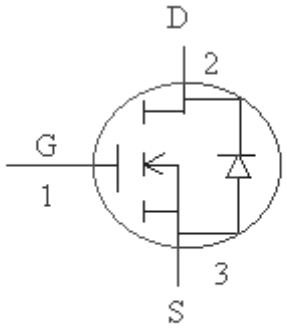
Frequently Asked Questions

1. How to measure FET?

There are JFET, Depletion MOSFET and Enhancement MOSFET.

a. Enhancement MOSFET

Following is an example program:

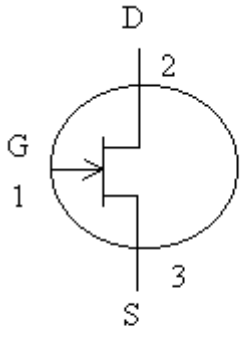


N channel
enhancement MOSFET

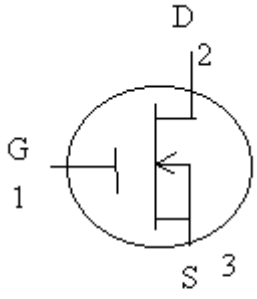
Device	STDVAL	ACTVAL	+%	-%	MD	A	B	G1
Q1	0	0.7V	30%	30%	DT	3	2	
Q1	0.2	3V	10%	70%	N	2	3	1

Control the voltage of gate from 2V to 3V till it turns on completely then measuring the Vds.

b. JFET and Depletion MOSFET



N channel JFET



N channel depletion
MOSFET

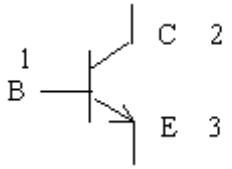
Following is an example program:

Device	STDVAL	ACTVAL	+%	-%	MD	A	B	G1
Q1	3	3V	30%	30%	PF	2	3	1
Q1	0.2	0.1V	30%	90%	N	2	3	1

Control the voltage of ACTVAL (Vgs) from 2V to 3V till the FET pinches off.

2. How to test the transistor with 3-terminal measurement?

Only measure the two ends of the diode of BC and BE for the transistor of Japanese
(ex : 2SAxxxx) to know if the diode is false soldering or wrong insertion.(ex: program
2). But for US transistor (ex : 2Nxxxx), measure the transistor with three terminals (
step 3) to detect the wrong insertion is necessary due to the pin of base is in the midd
Following is an example program:



STEP	Device	STDVAL	ACTVAL	+%	-%	MD	A	B	G1
1	Q1	0	0.7V	30%	30%	DT	1	2	
2	Q1	0	0.7V	30%	30%	DT	1	3	
3	Q1	0.2V	1V	10%	90%	N	2	3	1

Control the base voltage to saturate the transistor.

3. What are the conditions that the capacitors, resistors, inductors and unable to be measured?

Paralleled	R1	L1	C1	D1
R2	1	2	3	4
L2	2	5	6	7
C2	3	6	8	9
D2	4	7	9	10

1.When $R_1 > 10R_2$, R_1 cannot be measured.
2.When $X_L > 10R_2$, L cannot be measured; $X_L = 2£kfL$
3.When $R_2 > 10X_L$, R_2 cannot be measured.
4.When the capacitor is with a relatively large capacity, prolong the delay time or ma
CV mode to measure the resistance. When $10R_2 < X_C$, C cannot be measured.
5.When $R_2 > 10£[$, the misoriented inserted D is detectable.
6.When $L_2 > 10L_1$, L_2 cannot be measured.
7.When $10X_L < X_C$, C cannot be measured; when $10X_C < X_L$, L cannot be measured.
8.When $R_L < 10£[$, D cannot be measured.
9.When $C_2 > 10C_1$, C_1 cannot be measured. CAUTION! This feature is opposite to th
and L.
10.When C_2 is large, to measure D_1 need long time. When $D_1$and D_2 are paralleled
same direction, apply CM mode to measure them.

4. Can JET-300 be extended to dual press down unit?

Yes, Just rename jet300n.exe as jet300d.exe and take off the jumper of the retest on
mother board. The ICT will become a dual press down unit.

5. How to judge if the TestJet sensor has been properly installed?

When measuring the voltage (Vdc) between two terminal probes of the TestJet sensc
getting the values as listed, the sensor might be in the bad condition. Below are the r

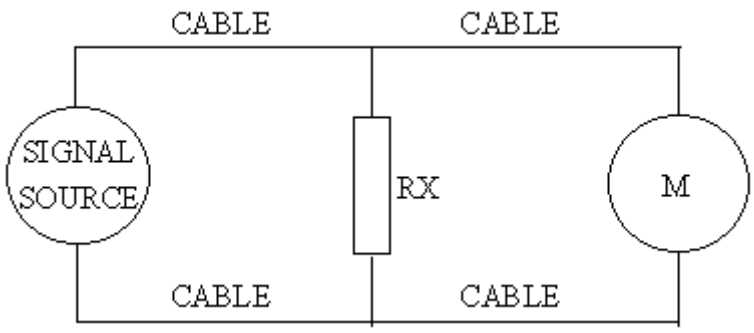
a. If Vdc=0V,
   i. the probe number setting is wrong in test program.
   ii. the cable of MUX board is bad.
   iii. the cable is not well connected.
b. If Vdc=5V, the sensor plate might be open.
c. If Vdc=0.7V, the system board or MUX board go wrong.
d. If Vdc=4.5V, the mechanical function is fine.

6. What could be the problems if it is unable to execute the auto test w head of the press down unit has been lowered?

a. Check if the Fix Auto flag in the status table is set ¡§ON¡¨
b. Check if the Proximity Reed Switch on the air cylinder is properly adjusted.
c. Check if the system control board, the cable and the fixture control board failed or r
d. Check if the fixture control cable is properly plugged.

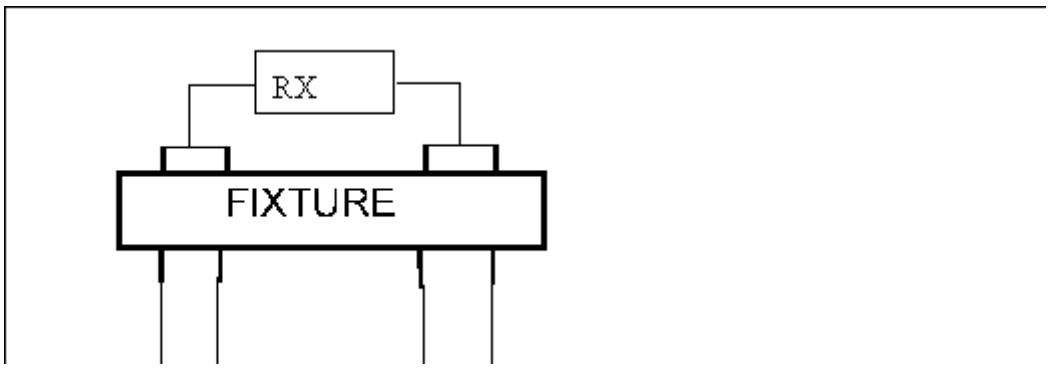
7. How to measure the small resistance?

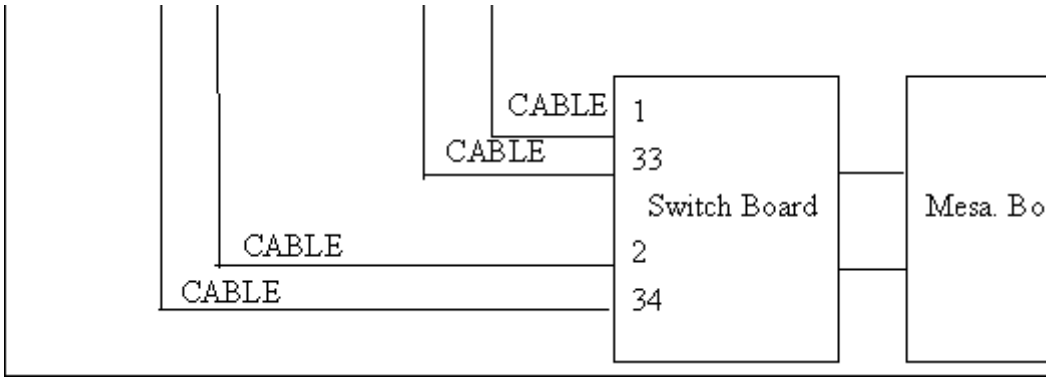
For small resistance measurement (0.1£[~2£[), regard it as jumper measurement. It i
measuring if any missing components occur on the board. For more accurate measu
four-wire-mode measurement is necessarily to be applied. The theory is as below:



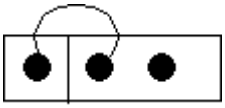
Signal sources and measurement has different loop individually so that the voltage or
be correctly measured.

Each relay board was set as two-wire-mode, thus you need below steps to modify to
mode:

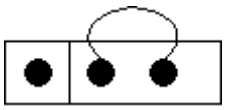




a. Take out the jumpers marked JA, JB and JC and make them open.
b. The short jumper is as



for JA0, JA1, JA2, JA3, JB0, JB1, JB2, JB3, JG0, JG1, JG2 and JG3. Make them op short as



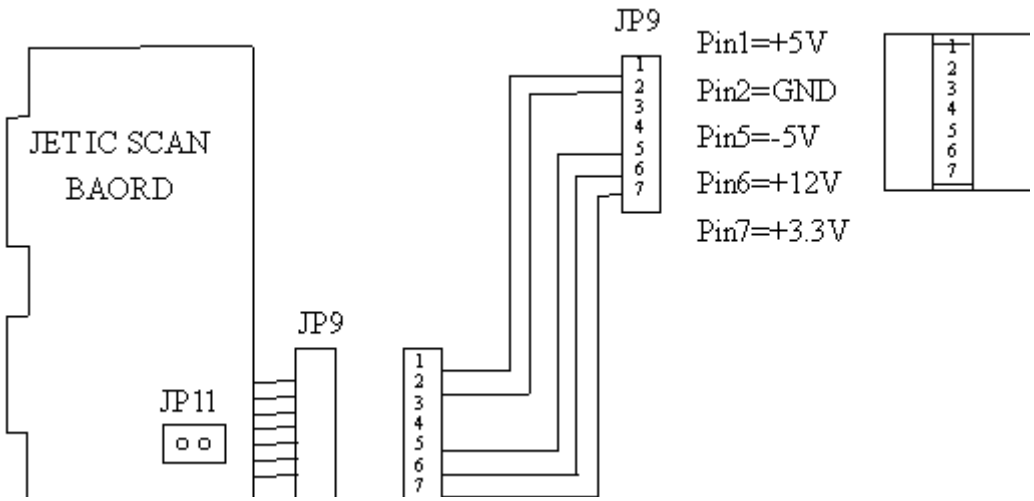
c. There are only 32 points left on relay board, because the second connector has be functioned as sense . To measure RX, set A as 1, B as 2 and pin 33 will set as sens and pin34 as sense of pin 2 automatically.
d. The program should be set as below:

Device	*STDVAL*	*ACTVAL*	*+%*	*-%*	*MD*	*A*	*B*	*G*	*¡K.*
R1		*0.1*	*30*	*30*	*D1*	*1*	*2*		

e. The modification is completed.

8. Does JET-300 provide functional test?

Yes, JET-300 does offer functional test. So far, we provide +5V, -5V, +12V, +3.3V pc

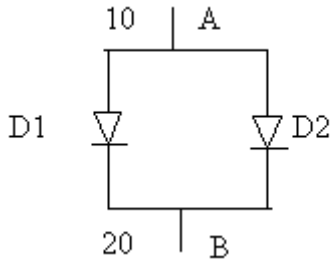


Add one more board with a 7-pin molex socket on the back of the fixture and set the p
below:

STEP	Device	Lc	STD	ACT	+%	-%	MD	TM	A	B	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	e
1	Vcc	A1	5	0V	5	5	HV	10	2	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
2	Vcc3	A1	3.3	0V	5	5	HV	0	10	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
3	END	A1	1	0V	5	5	HV	10	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Press [Alt] + [k] simultaneously in the edit screen to show the relay code. Fill No.4 an
and turn on the relay to send out the proper voltage. Be sure to turn off the power aft
measuring. (as step. 3)

9. How to measure the two paralleled diode?



Use CM mode to measure the paralleled diode. Following is the example program:

STEP	Device	Lc	STD	ACT	+%	-%	MD	RG	TM	A	B
1	D1	A1	0	0.7V	30	30	DT	0	0	10	20
2	D1	A1	40mA	0.7V	10	10	CM	0	0	10	20

Programming for Step 2 is to apply ACTVAL voltage (0.6v) to make the current about

10. How to judge the fail relay board when the error message appear d debugging relay board?

Example:

Open on B130 (B3: P2)

The message indicates that it is open on the P2 relay of the 3rd board belongs to the
point of the B switch. Replace the P2 relay of B switch of the 3rd board so that the jol

11. How to check the polarity of electrolyzed capacitors?

(a) Leakage current measurement
If C1 were 100uF 25V, rewrite the program as STEP2, press F9 to measure the norm
current of the capacitor and fill the value in the STDVAL field. If C1 were misoriented
the current value will be amplified.

STEP	DEVICE	STDVAL	ACTVAL	+%	-%	MD	A	B
1	C1	0	100uF	30	30	DT	10	20
2	C1	1.4mA	10V	30	30	CM	10	20

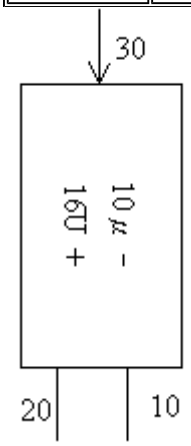
Remark : Each capacitor bears different durability, so the voltage under ACTVAL is r

Remark : Each capacitor bears different durability, so the voltage under "ACTVAL" is f

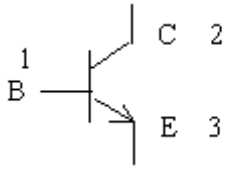
(b) Three-terminal measurement:

This method is used to measure the electrolyzed capacitor. Plant a probe on the top capacitor (as drawing shown) and rewrite the program as below:

STEP	DEVICE	STDVAL	ACTVAL	+%	-%	MD	T	A	B	G
3	C2	0	10uF	30	30	DC	0	10	20	0
4	C2	0.1	0.2V	30	0	LV	10	30	10	20



12. How to measure the£]value of the transistor?



NPN Transistor:

Set N in MD, 1 in RG and tune the Vb voltage in ACTVAL (start from 0.7V) until the u stable £]value is measured and fill the measured value in STDVAL. (ref. to STEP 1)

PNP Transistor:

Set P in MD, 1 in RG and tune the Vb voltage in ACTVAL (start from 4.3V and downw the utmost and stable£]value is measured and fill the measured value in STDVAL (re 2)

STEP	DEVICE	LC	STDVAL	ACTVAL	+%	-%	MD	RG	TM	A	B	G1	G2
1	Q3	D1	100	1.0V	30	30	N	1	5	2	3	1	0
2	Q4	D1	200	4.1V	30	30	P	1	5	2	3	1	0

13. How to measure the regulator IC?

Add external power and modify the hardware as following steps and attached drawin

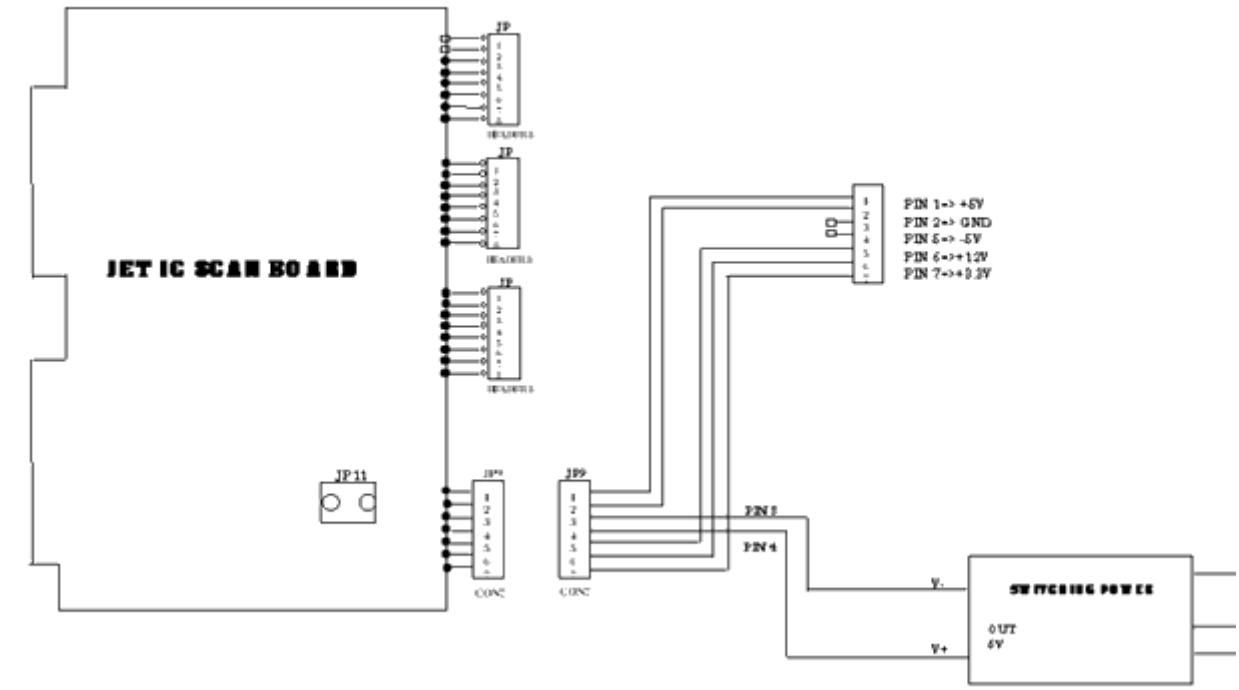
a. The existing fixture should be added with a Molex 7 pin socket which will be conne JP9 of
JET IC SCAN BOARD for power supply.

b. Pin 1 for +5V, Pin 2 for GND, Pin5 for -5V, Pin6 for +12V and Pin7 for +3.3V. Plea to the attached drawing B and program below to test its regulator IC output voltag VTT)If the STEP 8, 10 and 12 cannot release the voltage lower than 0.1V, increa value to the STEP 7, 9 and 11 till the STD value of STEP 8, 10 and 12 lower than 0.1V.

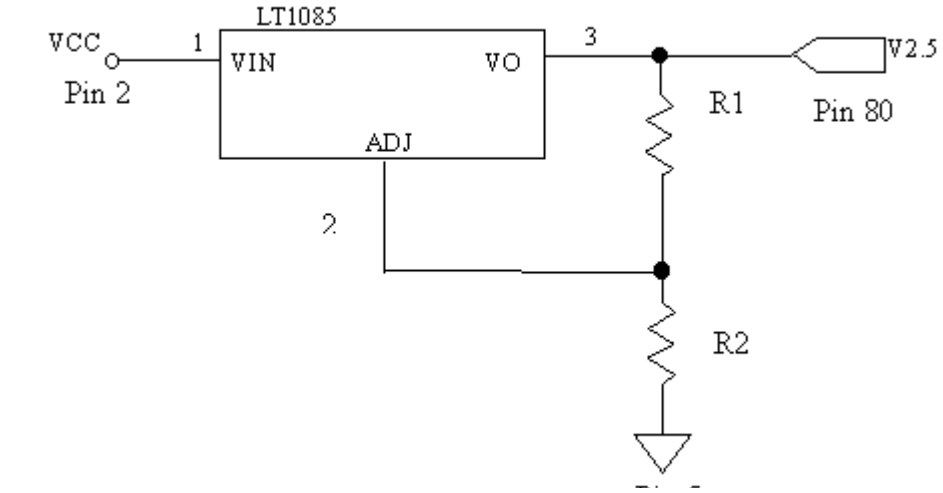
STEP	DEVICE	LC	STD	ACT	+%	-%	MD	RG	TM	A	B	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	VCC	A1	5	0V	10	10	HV	0	10	2	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2	VCC3	A1	3.3	0V	10	10	HV	0	0	10	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

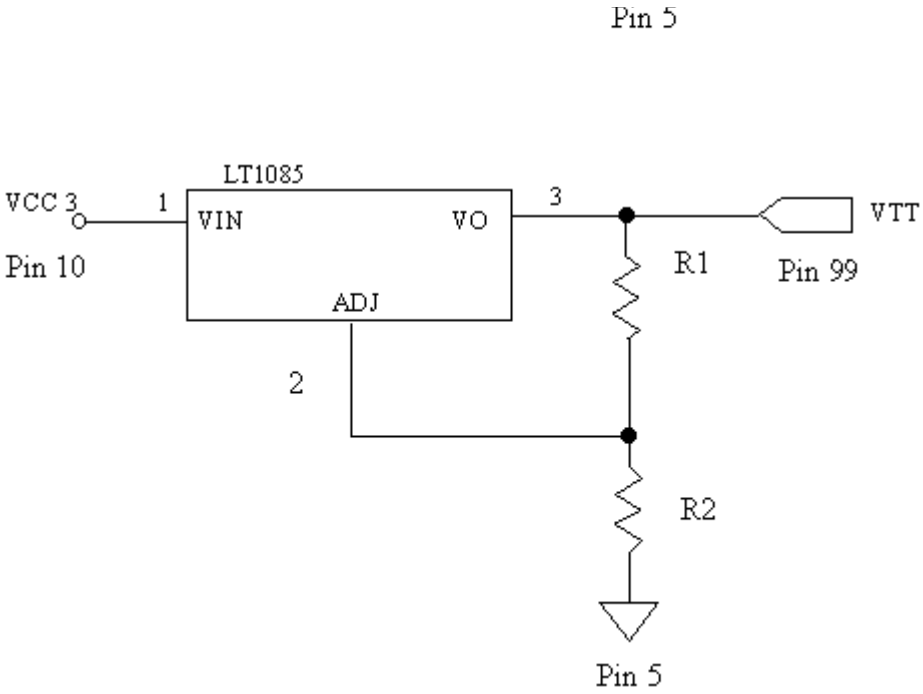
3	+12V	A1	12V	0V	10	10	HV	0	0	15	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
4	V2.5	A1	2.5	0V	5	5	HV	0	0	80	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
5	VTT	A1	2.1	0V	5	5	HV	0	0	99	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
6	END	A1	1mA	0.1V	00	00	CM	0	10	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	END	A1	1mA	0.1V	00	00	CM	0	10	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	END	A1	0.1	0V	10	00	HV	0	10	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	END	A1	1mA	0.1V	00	00	CM	0	10	10	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	END	A1	0.1	0V	10	00	HV	0	10	10	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	END	A1	1mA	0.1V	00	00	CM	0	10	15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	END	A1	0.1	0V	10	00	HV	0	10	15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Drawing A.



Drawing B.




Pin 5
LT1085
VCC 3
1
VIN
VO
3
VTT
Pin 10
R1
Pin 99
ADJ
2
R2
Pin 5