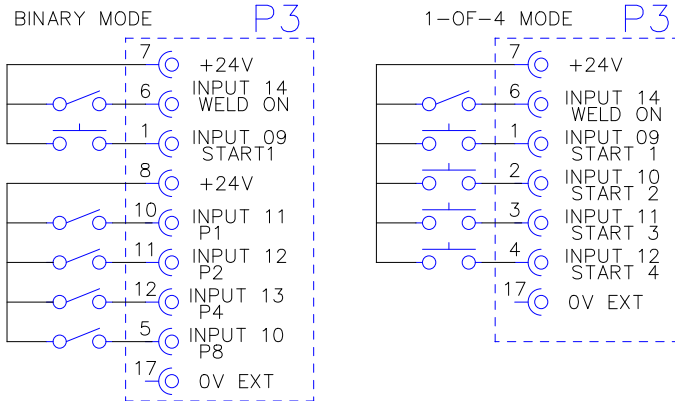


CONNECTIONS FOR SINGLE GUN/MACHINE/SEAM WELDER

SELECT SINGLE OR DUAL GUN OPERATION VIA TIMER CONFIGURATION FILE

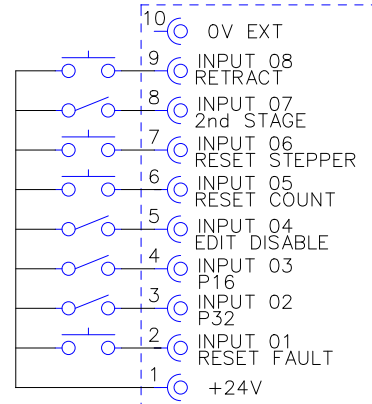
START AND PROGRAMME SELECTION INPUTS



SELECT BINARY OR 1-OF-4 MODE VIA TIMER CONFIGURATION FILE. SEE MANUAL FOR PROGRAM SELECTION FORMATS.

LINK WELD ON INPUT IF NOT REQUIRED.
 ALL INPUTS RATED 24V DC, 10mA.
 IF DRIVING FROM EXTERNAL 24V DC SOURCE, MAKE COMMON CONNECTION TO 0V EXT.
 DO NOT CONNECT EXTERNAL +24V SUPPLY TO TERMINALS MARKED +24V ON TIMER.
 0V EXT MAY BE EARTHED IF REQUIRED.

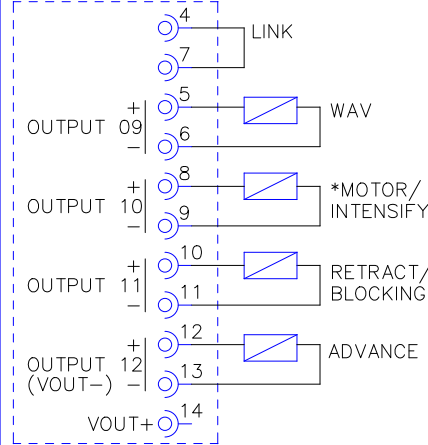
OTHER INPUTS P4



LINK 2nd STAGE INPUT IF NOT REQUIRED

P16/P32 CAN BE USED IN CONJUNCTION WITH P1/2/4/8, TO PROVIDE ACCESS TO PROGRAM NUMBERS ABOVE 15.

SOLENOID OUTPUTS P2



SOLENOID SUPPLY (VOUT) IS PROVIDED FROM TIMER. USE SOLENOIDS TO SUIT THIS SUPPLY.

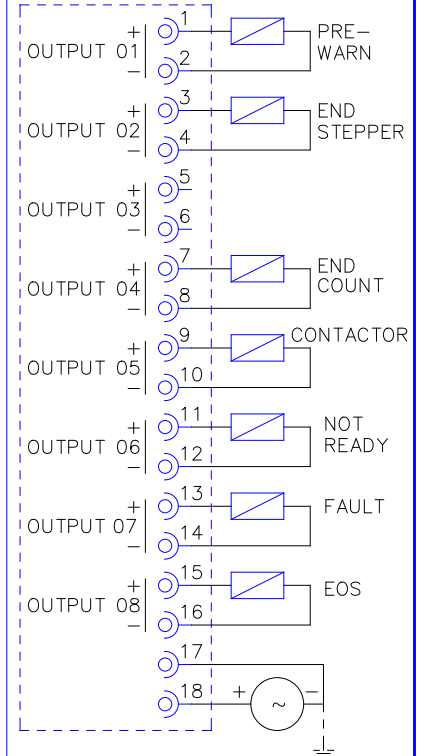
SOLENOID OUTPUTS ARE RATED AT 1A @ 110V AC / 3A @ 24V DC. 6,9,11,13 ARE COMMON (VOUT-) AND MAY BE EARTHED IF REQUIRED.

RETRACT OPERATION MUST BE SELECTED VIA TIMER CONFIGURATION.

*MOTOR OUTPUT IF SEAM MODE IS CONFIGURED.

CONFIGURE 'OHMA GUN' TO ENABLE ADVANCE, INTENSIFY AND BLOCKING FUNCTIONS.

SIGNAL OUTPUTS P1

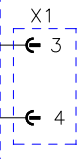
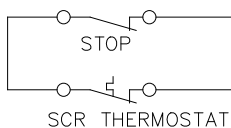


SIGNAL OUTPUTS ARE SOLID-STATE AND REQUIRE AN EXTERNAL VOLTAGE SOURCE. (110 V AC MAX OR 24V DC).

2,4,6,8,10,12,14,16,17 ARE COMMON AND MAY BE EARTHED IF REQUIRED.

OUTPUTS ARE RATED 0.5A.

External STOP circuit. See cabinet wiring diagram for exact location.



POWER CARD
 Part No. W293133
 Drawing No. 3U3447

IMPORTANT
 Inputs and Outputs are shared between the timer, events and sequencer. Use the EDIT INPUT MAP and EDIT OUTPUT MAP functions to configure.

DATE: 23-4-15

DRAWN: K.C.

CHECKED:

BF ENTRON LTD

TITLE: WELDSTAR WS2003
 USERS CONNECTIONS

DRAWING No: 3U3394

ISSUE No: 12

SHEET No: 1 of 4

CONNECTIONS FOR DUAL GUN OPERATION

SELECT SINGLE OR DUAL GUN OPERATION VIA TIMER CONFIGURATION FILE

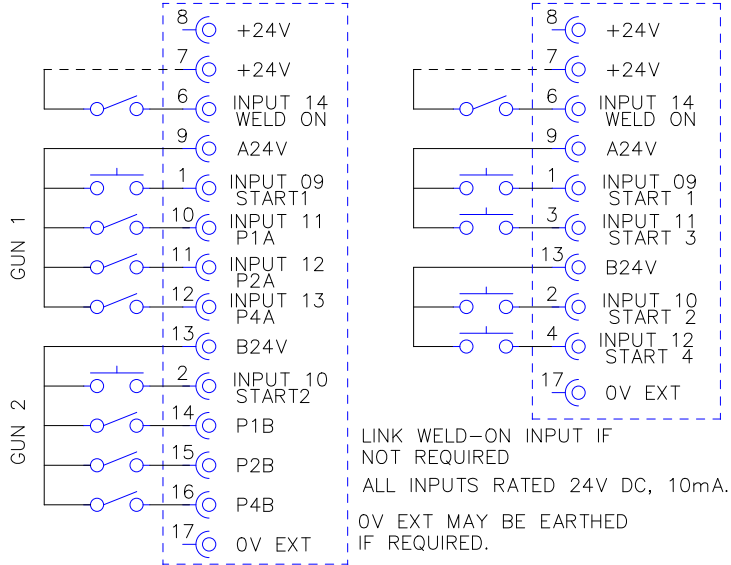
START AND PROGRAMME SELECTION INPUTS

BINARY MODE

P3

1-OF-4 MODE

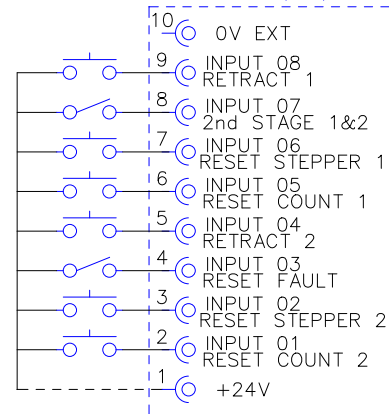
P3



SELECT BINARY OR 1-OF-4 MODE VIA TIMER CONFIGURATION FILE. SEE MANUAL FOR PROGRAM SELECTION FORMATS.

OTHER INPUTS

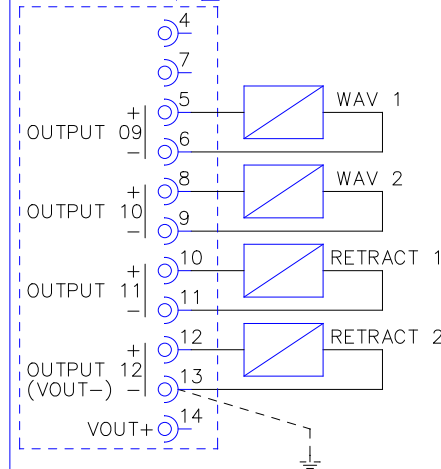
P4



LINK 2nd STAGE INPUT IF NOT REQUIRED
IF DRIVING FROM EXTERNAL 24V DC SOURCE, MAKE COMMON CONNECTION TO 0VEXT.
DO NOT CONNECT EXTERNAL +24V SUPPLY TO TERMINALS MARKED +24V ON TIMER.

SOLENOID OUTPUTS

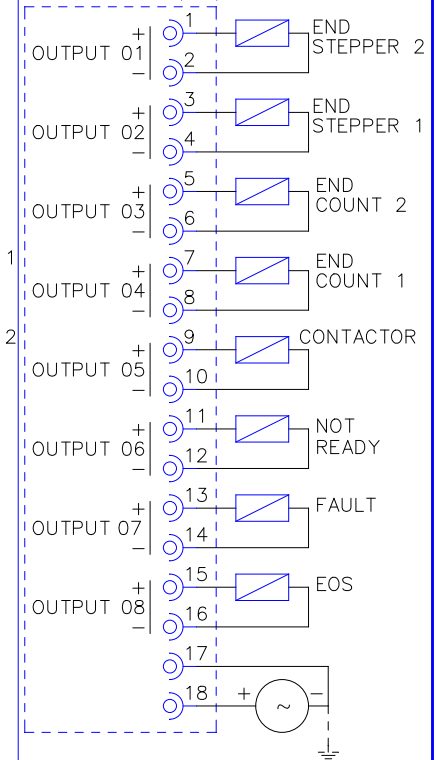
P2



SOLENOID SUPPLY (VOUT) IS PROVIDED FROM TIMER. USE SOLENOIDS TO SUIT THIS SUPPLY.
SOLENOID OUTPUTS ARE RATED AT 1A @ 110V AC / 3A @ 24V DC.
6,9,11,13 ARE COMMON (VOUT-) AND MAY BE EARTHED IF REQUIRED.
RETRACT OPERATION MUST BE SELECTED VIA TIMER CONFIGURATION FILE.

SIGNAL OUTPUTS

P1

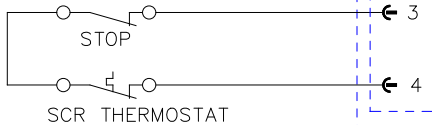


SIGNAL OUTPUTS ARE SOLID-STATE AND REQUIRE AN EXTERNAL VOLTAGE SOURCE. (110 V AC MAX OR 24V DC).

2,4,6,8,10,12,14,16,17 ARE COMMON AND MAY BE EARTHED IF REQUIRED.

OUTPUTS ARE RATED 0.5A.

External STOP circuit. See cabinet wiring diagram for exact location.



POWER CARD Part No. W293133 Drawing No. 3U3447

IMPORTANT Inputs and Outputs are shared between the timer, events and sequencer. Use the EDIT INPUT MAP and EDIT OUTPUT MAP functions to configure.

DATE: 23-4-15

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TITLE: WELDSTAR WS2003 USERS CONNECTIONS

DRAWING No: 3U3394

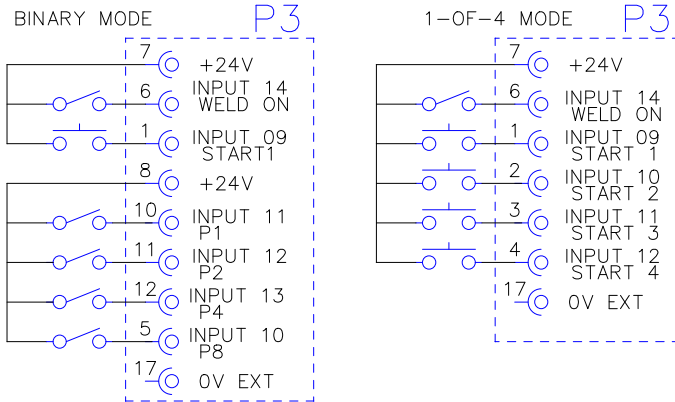
ISSUE No: 12

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CONNECTIONS FOR MULTI-GUN MACHINE

SELECT MODE OF OPERATION VIA TIMER CONFIGURATION FILE

START AND PROGRAMME SELECTION INPUTS



SELECT BINARY OR 1-OF-4 MODE VIA TIMER CONFIGURATION FILE. SEE MANUAL FOR PROGRAM SELECTION FORMATS.

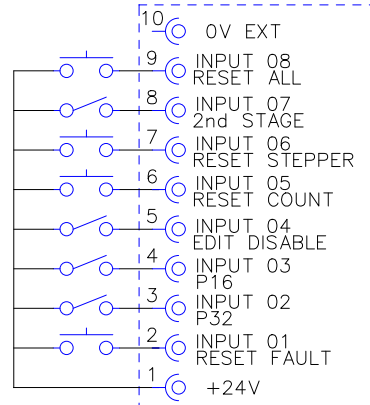
LINK WELD ON INPUT IF NOT REQUIRED

ALL INPUTS RATED 24V DC, 10mA. IF DRIVING FROM EXTERNAL 24V DC SOURCE, MAKE COMMON CONNECTION TO 0V EXT.

DO NOT CONNECT EXTERNAL +24V SUPPLY TO TERMINALS MARKED +24V ON TIMER.

0V EXT MAY BE EARTHED IF REQUIRED.

OTHER INPUTS P4

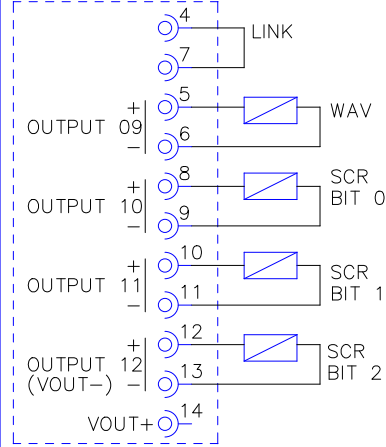


LINK 2nd STAGE INPUT IF NOT REQUIRED

P16/P32 CAN BE USED IN CONJUNCTION WITH P1/2/4/8, TO PROVIDE ACCESS TO PROGRAM NUMBERS ABOVE 15 IN MULTI_GUN MODE.

RESET ALL can be activated in conjunction with either RESET STEPPER or RESET COUNTER, to request that all steppers or counters be reset, otherwise only expired steppers or counters are reset.

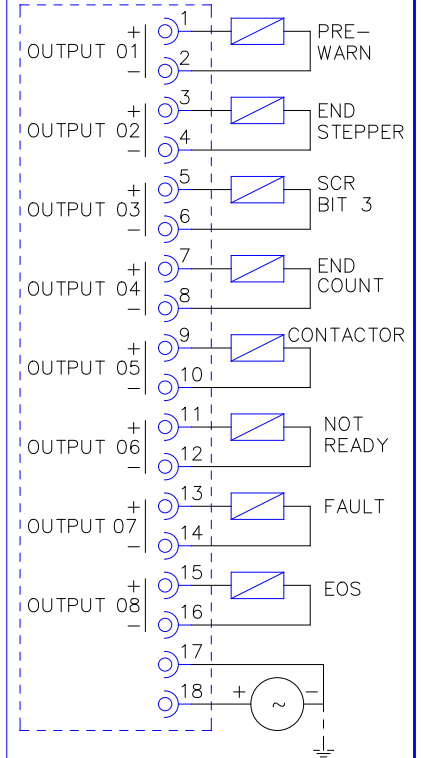
SOLENOID OUTPUTS P2



SOLENOID SUPPLY (VOUT) IS PROVIDED FROM TIMER. USE SOLENOIDS TO SUIT THIS SUPPLY.

SOLENOID OUTPUTS ARE RATED AT 1A @ 110V AC / 3A @ 24V DC. 6,9,11,13 ARE COMMON (VOUT-) AND MAY BE EARTHED IF REQUIRED.

SIGNAL OUTPUTS P1

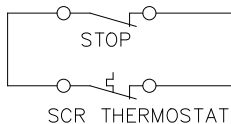


SIGNAL OUTPUTS ARE SOLID-STATE AND REQUIRE AN EXTERNAL VOLTAGE SOURCE. (110 V AC MAX OR 24V DC).

2,4,6,8,10,12,14,16,17 ARE COMMON AND MAY BE EARTHED IF REQUIRED.

OUTPUTS ARE RATED 0.5A.

External STOP circuit. See cabinet wiring diagram for exact location.



POWER CARD
Part No. W293133
Drawing No. 3U3447

IMPORTANT
Inputs and Outputs are shared between the timer, events and sequencer. Use the EDIT INPUT MAP and EDIT OUTPUT MAP functions to configure.

DATE: 23-4-15

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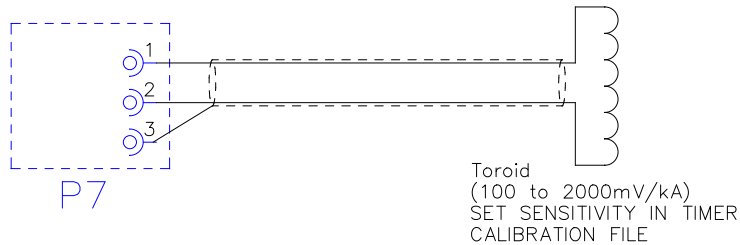
TITLE: **WELDSTAR WS2003 USERS CONNECTIONS**

DRAWING No: **3U3394**

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TOROID INPUT



NOTE: Toroid output should be >250mV

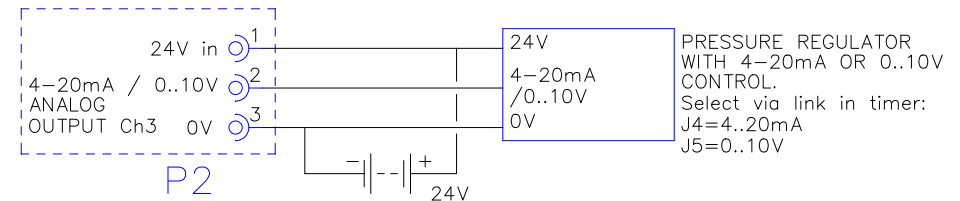
e.g.

For a 150mV/kA toroid, min current = $250/150 = 1.66\text{kA}$

For a 1400mV/kA toroid, min current = $250/1400 = 178\text{A}$

PRESSURE CONTROL

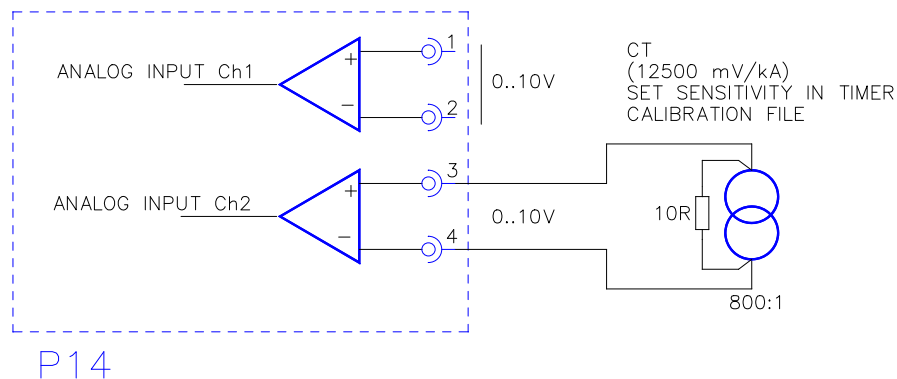
REGULATED 24V DC SUPPLY MUST BE CONNECTED TO P2.



These connections are only available on updated controls, produced after early 2008

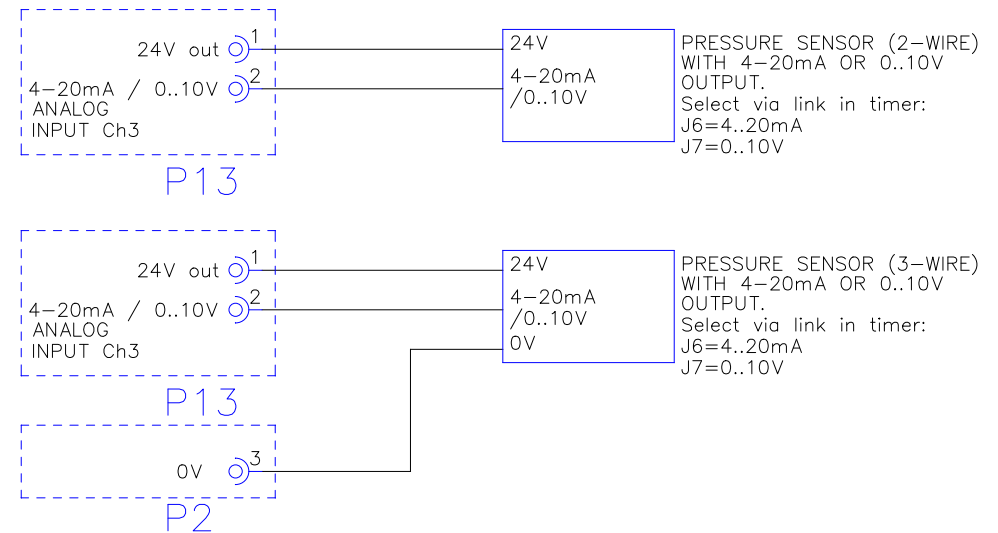
ANALOG INPUTS

REGULATED 24V DC SUPPLY MUST BE CONNECTED TO P2 (see above).



Analog input Ch2 may be used as a general purpose 0..10V input or for current measurement by connecting an iron-cored CT as shown. When connecting a CT, the peak signal should not exceed 10V. This gives a current range of 80 A to 800 A with the arrangement shown, and thus is normally used on primary currents only. A lower range of 35 A to 360 A may be obtained by substituting the 10 Ohm resistor for a 22 Ohm and then setting the sensitivity to 27500 mV/kA.

Use of the CT is the recommended method for seam welding.



NOTE: in current mode (4..20mA), input at P13 is a current SINK. Consequently, the connected sensor must be a current SOURCE. A SINK/SOURCE converter module is available from BF Entron.

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TITLE: WELDSTAR WS2003
USERS CONNECTIONS

DRAWING No: 3U3394

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