg 6 pin

1	EXHA	Output signal to drive external solid state relay for Exhaust. Output switches to +5v and will drive up to 100ma to a grounded load. Has clamp for inductive load. May also be used as input from NETPAN.
3	COOL	Output signal to drive external solid state relay for Coolant. Output switches to +5v and will drive up to 100ma to a grounded load. Has clamp for inductive load. May also be used as input from NETPAN.
5	VACC	Output signal to drive external solid state relay for Vacuum. Output switches to +5v and will drive up to 100ma to a grounded load. Has clamp for inductive load. May also be used as input from NETPAN.
2,4,6	GND	Ground Returns for EXHA, COOL, VACC

J4 - LASER - Molex TriPeg 3pin. Connects to ss4544 LASER/PWM connector via cable.

1	PWM	PWM Signal from ss4544 used to modulate Laser or control power with Analog POW output
2	GND	Ground return signal for PWM and PEN. Used also for ground shield in cable.
3	PEN	PEN control signal used to turn on laser or plasma when PWM used to control power level independently.

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# AUTOIFC-x Automation Interface Specifications

## J5 - SPINDLE - Screw Terminal Connector 3 pin 0.2 inch wire centers

1	NO	Normally open contact. Closed when system turns on spindle in ssROUTERr application, or plasma in ssPLASMA application. Jumper JP2 should be set to PWM when ssROUTER is the application and to PEN when ssPLASMA is the application. The jumper should be removed for ssLASER application.
2	CM	Common contact on Relay. Contacts are rated at 10 amps at 125 volt AC operation.
3	NC	Normally closed contact.

## J6 -EXHAUST - Screw Terminal Connector 3 pin 0.2 inch wire centers

1	NO	Normally open contact. Used to turn on Exhaust or VENT fans in ssROUTER, ssLASER, ssPLASMA and ssMILL applications.
2	CM	Common contact on Relay. Contacts are rated at 10 amps at 125 volt AC operation.
3	NC	Normally closed contact.

## J7 - COOLANT - Screw Terminal Connector 3 pin 0.2 inch wire centers

1	NO	Normally open contact. Closed when system turns on coolant or gas in ssROUTER, ssLASER, ssPLASMA or ssMILL
2	CM	Common contact on Relay. Contacts are rated at 10 amps at 125 volt operation.
3	NC	Normally closed contact.

## J8 -VACUUM - Screw Terminal Connector 3 pin 0.2 inch wire centers

1	NO	Normally open contact. Closed when system turns on Vacuum or other holddown fixturning in sROUTER or ssMILL applications. May be used also for auxilliary functions such as switching gas supplies, laser types, etc.
2	CM	Common contact on Relay. Contacts are rated at 10 amps at 125 volt operation.
3	NC	Normally closed contact.

## J9 - REMOTE - Screw Terminal Connector 7 pin 0.2 inch wire centers

1	+5V	+5 Volt Supply for BSY opto isolator at remote controller
2	/BSY	Not Busy signal for BSY opto isolator at remote controller. Can drive 8 ma. ( 390 ohm + 1.6v opto )
3	+STR	Start positive opto isolator input. Normally connected to remote +5v logic supply for TTL drive.
4	-STR	Start negative opto isolator input. Needs 8 ma (390 ohm in series with 1.6v opto) TTL or open collector
5	+AUX	Remote +PWM opto isolated input. Normally connected to remote +5v logic supply for TTL drive.
6	-AUX	Remote -PWM isolator input. Needs 8 ma (390 ohm in series with 1.6v opto) TTL or open collector
7	GND	Ground for use as cable shield.

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# AUTOIFC-x Automation Interface Specifications

## JP1 - Laser/Cutter Option Jumper Settings

PWM	IN	LAS output to Laser or other device is 5v PWM signal.
PEN	IN	LAS output to Laser or other device is 5v PEN signal

## JP2 - Spindle Relay Option Jumper Settings

PWM	IN	SPINDLE mode. Spindle is turned on/off using the PWM output from the s4544 system.
PEN	IN	TORCH mode. Torch is turned on/off with Spindle Relay using the PEN output from the s4544 system.
	OUT	LASER mode. Spindle relay is inactivated.