G3871

ENGINEERING CONTROLLED MANUFACTURER: No

CHANGE DETAIL: Changed J43-1 to J43-3

INVERTEC V350PRO MACHINE SCHEMATIC

SWITCH BOARD

MAIN INPUT RELAY CR1

J20-4 → 609

J20-8 → 602

209

CR1

206 205

205 → J21-6 → 616

V/F CONVERTER # 1

J21-2 → 608

J21-1 → 1001

J21-5 → 1002

4200 uF

4200 uF

203 208

202 204

204 → J21-7 → 605

V/F CONVERTER # 2

J21-3 → 610

J21-4

J21-8

4200 uF

4200 uF

207 201

A-OUT

B-IN

B-OUT

A-IN

MAIN TRANSFORMER

RECONNECT SWITCH

Dashed lines represent copper bus connections.

Shown connected for 200 - 240 Volt Input Voltage

SNUBBER BOARD

REACTOR

OUTPUT DIODES

FR-IN

BK-IN

REACTOR

B1

SNB

CONTROL BOARD

609 → J6-9 ← +15V

602 → J6-2 ← MAIN RELAY CONTROL

616 → J6-16 ← VOLTAGE / FREQUENCY CONVERTER #1 (+)

608 → J6-8 ← VOLTAGE / FREQUENCY CONVERTER #1 (-)

1001 → J10A-1 ← PRIMARY CURRENT SENSE #1 (-)

1002 → J10A-2 ← PRIMARY CURRENT SENSE #1 (+)

I OUT → J90-3 → 801 → J8-1 ← CURRENT FEEDBACK (4V=500A)

+15V → J90-1 → 802 → J8-2 ← +15V

-15V → J90-2 → 804 → J8-4 ← -15V

GND → J90-4 → 806 → J8-6 ← CONTROL BOARD COMMON

CURRENT TRANSDUCER

901A

901B

R1 250 Ohms

POSITIVE

C1/TP1 .05uF 600V 320V 160J

TP3 150V 80J

S1

21B

21

903A

MAIN CHOKE

THERMOSTAT

903B

NEGATIVE

C2/TP2 .05uF 600V 320V 160J

506 503

506

505

901 → J9-1 ← (+) STUD VOLTAGE SENSE

903 → J9-3 ← (-) STUD VOLTAGE SENSE

503 → J5-3 ← THERMOSTAT

502 → J5-2 ← THERMOSTAT

605 → J6-5 ← VOLTAGE / FREQUENCY CONVERTER #2 (+)

610 → J6-10 ← VOLTAGE / FREQUENCY CONVERTER #2 (-)

1010 → J10B-1 ← PRIMARY CURRENT SENSE #2 (-)

1020 → J10B-2 ← PRIMARY CURRENT SENSE #2 (+)

611 → J6-11 ← GND (a)

612 → J6-12 ← SOFT START CONTROL

615 → J6-15 ← PULSE TRANSFORMER GATE DRIVE

607 → J6-7 ← PULSE TRANSFORMER GATE DRIVE

715 → J7-15 ← + 15 (a)

716 → J7-16 ← FAN CONTROL

407 → J4-7 ← POWERDOWN SIGNAL (HIGH=RUN)

412 → J4-12 ← +15V (a)

408 → J4-8 ← +5V (a)

410 → J4-10 ← GND (a)

411 → J4-11 ← -15V (a)

403 → J4-3 ← +5V SPI (b)

402 → J4-2 ← +15V SPI (b)

401 → J4-1 ← GND SPI (b)

406 → J4-6 ← +5V RS232 (e)

405 → J4-5 ← GND (e)

438 → J3-1 ← (+)15 VOLT SPI

432 → J3-2 ← (+)5 VOLT SPI

431 → J3-3 ← /SS

J3-4 ← CS1

J3-5 ← CS2

J3-6 ← CS3

J3-7 ← MISO

J3-8 ← SCK

J3-9 ← MOSI

J3-10 ← GROUND SPI

POWER BOARD

power down signal → J42-4

MACHINE CONTROL POWER SUPPLY

+15 (a) → J42-1

+5 (a) → J42-3

GND (a) → J42-5

-15 (a) → J42-2

SPI POWER SUPPLY

+5 SPI (b) → J43-3

+15 SPI (b) → J43-6

SPI GND (b) → J43-12

RS232 supply

+5 RS232 (e) → J43-4

GND (e) → J43-9

CHOPPER POWER SUPPLY

+20 (c) → J43-8

GND (c) → J43-2

+20 (d) → J43-7

GND (d) → J43-1

100 AMP CIRCUIT BREAKER / INPUT SWITCH

INPUT LINES

W — WHITE (BROWN) — L1 — C

V — RED (BLACK) — L2 — B

U — BLACK (BLUE) — L3 — A

G — GREEN (GREEN/YELLOW) — L3 — GND

CE COLORS IN PARANTHESYS

N.B.

N.C.

H1

TP3 TP2 TP1

~AC3 ~AC2 ~AC1

POS

NEG

A

2A

AUXILIARY TRANSFORMER

H1 H2 H3 H4 H5 H6

(200-208) (220-230) (380-415) (440-460) (550-575)

COM2A COM2 115A 115B COM1 COM1A 24V 28V 42V

31 → J52-11

532 → J52-1

541 → J52-16

41A → J56-6

24 → J52-7

54 → J56-1

42 → J52-5

115B

COM2

FAN

115 VAC

FAN

FAN

716 607 615

715

612

611

J22-4 J22-1 J22-2 J22-3 FAN POWER

J20-2 J20-6 FAN CONTROL (-) (+)

J20-1 J20-5 PULSE TRANSFORMER

J20-7 J20-3 SOFT START (+) (-)

high = softstart off

xxxxxx

505

502

1020 1010

65B 65 66 66B 41A

J45-2

+40 VDC

J45-1

532 2A 32 42 24 41 21B 75B 41B

24 / 42 Volt Amphenol (top amphenol on back of machine)

2B 77B 76B 4B

115 Volt Amphenol (bottom amphenol on back of machine)

21 75B 75A 31 32 2B 2A 4B 77A 76A 4A

AMPHENOLS VIEWED FROM FRONT (OUTSIDE OF MACHINE)

76 77 4 2

6 Pin Ampehnol (front of machine)

75

554

GAS SOLENOID

553

551 552 P55-1 P55-2 P55-3 P55-4 438 431

REMOTE BOARD

NO CONNECTION
"2" LEAD
"77" LEAD
14 PINS "76" LEAD
SOLENOID SUPPLY (+)
14 PINS "4" LEAD
6 PINS "4" LEAD
6 PINS "76" LEAD
SOLENOID COIL (-)
SOLENOID SUPPLY (-)

J331-12 J331-11 J331-10 J331-9 J331-8 J331-7 J331-16 J331-15 J331-4 J331-3 J331-2 J331-1

GROUND SPI MOSI SCK MISO CS3 CS2 CS1 /SS +5 VOLT SPI NO CONNECTION

J31-10 J31-9 J31-8 J31-7 J31-6 J31-5 J31-4 J31-3 J31-2 J31-1

+10 Volts

graphical representation of potentiometer connection

FLEX CIRCUIT

MODE SELECT HOT START ARC CONTROL

MODE SELECT PANEL

-OR-

ADVANCED PROCESS PANEL

FLEX CIRCUIT

LOCAL CONTROL

275 277 276

LOCAL CONTROL
LOCAL CONTROL
NO CONNECTION
LOCAL CONTROL

J311-1 J311-2 J311-3 J311-4

LOCAL / REMOTE CONTROL

REMOTE LOCAL

REMOTE ON

WELD TERMINALS ON / OFF

STATUS PANEL

FLEX CIRCUIT

GROUND SPI MOSI SCK MISO CS3 CS2 CS1 /SS (+5 VOLT SPI) NO CONNECTION

J31-10 J31-9 J31-8 J31-7 J31-6 J31-5 J31-4 J31-3 J31-2 J31-1

THERMAL

AMPS VOLTS

DISPLAY PANEL

FLEX CIRCUIT

GROUND SPI MOSI SCK MISO CS3 CS2 CS1 /SS +5 VOLT SPI NO CONNECTION

J31-10 J31-9 J31-8 J31-7 J31-6 J31-5 J31-4 J31-3 J31-2 J31-1

CONNECTOR CAVITY NUMBERING SEQUENCE (VIEWED FROM COMPONENT SIDE OF BOARD)

J1,J6,J7, P52: 1 → 8, 9 → 16

J31,J33, J34,J37: 1 → 5, 6 → 10

J2,J5,J11, J22,J41, J311,P55: 1 2, 3 4

J9,J42,P53: 1 → 3, 4 → 6

J8,J20, J21: 1 → 4, 5 → 8

J43, J331: 1 → 6, 7 → 12

J10A, J10B: 1, 2

LEGEND: ALL MACHINES; OPTION; COMPONENT OUTLINE

NOTES :

N.A. PC BOARD COMPONENTS SHOWN FOR REFERENCE ONLY. ALL COMPONENTS ARE NOT SHOWN.

N.B. INPUT POWER LINE FILTER IS PRESENT ONLY ON "CE" MODELS.

N.C. ON "CE" MODELS, MOV's ARE IN THE INPUT POWER LINE FILTER.

ELECTRICAL SYMBOLS PER E1537

UNLESS OTHERWISE SPECIFIED TOLERANCE MANUFACTURING TOLERANCE PER E2056 ON 2 PLACE DECIMALS IS ± .02 ON 3 PLACE DECIMALS IS ± .002 ON ALL ANGLES IS ± .5 OF A DEGREE MATERIAL TOLERANCE ("L") TO AGREE WITH PUBLISHED STANDARDS. DO NOT SCALE THIS DRAWING

DESIGN INFORMATION: DRAWN BY: mddon; ENGINEER:; APPROVED: D.R.S.

REFERENCE: -

SCALE: NONE

EQUIPMENT TYPE: INVERTEC V350PRO

SUBJECT: MACHINE SCHEMATIC

MATERIAL DISPOSITION: UF; APPROVAL DATE: 4/24/02; PROJECT NUMBER: CRM 34281

DOCUMENT NUMBER: G3871

DOCUMENT REVISION: B

SOLID EDGE

STRP