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**CUSTOMER'S ACCEPTANCE  
SPECIFICATIONS**  
(Backlight Inverters for cold cathode  
fluorescent lamp)

TYPE:INVC 816

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Record of Revision

DATE	PAGE	SUMMARY	Date Code & Rev.
31.May.2007		NEW	

## 1. Scope

- 1.1 This specification shall apply to inverter INVC816 to operate a cold cathode fluorescent lamp in the liquid-crystal display (LCD).
- 1.2 This inverter INVC816 is designed and adjusted for LMG74 \* 0PLFC , LMG74 \* 1PLBC and LMG532 \* XUFC , LCD-module. (Hitachi Displays type name)

## 2. General Specifications

General specifications and condition for use are shown below.

Item	Specification
Output Power	Nominal 1.35W
Cooling condition	Free air flow
Efficiency	60 % min.
Weight	11 g max.
Ambient temperature (direct ambient air of Inverter board)	Operating 10~50deg Stock -20~70deg
Humidity	90 % RH.max.
Corrosive gasses	Not acceptable
Audible sound level	35 dB max. at 30cm
MTBF	60000Hrs. min.

### 3. Electrical Characteristics

#### 3.1. Maximum rating

Items	Min.	Typ.	Max.	unit	Remarks
Input voltage	---	---	18.0	V	

#### 3.2. Operating Characteristics

3.0x130mm Lamp			AT=25deg.C		
Item	Min	Typ	Max	Unit	Remarks
Input voltage	7.0	12.0	17.0	V	
Input current	130	180	230	mA	at 12.0V
Rush current	---	---	2.0	A	at 12.0V
Lamp current	3.5	4.2	4.9	mA	at 12.0V
Lamp power	---	1.35	---	W	at 12.0V
Main frequency	50	65	80	kHz	at 12.0V
Dimming range	---	100~50	---	%	

All characteristics are measured by our certain test equipment. The measurement of condition should be stable lighting (more than 30 minutes after startup :at 25+/-1deg.C and no breath of wind) (The measurement of input rush current is exception) .

- (1) The electrical characteristics are measured as we show on measurement diagram Fig.1.  $V_{in}=12.0V$ .
- (2) As we show on measurement diagram Fig.1, the test equipment shall be V1:DC Volt meter (Class0.5) A1:DC Current meter(Class0.5) A2:AC Current meter type2016(Y.E.W) or FLUKE45(FLUKE)  $V_{in}$ :PW18-2TP(Kenwood) .
- (3) The line length of between the lamp and CN2(high voltage)is less than 150mm.

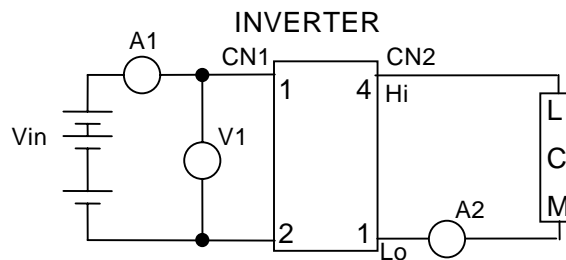
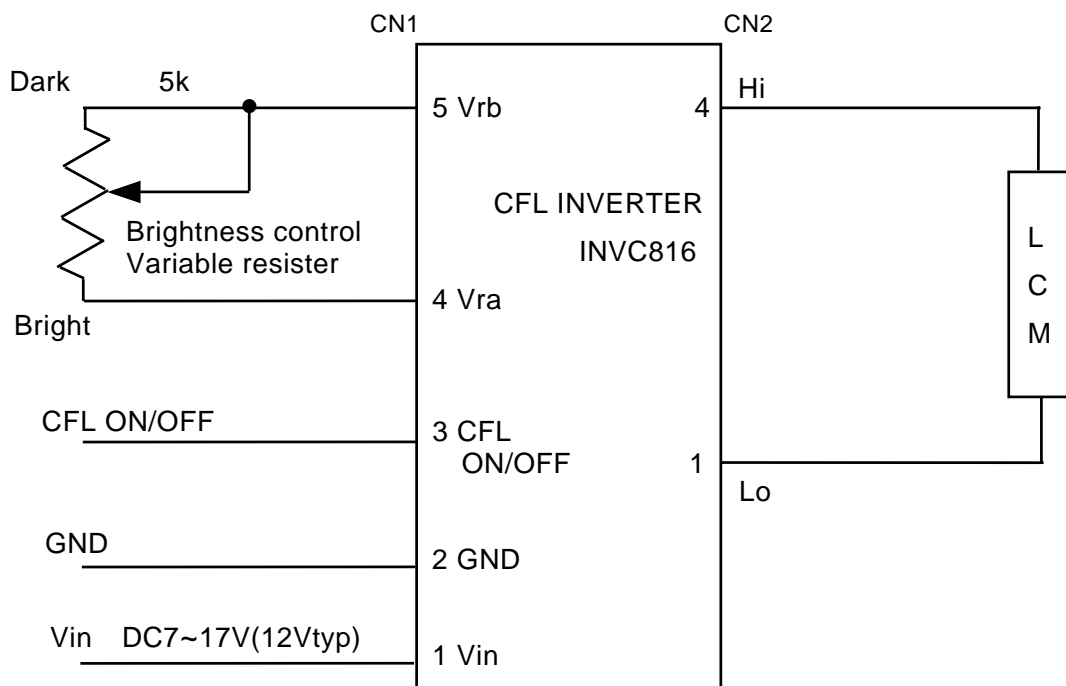


Fig.1 Wiring

### 3.3. Wiring Diagram



Remark : Controled by external open-collector circuit.

Fig.2 Wiring Diagram

#### 4. Reliability

Item	Test condition
Low temp. operate	10deg.C, 12.0V, 100%output, 500Hrs
High temp. operate	50deg.C, 12.0V, 100%output, 500Hrs
Low temp. stock	-20deg.C, 500Hrs
High temp. stock	70deg.C, 500Hrs
High temp. and high humidity	50deg.C, 90% 12.0V, 100%output, 500Hrs
Cyclic temp. operate	10deg.C - 25deg.C - 50deg.C 1Hr each 12.0V, 100%output, 50cycles
Thermal shock	-20deg.C - 70deg.C, 0.5Hrs each 50cycles
Vibration	3G, 30~200Hz, 0.5Hrs,xyz-axis
Impact test	50G,xyz-axis

#### 5. Structures

##### 5.1 Dimensions

Reference to drawing P.7

##### 5.2 Interface specification

##### Input connector CN1:53261-0510(molex)

Pin No.	Symbol	Comment
1	Vin	DC7~17V
2	GND	
3	CFL ON/OFF	ON: "L"Vol<0.8V,Iol=2mA OFF:"open"
4	Vra	LOWER potential
5	Vrb	UPPER potential

##### Output connector CN2:IL-G-4P-S3L2-SA(JAE)

Pin No.	Symbol
1	Lo
2	--
3	--
4	Hi

## 6.Structures and Dimensions

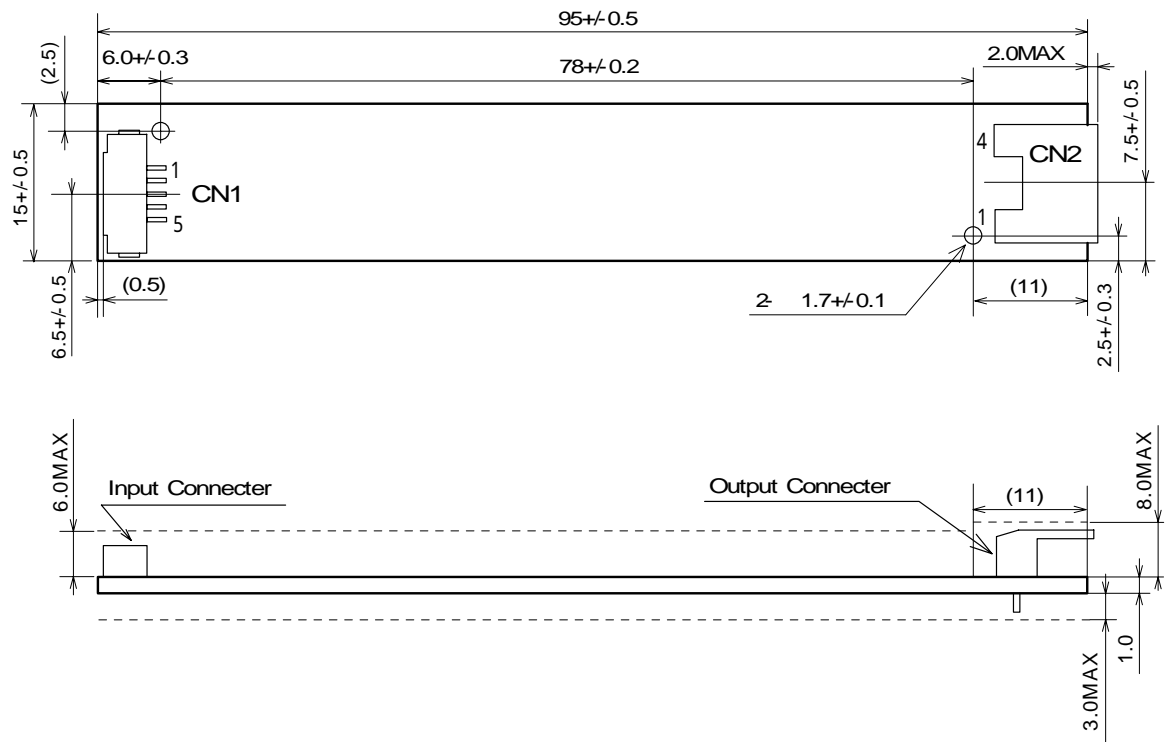


Fig.3 Dimensional Outline

.Date code : ex "31E7"

## 7. Precautions in Design

7.1 Please turn off the power supply of the inverter before the output connector (CN2) is put in or put off. Because the voltage of the output connector is very high.

7.2 The high-voltage wiring of lamps may affect the characteristics of this product even in the presence of a slight stray capacity of 1 to few pF. So, please check whatever the below points have fully considered.

(1) Please use UL1330 equivalents as inverter output leads and keep length within 150mm.

(2) Please keep the length of wiring as short as possible and at the same time avoid binding high-voltage leads together and fitting high-voltage leads near the shield.

(3) Consider the electric potential of the parts adjacent to a wire because it greatly affects the electric characteristics and startup characteristics.

7.3 In the case of putting in and putting off the connector (CN1), please switch off the power supply of the inverter. If the power supply is operating, it will be possible that the inverter breaks down.

7.4 Please pay attention in using the inverter. Because the transformer in the inverter is weak to impact.

7.5 If it was exposed to thermal shock (out of order), it may have a crack itself.

7.6 Please do not give it any changes, such as reworking it, applying and hardening with adhesives, molding with resin, fixing with tape.

7.7 Please make a tight connection of the output and input connector. (If the inverter's connector contact was imperfect, the components of the inverter have high temperature and break down.)



7.8 Pay attention as printed circuit board is bent, and not adding excessive pressure when printed circuit board is built in. (Deterioration and the damage of component are caused, and movements of inverter are out of order.)