

General Safety Instructions:

READ SAFETY INSTRUCTIONS

Servicing:

These products are not customer serviceable. TDK-Lambda UK LTD. and their authorised agents only are permitted to carry out repairs.

Critical Components:

These products are not authorised for use as critical components in nuclear control systems, life support systems or equipment for use in hazardous environments without the express written approval of the Managing Director of TDK-Lambda EMEA.

Product Usage:

These products are designed for use within a host equipment which restricts access to authorised competent personnel.

Environmental:

These products are IPX0, and therefore chemicals/solvents, cleaning agents and other liquids must not be used.

Environment:

This power supply is a switch mode power supply for use in applications within a Pollution Degree 2, overvoltage category II environment. Material Group IIIb PCB's are used within it.

Output Loading:

The output power taken from the power supply must not exceed the rating stated on the power supply label, except as stated in the product limitations in this handbook.

Input Parameters:

This product must be operated within the input parameters stated in the product limitations in this handbook.

End of Life Disposal:

The unit contains components that require special disposal. Make sure that the unit is properly disposed of at the end of its service life and in accordance with local regulations.



RISK OF ELECTRIC SHOCK

High Voltage Warning:

Dangerous voltages are present within the power supply. The professional installer must protect service personnel from inadvertent contact with these dangerous voltages in the end equipment.

WARNING: When installed in a Class 1 end equipment, this product must be reliably earthed and professionally installed.

When installed in a Class II end equipment, no earthing connection to the power supply is required.

CAUTION: DOUBLE POLE/NEUTRAL FUSING

The (+) or (-) output(s) can be earthed or left floating.

The unit cover(s)/chassis must not be made user accessible.

Approval Limitations: Use in North America (AC units only)

When this product is used on 180-250 VAC mains with no neutral, connect the two live wires to L (live) and N (neutral) terminals on the input connector. In this instance double pole fusing is required.

The mains input connector is not acceptable for use as field wiring terminals.

For encased products, do not use mounting screws, which penetrate the unit more than 4.5mm.

Internal fuses protect the unit and must not be replaced by the user. In case of internal defect, the unit must be returned to TDK-Lambda UK LTD or one of their authorised agents.

WARNING: These products are Class 1 and must therefore be reliably earthed and professionally installed in accordance with the prevailing electrical wiring regulations and the safety standards covered herein.

A suitable mechanical, electrical and fire enclosure must be provided by the end use equipment for mechanical, electric shock and fire hazard protection.

The ventilation openings on these products must not be impeded. Ensure that there is at least 50mm spacing between any obstruction and the ventilation openings.

The unit cover/chassis is designed to protect skilled personnel from hazards. They must not be used as part of the external covers of any equipment where they may be accessible to operators, since under full load conditions, part or parts of the unit chassis may reach temperatures in excess of those considered safe for operator access.

Allgemeine Sicherheitsvorschriften:

LESEN SIE DIE SICHERHEITSVORSCHRIFTEN

Wartung:

Diese Produkte können nicht durch den Kunden gewartet werden. Nur TDK-Lambda UK LTD. und deren zugelassene Vertriebshändler sind zur Durchführung von Reparaturen berechtigt.

Kritische Komponenten:

Diese Produkte sind nicht für die Verwendung als kritische Komponenten in nuklearen Kontrollsystemen, Lebenserhaltungssystemen oder Geräten in gefährlichen Umgebungen geeignet, sofern dies nicht ausdrücklich und in Schriftform durch den Geschäftsführer von TDK-Lambda EMEA genehmigt wurde.

Produktverwendung:

Diese Produkte sind zur Verwendung innerhalb von Host-Anlagen gedacht, die einen auf das Fachpersonal beschränkten Zugang haben.

Umwelt:

Diese Produkte sind IPX0, aus diesem Grund dürfen keine Chemikalien/Lösungsmittel, Reinigungsmittel und andere Flüssigkeiten verwendet werden.

Umgebung:

Dieses Netzteil ist ein Schaltnetzteil zur Verwendung in einer Umgebung mit einem Verschmutzungsgrad 2, Überspannungskategorie II. Materialgruppe IIIb mit darin verwendeten PCBs.

Ausgangsstrom:

Der Ausgangsstrom des Netzteiles darf die Leistung, die auf dem Label des Netzteiles vermerkt ist, nur dann überschreiten, wenn dies in den Produktgrenzen dieses Handbuches ausgezeichnet ist.

Eingangsparameter:

Dieses Produkt muss innerhalb der Eingangsparameter, die in den Produktgrenzen dieses Handbuches angegeben sind, betrieben werden.

Entsorgung am Ende der Betriebszeit:

Das Gerät enthält Komponenten die unter Sondermüll fallen. Das Gerät muss am Ende der Betriebszeit ordnungsgemäß und in Übereinstimmung mit den regionalen Bestimmungen entsorgt werden.



GEFAHR DURCH ELEKTRISCHEN SCHLAG

Hochspannungswarnung:

Innerhalb des Netzteiles gibt es gefährliche Spannungen. Der Elektroinstallateur muss das Wartungspersonal vor versehentlichem Kontakt mit den gefährlichen Spannungen im Endgerät schützen.

WARNUNG! Falls Sie unser Netzgerät in eine Anwendung mit Schutzklasse 1 eingebaut haben, stellen Sie sicher, dass es fachgerecht installiert und zuverlässig geerdet ist.

Bei Einbau in eine Anwendung mit Schutzklasse 2 ist keine Erdung zum Netzgerät erforderlich.

ACHTUNG: ZWEIPOLIGE/NEUTRALE SICHERUNG

Die (+) oder (-) Ausgänge können geerdet werden oder unangeschlossen bleiben.

Die Abdeckung des Gerätes/das Gehäuse darf für den Benutzer nicht zugänglich sein.

Genehmigungsgrenzen: Verwendung in Nordamerika (nur AC-Geräte)

Wenn dieses Produkt an eine 180-250 VAC Hauptleitung ohne Nullleiter angeschlossen wird, müssen die beiden stromführenden Leitungen an die Anschlüsse L (stromführend) und N (Nullleiter) in der Eingangsverbindung angeschlossen werden. In diesem Fall ist eine zweipolige Sicherung erforderlich.

Der Haupteingangsanschluss ist nicht für die Verwendung als Feldverdrahtungsanschluss geeignet.

Verwenden Sie keine Befestigungsschrauben, die mehr als 4.5mm in das Gerät eindringen.

Eine interne Sicherung schützt das Gerät und darf durch den Benutzer nicht ausgetauscht werden. Im Fall von internen Defekten muss das Gerät an TDK-Lambda UK LTD oder einen der autorisierten Vertriebshändler zurückgeschickt werden.

Ein geeignetes mechanisches, elektrisches und brandgeschütztes Gehäuse muss als Schutz vor der Gefahr von mechanischen Risiken, Stromschlägen und Brandschutz in dem Endgerät vorgesehen werden.

Die Belüftungsöffnungen an diesem Produkt dürfen nicht blockiert werden. Achten Sie darauf, dass mindestens 50 mm Abstand zwischen Hindernissen und den Belüftungsöffnungen bleibt.

Die Geräteabdeckung/das Gehäuse ist so entworfen, dass das Fachpersonal vor Gefahren geschützt wird. Sie dürfen nicht als Teil der externen Abdeckung für Geräte verwendet werden, die für den Betreiber zugänglich sein müssen, da Teile oder das gesamte Gerätegehäuse unter voller Auslastung übermäßige Temperaturen erreichen kann, die für den Zugang des Betreibers nicht mehr als sicher betrachtet werden.

Consignes générales de sécurité:

LIRE LES CONSIGNES DE SECURITE

Entretien:

Ces produits ne peuvent pas être réparés par l'utilisateur. Seuls, TDK-Lambda UK LTD et ses agents agréés sont autorisés à effectuer des réparations.

Composants critiques:

Ces produits ne doivent pas être utilisés en tant que composants critiques dans des systèmes de commande nucléaire, dans des systèmes de sauvetage ou dans des équipements utilisés dans des environnements dangereux, sans l'autorisation écrite expresse du directeur général de TDK-Lambda EMEA.

Utilisation du produit:

Ces produits sont conçus pour être utilisés dans un équipement hôte dont l'accès n'est autorisé qu'aux personnes compétentes.

Environnement:

Ces produits sont IPX0, et donc on ne doit pas utiliser des produits chimiques/solvants, des produits de nettoyage et d'autres liquides.

Environnement fonctionnel :

Cette alimentation fonctionne en mode commutation pour utilisation dans des applications fonctionnant dans un environnement avec Degré de Pollution 2 et catégorie de surtension II. Elle utilise des cartes des circuits imprimés (PCB) de Groupe IIIb.

Intensité soutirée:

L'intensité soutirée de l'alimentation ne doit pas dépasser l'intensité nominale marquée sur la plaque signalétique, sauf indications contraires dans les limitations du produit décrit dans ce manuel.

Paramètres d'entrée:

Ce produit doit être utilisé à l'intérieur des paramètres d'entrée indiqués dans les limitations du produit dans ce manuel.

Elimination en fin de vie:

L'alimentation contient des composants nécessitant des dispositions spéciales pour leur élimination. Vérifiez que cette alimentation est mise au rebut correctement en fin de vie utile et conformément aux réglementations locales en vigueur.



RISQUE DE CHOC ELECTRIQUE

Attention-Danger haute tension:

Des tensions dangereuses sont présentes dans l'alimentation. L'installateur doit protéger le personnel d'entretien contre un contact involontaire avec ces tensions dangereuses dans l'équipement final.

AVERTISSEMENT: Si ce produit est installé dans un équipement final de classe I, il doit être mis à la terre de manière fiable et installé par un professionnel averti.

S'il est installé dans un équipement final de classe II, il n'est pas nécessaire de raccorder l'alimentation à la terre.

ATTENTION: FUSIBLE BIPOLAIRE/NEUTRE

Les sorties (+) ou (-) peuvent être raccordées à la terre ou laissées flottantes.

Le couvercle/châssis de l'alimentation ne doit pas être accessible à l'utilisateur.

Limitations approuvées : Utilisation en Amérique du Nord (alimentations AC seulement)

Si ce produit est utilisé sur une alimentation principale 180-250 VAC sans neutre, raccordez les deux fils de phase aux bornes L (phase) et N (neutre) sur le connecteur d'entrée. Dans ce cas, un fusible bipolaire est nécessaire.

Le connecteur d'entrée d'alimentation principale ne doit pas être utilisé comme borne de raccordement.

N'utilisez pas de vis pénétrant dans le module sur une profondeur supérieure à 4.5 mm.

Un fusible interne protège le module et ne doit pas être remplacé par l'utilisateur. En cas de défaut interne, le module doit être renvoyé à TDK-Lambda UK LTD ou l'un de ses agents agréés.

Une enceinte appropriée doit être prévue par l'utilisateur final pour assurer la protection contre les chocs mécaniques, les chocs électriques et l'incendie.

Les orifices de ventilation sur ces produits ne doivent pas être obstrués. Vérifiez qu'il y a un espace libre d'au moins 50 mm entre une obstruction et les orifices de ventilation.

Le couvercle et le châssis du module sont conçus pour protéger des personnels expérimentés. Ils ne doivent pas être utilisés comme couvercles extérieurs d'un équipement, accessible aux opérateurs car en condition de puissance maximum, des parties du châssis peuvent atteindre des températures considérées comme dangereuses pour l'opérateur.

Norme generali di sicurezza:

SI PREGA DI LEGGERE LE NORME DI SICUREZZA

Manutenzione:

Il cliente non può eseguire alcuna manutenzione su questi prodotti. L'esecuzione delle eventuali riparazioni è consentita solo a TDK-Lambda UK LTD e ai suoi agenti autorizzati.

Componenti critici:

Non si autorizza l'uso di questi prodotti come componenti critici all'interno di sistemi di controllo nucleari, sistemi necessari alla sopravvivenza o apparecchiature destinate all'impiego in ambienti pericolosi, senza l'esplicita approvazione scritta dell'Amministratore Delegato di TDK-Lambda EMEA.

Uso dei prodotti:

Questi prodotti sono progettati per l'uso all'interno di un'apparecchiatura ospite che limiti l'accesso al solo personale competente e autorizzato.

Condizioni ambientali:

Questi prodotti sono classificati come IPX0, dunque non devono essere utilizzati sostanze chimiche/solventi, prodotti per la pulizia o liquidi di altra natura.

Ambiente:

Questo prodotto è un alimentatore a commutazione, destinato all'uso in applicazioni rientranti in ambienti con le seguenti caratteristiche: Livello inquinamento 2, Categoria sovratensione II. Questo prodotto contiene schede di circuiti stampati in materiali di Gruppo IIIb.

Carico in uscita:

La potenza in uscita ottenuta dall'alimentatore non deve superare la potenza nominale indicata sulla targhetta dell'alimentatore, fatto salvo dove indicato nei limiti per il prodotto specificati in questo manuale.

Parametri di alimentazione:

Questo prodotto deve essere utilizzato entro i parametri di alimentazione indicati nei limiti per il prodotto, specificati in questo manuale.

Smaltimento:

L'unità contiene componenti che richiedono procedure speciali di smaltimento. Accertarsi che l'unità venga smaltita in modo corretto al termine della vita utile e nel rispetto delle normative locali.



RISCHIO DI SCOSSA ELETTRICA

Avvertimento di alta tensione:

All'interno dell'alimentatore sono presenti tensioni pericolose. Gli installatori professionali devono proteggere il personale di manutenzione dal rischio di contatto accidentale con queste tensioni pericolose all'interno dell'apparecchiatura finale.

ATTENZIONE: Se installato in un'attrezzatura di classe I, questo prodotto deve essere collegato a terra in modo affidabile ed installato in modo professionale.

Se installato in un'attrezzatura di classe II, non è necessario alcun collegamento a terra.

ATTENZIONE: PROTEZIONE CON FUSIBILE BIPOLARE/NEUTRO

Le uscite (+) o (-) possono essere messa a terra o lasciate isolate.

I coperchi/il telaio dell'unità non devono essere accessibili da parte dell'utente.

Limiti di approvazione: Uso in America Settentrionale (solo per le unità a CA)

Se il prodotto è utilizzato su reti a 180 - 250 VCA senza neutro, collegare i due fili sotto tensione ai terminali L (sotto tensione) e N (neutro) sul connettore di alimentazione. In tal caso è necessaria protezione con un fusibile bipolare.

Il connettore dell'alimentazione principale non può essere utilizzato come terminale di collegamento di campo.

Non utilizzare viti che penetrano nell'unità per più di 4.5 mm.

Un fusibile interno protegge l'unità e non deve essere sostituito dall'utente. Nell'eventualità di un difetto interno, restituire l'unità a TDK-Lambda UK LTD o a uno dei suoi agenti autorizzati.

L'apparecchiatura finale deve includere una recinzione meccanica, elettrica e antincendio per proteggere dai pericoli di natura meccanica, dalle scosse elettriche e dai pericoli di incendio.

Le griglie di ventilazione su questi prodotti non devono essere ostruite. Verificare che vi sia una distanza minima di 50 mm fra le griglie di ventilazione e qualsiasi eventuale ostruzione.

Il coperchio/telaio dell'unità è realizzato per proteggere il personale esperto dai pericoli. Non deve essere usato come parte degli involucri esterni di qualsiasi apparecchiatura, se risulta accessibile da parte degli addetti, poiché è possibile che in condizioni di pieno carico una o più parti del telaio dell'unità giunga/giungano a temperature superiori ai limiti considerati sicuri per l'accesso da parte degli addetti.

Instrucciones generales de seguridad:

LEA LAS INSTRUCCIONES DE SEGURIDAD

Servicio:

Estos productos no pueden ser reparados por los clientes. TDK-Lambda UK LTD. y sus agentes autorizados son los únicos que pueden llevar a cabo las reparaciones.

Componentes fundamentales:

Estos productos no pueden ser utilizados como componentes fundamentales en sistemas de control nuclear, sistemas de soporte vital o equipos a utilizar en entornos peligrosos sin el consentimiento expreso por escrito del Director General de TDK-Lambda EMEA.

Uso de los productos:

Estos productos han sido diseñados para ser utilizados en un equipo central que restrinja el acceso al personal cualificado autorizado.

Medioambiental:

Estos productos son IPX0 y, por tanto, no pueden utilizarse sustancias químicas/disolventes, agentes de limpieza ni otros líquidos.

Medio ambiente:

Esta fuente de alimentación es una fuente de alimentación de modo conmutado a utilizar en aplicaciones dentro de un entorno con un Grado de contaminación 2 y una Categoría de sobretensión II. En él se utilizan policloruros de bifenilo del Grupo de materiales IIIb.

Carga de salida:

La potencia de salida tomada de la fuente de alimentación no puede sobrepasar el valor nominal indicado en la etiqueta de la fuente de alimentación, excepto en los casos indicados en las limitaciones del producto en este manual.

Parámetros de entrada:

Este producto debe ser utilizado dentro de los parámetros de entrada indicados en las limitaciones del producto en este manual.

Desecho de la unidad:

La unidad contiene componentes que deben ser desechados de una manera especial. Asegúrese de desechar correctamente la unidad al final de su vida útil y conforme a las normas locales vigentes.



PELIGRO DE DESCARGAS ELÉCTRICAS

Advertencia de alta tensión:

En esta fuente de alimentación hay tensiones peligrosas. El instalador profesional debe proteger al personal de servicio contra cualquier contacto accidental con estas tensiones peligrosas en el equipo final.

ADVERTENCIA: La instalación de este producto en un equipo de clase I la deben llevar a cabo profesionales y el producto debe estar conectado a tierra.

Para instalar este producto en un equipo de clase II no es necesario que la alimentación esté conectada a tierra.

PRECAUCIÓN: PROTECCIÓN POR FUSIBLES BIPOLAR/NEUTRA

La salida o salidas (+) o (-) pueden conectarse a tierra o se las puede dejar flotando.

Debe impedirse el acceso de los usuarios a la cubierta o cubiertas y al chasis de la unidad.

Limitaciones a las aprobaciones: de uso sólo en EE. UU. (sólo unidades de CA)

Cuando este producto se utilice en una red de 180-250 V CA sin un punto neutro, conecte los dos cables activos a los bornes L (activo) y N (neutro) del conector de entrada. En este caso se necesita una protección por fusibles bipolar.

El conector de entrada de la red no es apto para ser utilizado a modo de bornes de cableado de campo.

No utilice tornillos de montaje susceptibles de penetrar en la unidad más de 4.5 mm.

Un fusible interno protege la unidad y este no debe ser nunca reemplazado por el usuario. En caso de existir algún defecto interno, la unidad debe ser enviada a TDK-Lambda UK LTD o a uno de sus agentes autorizados.

El equipo de uso final debe constituir un recinto de protección mecánica, eléctrica y contra incendios de protección mecánica, contra descargas eléctricas y contra el peligro de incendios.

Las aberturas de ventilación de estos productos no deben obstruirse jamás. Asegúrese de que quede una separación de 50 mm por lo menos entre cualquier obstrucción y las aberturas de ventilación.

La cubierta/chasis de la unidad ha sido diseñada para que proteja a las personas cualificadas de los peligros. No deben ser utilizadas como parte de las cubiertas externas de cualquier equipo al que pueden acceder los operarios, ya que bajo unas condiciones de carga completa, la pieza o piezas del chasis de la unidad pueden alcanzar temperaturas superiores a las consideradas seguras para el acceso de los operarios.

Instruções gerais de segurança:

LEIA AS INSTRUÇÕES DE SEGURANÇA

Manutenção:

Estes produtos não podem ser submetidos a manutenção por parte do cliente. Apenas a TDK-Lambda UK LTD e os seus agentes autorizados têm permissão para realizar reparações.

Componentes essenciais:

Não é autorizada a utilização destes produtos como componentes essenciais de sistemas de controlo nuclear, sistemas de suporte de vida ou equipamento para utilização em ambientes perigosos sem a expressa autorização por escrito do Director-Geral da TDK-Lambda EMEA.

Utilização do produto:

Estes produtos foram concebidos para utilização dentro de um equipamento de alojamento que apenas permita o acesso a pessoal qualificado autorizado.

Ambiental:

Estes produtos são IPX0 e, como tal, não se devem utilizar químicos/solventes, agentes de limpeza e outros líquidos.

Ambiente:

Esta fonte de alimentação é uma fonte de alimentação do modo de comutação para utilização em aplicações com um Nível de Poluição 2 e ambientes da categoria de sobretensão II. São utilizadas placas de circuitos impressos do grupo de materiais IIIb.

Carga de saída:

A potência de saída extraída da fonte de alimentação não deve exceder a classificação assinalada na etiqueta da fonte de alimentação, excepto quando indicado nas limitações do produto neste guia.

Parâmetros de entrada:

Este produto deve ser utilizado dentro dos parâmetros de entrada indicados nas limitações do produto neste guia.

Eliminação no fim de vida:

A unidade contém componentes que necessitam de procedimentos especiais de eliminação. Certifique-se de que a unidade é devidamente eliminada no fim da sua vida útil e que tal é feito em conformidade com os regulamentos locais.



RISCO DE CHOQUE ELÉCTRICO

Aviso de alta tensão:

Estão presentes tensões perigosas dentro da fonte de alimentação. O profissional que realizar a instalação deve proteger o pessoal de assistência contra contactos inadvertidos com estas tensões perigosas do equipamento final.

AVISO: Quando instalado num equipamento de Classe I, este produto deve ser ligado à terra de forma fiável e instalado por um profissional.

Quando instalado num equipamento de Classe II, não é necessário que a fonte de alimentação tenha ligação à terra.

CUIDADO: LIGAÇÃO DE FUSÍVEIS DE DOIS PÓLOS/NEUTRA

As saídas (+) e (-) podem ser ligadas à terra ou deixadas soltas.

O chassis/cobertura(s) da unidade não deve estar acessível ao utilizador.

Limitações da aprovação: Utilização na América do Norte (apenas unidades de corrente alternada)

Quando este produto é utilizado em fontes de alimentação 180-250 VAC sem ligação neutra, ligue os dois cabos sob tensão aos terminais L (tensão) e N (neutro) do conector de entrada. Neste caso é necessário uma ligação de fusíveis de dois pólos.

O conector de entrada de alimentação não deve ser utilizado como terminal de cablagens no local.

Não utilize parafusos de montagem, uma vez que estes penetrarão na unidade em mais do que 4.5 mm.

Existe um fusível interno que protege a unidade e que não deve ser substituído pelo utilizador. Em caso de defeito interno, a unidade deve ser devolvida à TDK-Lambda UK LTD ou a um dos seus agentes autorizados.

AVISO: Estes produtos pertencem à Classe 1, devendo assim ser ligados à terra de forma fiável e instalado por profissionais, de acordo com os regulamentos locais vigentes em relação a cablagens eléctricas e as normas de segurança aqui mencionadas.

O equipamento de utilização final deve fornecer um bastidor com protecção mecânica, eléctrica e contra incêndios adequada.

As aberturas de ventilação destes produtos não devem ser obstruídas. Certifique-se de que existe um espaçamento de pelo menos 50 mm entre qualquer obstrução e as aberturas de ventilação.

O chassis/cobertura da unidade está concebido de forma a proteger o pessoal especializado de perigos. Não devem ser utilizados como parte das coberturas externas de qualquer equipamento em que possam estar acessíveis aos operadores, uma vez que em condições de carga máxima, algumas peças do chassis da unidade podem atingir temperaturas superiores às consideradas seguras para o acesso do operador.

Special Instructions for medical applications

IEC/EN 60601-1 2nd Edition
 UL 60601-1 1st Edition
 CSA-C22.2 No. 601.1-M90
 IEC/EN 60601-1 3rd Edition
 ANSI/AAMI ES 60601-1
 CSA 22.2 No 60601-1

- These products are designed for continuous operation within an overall enclosure, and must be mounted such that access to the mains terminals is restricted. See the appropriate standard listed above.
- For Class II installation, these products need to be fixed such that they are isolated from unearthed accessible conductive parts by at least 2 MOPP's.
- These products are NOT suitable for use in the presence of flammable anaesthetic mixtures with air or with oxygen, or with nitrous oxide.
- For IEC/EN 60601-1 2nd Edition, UL 60601-1 1st Edition, CSA-C22.2 No. 601.1-M90, these products have a reinforced insulation barrier between input and output.
- For IEC/EN 60601-1 3rd Edition, ANSI/AAMI ES 60601-1, CSA 22.2 No 60601-1, these products provide reinforced insulation between input and outputs of 2 MOPPs. 1 MOOP from input to earth and 1 MOPP from output to earth.
- These products are suitable for B and BF type medical equipment.
- These products are NOT protected against the ingress of water.
- All outputs have basic spacings to earth rated for mains at 250Vac, and due consideration must be given to this in the end product design.
- These products have SELV outputs.
- Reference should be made to local regulations concerning the disposal of these products at the end of their useful life.
- Where any part of this product is made accessible to the operator in the end use equipment, the operator must not touch this part and the patient at the same time.
- These products have not been assessed to IEC/EN60601-1-2 (EMC) but EMC test data is available from TDK-Lambda UK Ltd.

WARNING: No modification of this product is allowed.

Environmental Specifications:

Description	Operation	Storage & Transportation
Use	Indoor	-
Temperature	0°C - +70°C (See O/P tables for deratings)	-40°C - +85°C
Humidity	5 - 95% RH, non-condensing	5 - 95% RH, non-condensing
Altitude	-200m - 5000m*	-200m - 5000m
Pressure	54kPa - 106kPa	54kPa - 106kPa
Orientation	The unit may be mounted on either side, vertical with input lowest and horizontal. (Customer Air versions can be mounted in any orientation).	All
Material Group	IIIb	
Pollution Degree	2	
Overvoltage Category	II	
Class	I or II (depending on model)	
Weight	1 Kg max	
IP Rating	IPX0	

* 3000m for 60601-1

* 4000m for 60601-1 for model X50018A

Level of Insulation:

Dielectric Strength type testing is carried out as follows:
 Primary mains circuit to earth: 2.515 to 2.525kVDC

Primary mains circuits to secondary: 5.66kVDC*
 Secondary circuits to earth: 2.515 to 2.525kVDC

*Important Note: This test is not possible with Y capacitors fitted to the unit as damage to these capacitors may occur.

Routine Dielectric Strength testing is carried out as follows: Primary mains circuit to Secondary circuits and earth – 2.515kVdc to 2.615kVdc. Secondary circuits to earth 2.25kVdc to 2.35kVdc

Safety Approvals:

UL60950-1 and CSA22.2 No.60950-1 - UL Recognised. C-UL for Canada.

IEC / EN60950-1 - CE mark.

IEC/EN60950-1 and IEC/EN60601-1 - CB Report and Certificate.

CE marking when applied to any NVM175 or NVM175D product, indicates compliance with the Low Voltage Directive (2006/95/EC) in that it complies with EN60950-1, and with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

UL/CSA 60601-1 - UL + C -UL approval

Fusing: Internal fuses (F1): dual fuses in the L and N line (except single fuse in the L line for the –FL option), T3.15AH, 250V, 5x20mm.

Symbols:



AC



EARTH

N – Neutral

L – Live



Caution: See instructions for use



Warning: Dangerous Voltage

Unit Nomenclature

NVM175 or NVM-175 models as described below:

Units may be marked with a Product Code: X5x or NVM1x where x may be any number of characters.

Unit Configuration Code (Description): may be prefixed by NS # followed by / or - (where # may be any number of characters indicating non- safety related model differences).

Unit Configuration Code:

NVMxy-abcdefghijklm

Where:

x	=	1 for 175 or 1D (1D for Double insulated or Class II unit)
y	=	Blank for Y2 capacitors from output to earth (except 1D models) P for Y1 capacitors from output to earth (except 1D models)
a	=	Number of Outputs: 1.
b	=	Channel 1 Output Voltage where: T is for 12V, F is for 15V and G is for 24V.
c	=	O (for omit).
d	=	O (for omit).
e	=	O (for omit).
f	=	Standby supply: Blank for no standby and no remote on/off (enable) or '-' followed by S for 12V version with power good, logic level high enables main output. S1 for 12V version with power good, logic level low enables main output. S2 for 12V version with Channel 1 good, logic level high enables main output.

S3 for 12V version with Channel 1 good, logic level low enables main output.
 S4 for 12V 0.8A version with power good, logic level low enables main output.
 S5 for 5V 0.5A version with power good, logic level low enables main output.
 S6 for 5V 0.5A version with power good, logic level high enables main output.
 0 for no standby and no remote on/off (enable).

g = Blank for Open Frame or “-“ followed by U for U chassis, C for U chassis with cover, K for custom chassis with cover and IEC inlet

h = Blank for standard upright output connector or “-“ followed by R for the right angle output connector. S for the screw terminal output.

i = Blank for standard leakage or ”-“ followed by L for low leakage. Zx for custom leakage which is less than standard leakage and x is a number between 1 and 9 for different custom leakage current options.

jkl = Blank for standard output setting or '- ' followed by three numbers from 0 to 9 which denotes various output voltages and currents within the specified range of channel 1 output for a particular unit.

m = Blank for dual fuse input or -FL for single fuse input in the Live line

Input Parameters

Parameter	60601-1	60950-1
Nominal input voltage	100 - 240 Vac	100 - 240 Vac
Input voltage range	90 - 264Vac	90 - 264Vac
Input frequency range	45 - 63Hz	45 - 440Hz
Maximum input current	3A rms	3A rms

All ratings apply for ambient temperatures up to 50°C. From 50 to 70°C the total output power and current ratings are both derated at 2.5% per deg C.

Output Parameters

There are three NVM175 standard models with various options, and non-standard models with output parameters shown in the tables below.

Output channel	Voltage designation	Vout (V) nom.	Adjustment range (V)	Output current (A)	Maximum power (W)
Channel 1	T	12	12 - 15.5	15	180
	F	15	12 - 15.5	15	180
	G	24	24 - 28.5	7.5	180
Standby output	S	12	Fixed	0.2	2.4
	S1	12	Fixed	0.2	2.4
	S2	12	Fixed	0.2	2.4
	S3	12	Fixed	0.2	2.4
	S4	12	12 - 13	0.8	10.4
	S5	5	Fixed	0.5	2.5
	S6	5	Fixed	0.5	2.5

Variations and limitations of use:

1. NVM175 PSUs can output 180W from channel 1 plus 10.4W maximum from the standby output.
2. Component temperatures must be monitored in the end use application as described in the “Cooling For Unit” section.
3. All ratings apply for ambient temperatures up to 50°C. From 50 to 70°C the total output power and current ratings are both derated at 2.5% per deg C.
4. NVM1D product has 18 way connector. Maximum storage is 65°C.

Non-Standard Models:

Non- Standard model: X50001# (# can be any letter), (modified NVM1-1T000-S1-K-R-L)					
Output Channel	Voltage designation	Vout	Adjustment Range (V)	Output Current (A)	Maximum Power (W)
CH1	T	12	12 - 15.5	11.67A	140
Standby	S1	12	Fixed	0.2A	2.4

Additional Variations and limitations of use for Non-Standard model X50001#

1. Ratings apply for ambient temperatures up to 60°C. From 60 to 65°C the total output power and current ratings are both derated at 2.5% per deg C.
2. Component temperatures must be monitored in the end use application as described in the “Cooling For Unit” section.

Output Limitations

All outputs are SELV.

Seriesing of outputs is not allowed.

Adjusting output voltage beyond the stated range may cause overvoltage protection (OVP) to operate, whereby the output will latch off. To reset for normal operation simply adjust the potentiometer to reduce the output voltage to within its range and cycle the input off then on. Potentiometers should be adjusted using Bourns tool H91.

Connection details**Input Connections:**

Molex 3 pin header 7A/250V MAX.

Cooling for unit

The following method must be used for determining the safe operation of PSUs.

The components listed in the following table must not exceed the temperatures given. To determine the component temperatures the heating tests must be conducted in accordance with the requirements of the standard in question. Consideration should also be give to the requirements of other safety standards.

Test requirements include: PSU to be fitted in its end-use equipment and operated under the most adverse conditions permitted in the end-use equipment handbook/specification and which will result in the highest temperatures in the PSU. To determine the most adverse conditions consideration should be given to the end use equipment maximum operating ambient, the PSU loading and input voltage, ventilation, end use equipment orientation, the position of doors & covers, etc. Temperatures should be monitored using type K fine wire thermocouples (secured with cyanoacrylate adhesive or similar) placed on the hottest part of the component (out of any direct airflow) and the equipment should be run until all temperatures have stabilised.

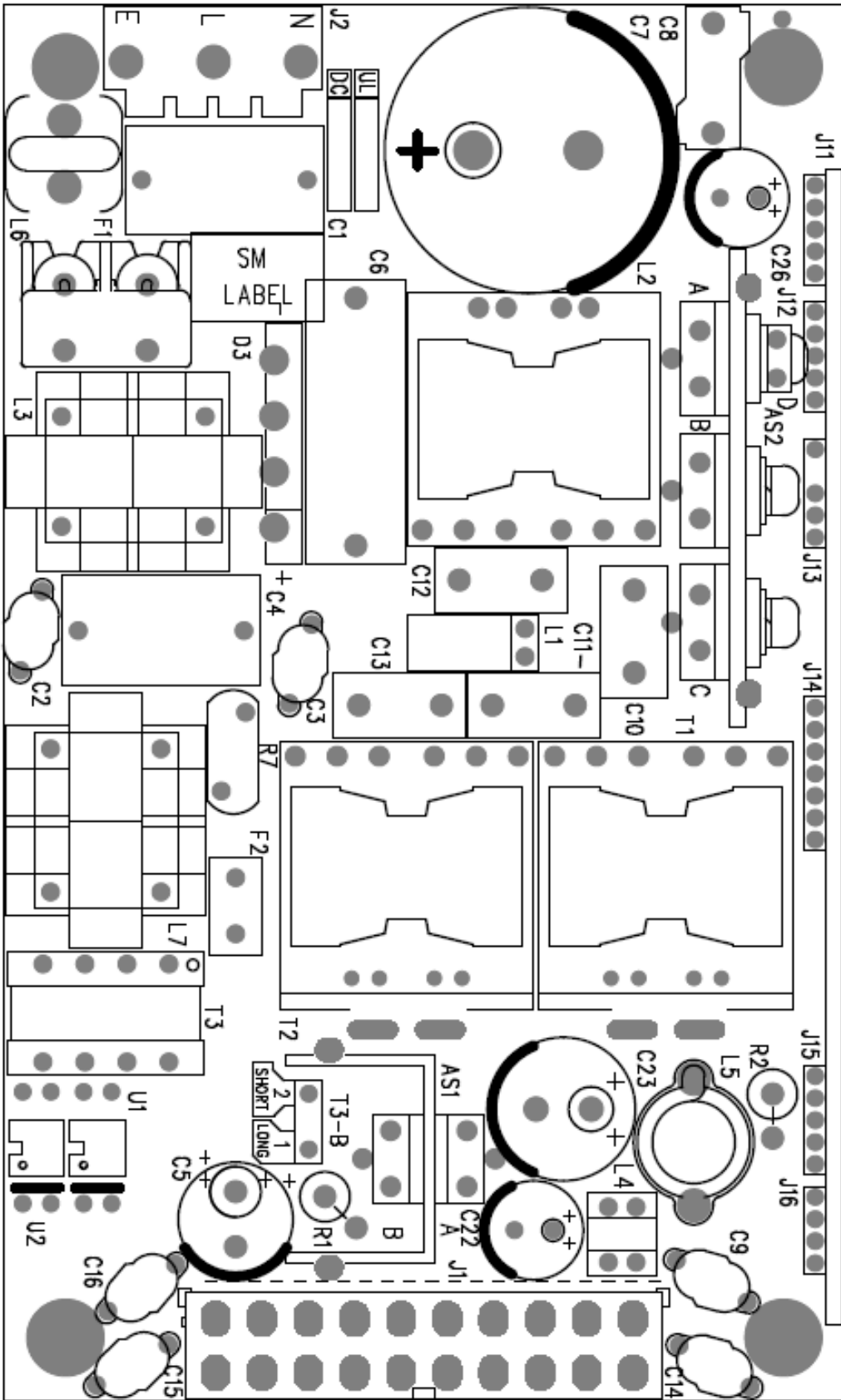
Cooling for unit temperature table:

Circuit Ref.	Description	Max. Temperature (°C)
L3, L7	Common mode choke winding	115 (155)
C1, C4	X capacitors	100
C6	Capacitor	105
C12	Resonant capacitor	105
T3	Aux trx windings	130
L2	Boost choke winding	120 (155)
C7	Electrolytic capacitor	70 (105)
T1, T2	Transformer winding	130
L1	Primary choke (24V channel 1 only)	140
XU3, XU4, XU106	Opto-couplers on control board	100
U1, U2	Opto-couplers on base board	100
L5	Channel 1 output choke	125 (140)
L4	Standby output choke	85
J2	Input connector	105
J1	Output connector	105
Various	All other electrolytic capacitors	90 (105)

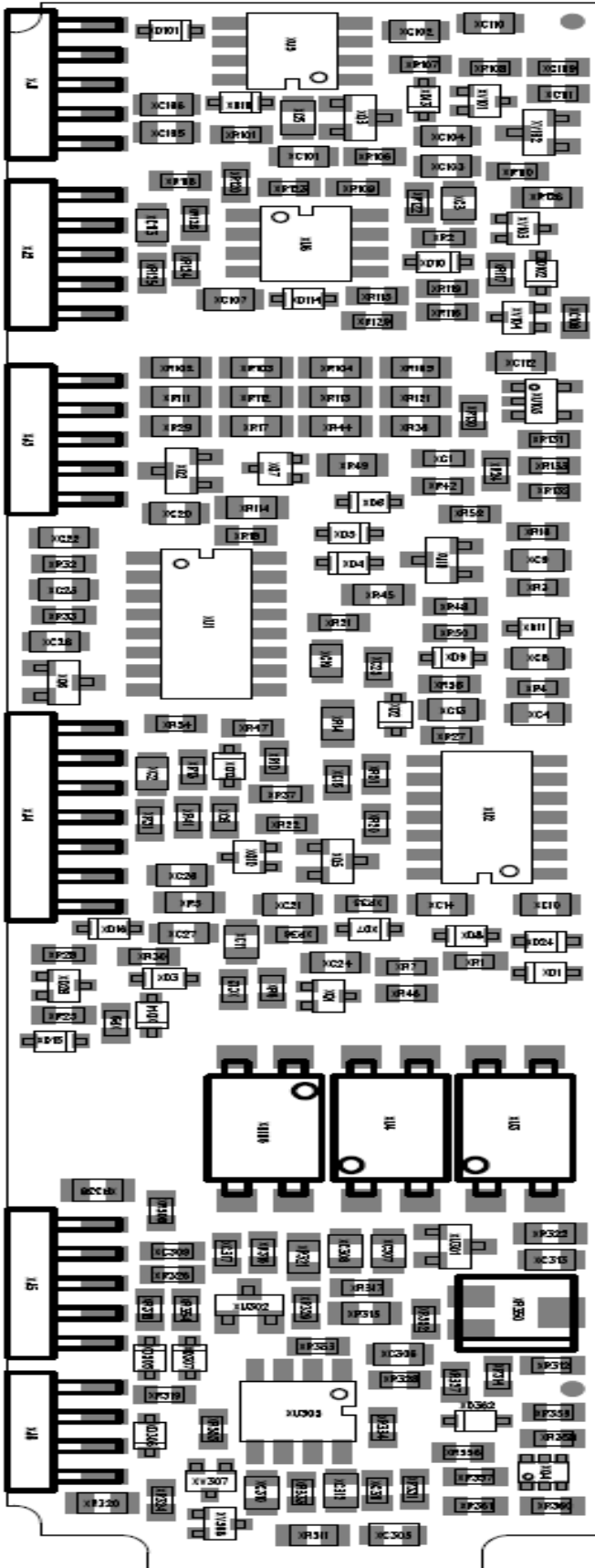
Higher temperature limits (in brackets) may be used but product life may be reduced.

COMPONENTS TO BE MONITORED DIAGRAMS:

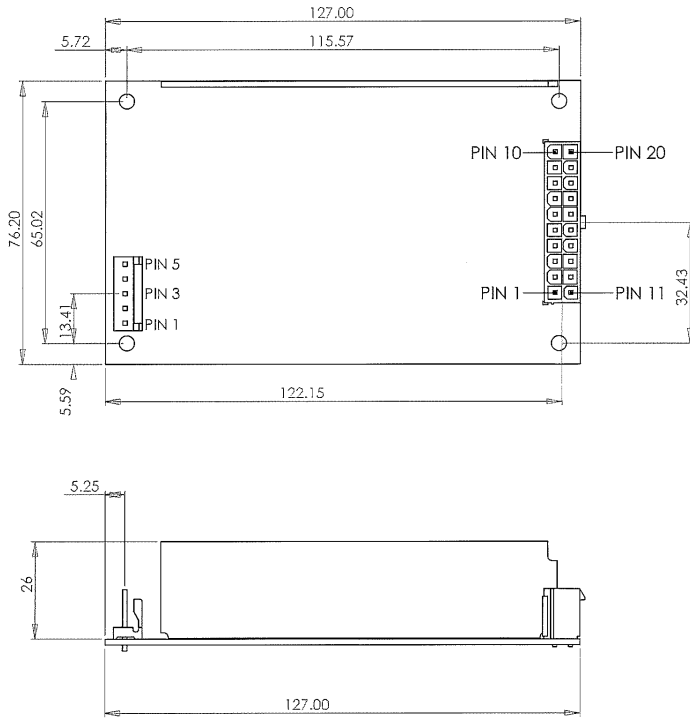
Main PCB



Control PCB

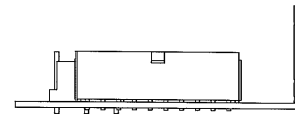


NVM175 Vertical Connector Outline And Connections

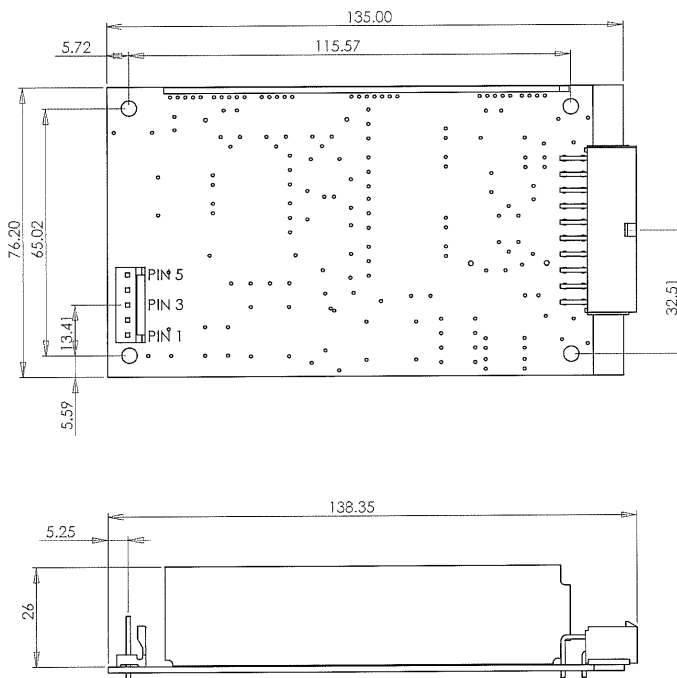


OUTPUT CONNECTOR J1			
PIN	FUNCTION	PIN	FUNCTION
10	STANDBY OUTPUT	20	STANDBY RETURN
9	POWER GOOD*	19	REMOTE ON/OFF
8	CH1 OUTPUT	18	CH1 GOOD*
7	CH1 OUTPUT	17	CH1 OUTPUT
6	CH1 OUTPUT	16	CH1 OUTPUT
5	+SENSE CH1	15	-SENSE CH1
4	0V (DC RETURN)	14	0V (DC RETURN)
3	0V (DC RETURN)	13	0V (DC RETURN)
2	NC	12	0V (DC RETURN)
1	NC	11	NC

*S# OPTION DEPENDANT

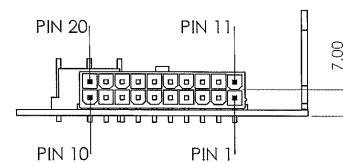


NVM175 Right Angle Connector Outline And Connections

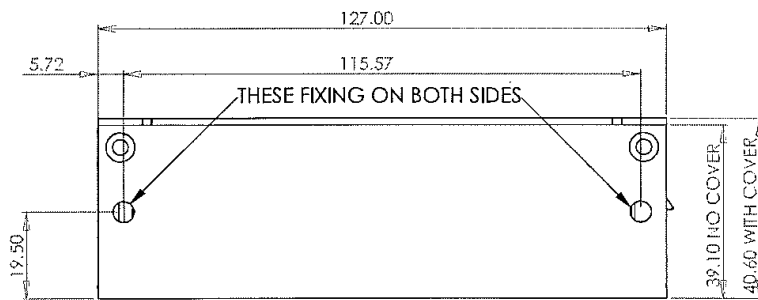
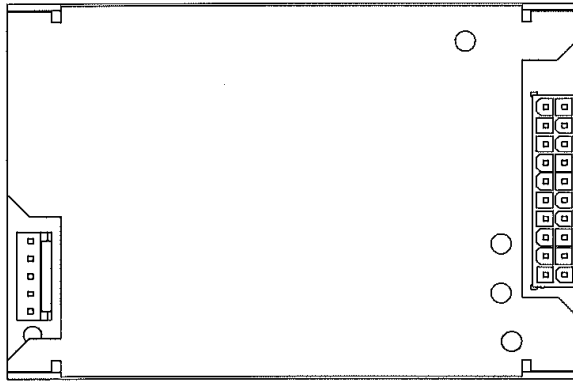


OUTPUT CONNECTOR J1			
PIN	FUNCTION	PIN	FUNCTION
10	NC	20	NC
9	0V (DC RETURN)	19	NC
8	0V (DC RETURN)	18	0V (DC RETURN)
7	0V (DC RETURN)	17	0V (DC RETURN)
6	- SENSE	16	+ SENSE
5	CH1 OUTPUT	15	CH1 OUTPUT
4	CH1 OUTPUT	14	CH1 OUTPUT
3	CH1 GOOD*	13	CH1 OUTPUT
2	REMOTE ON/OFF	12	POWER GOOD*
1	STANDBY RETURN	11	STANDBY OUTPUT

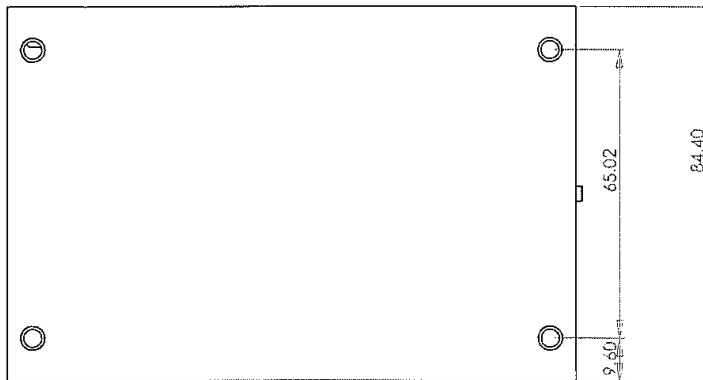
*S# OPTION DEPENDANT



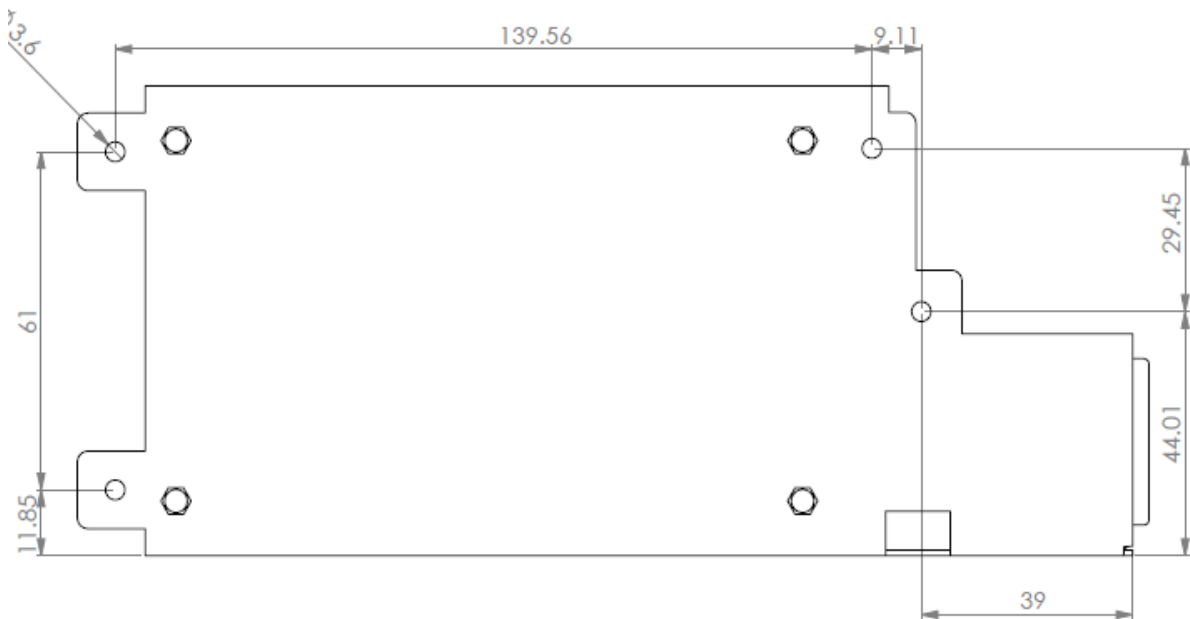
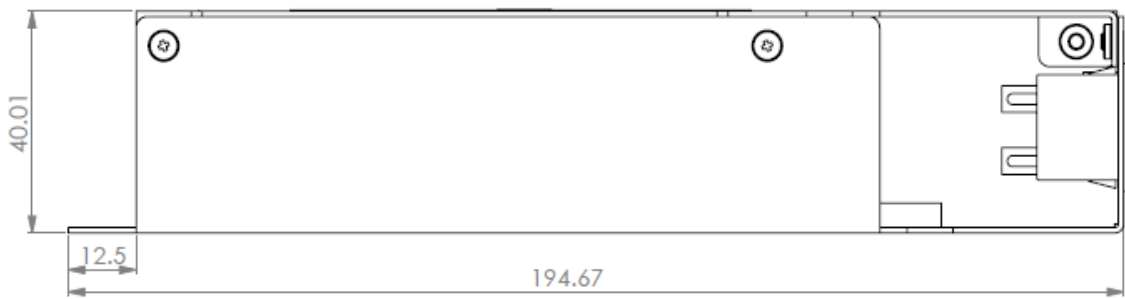
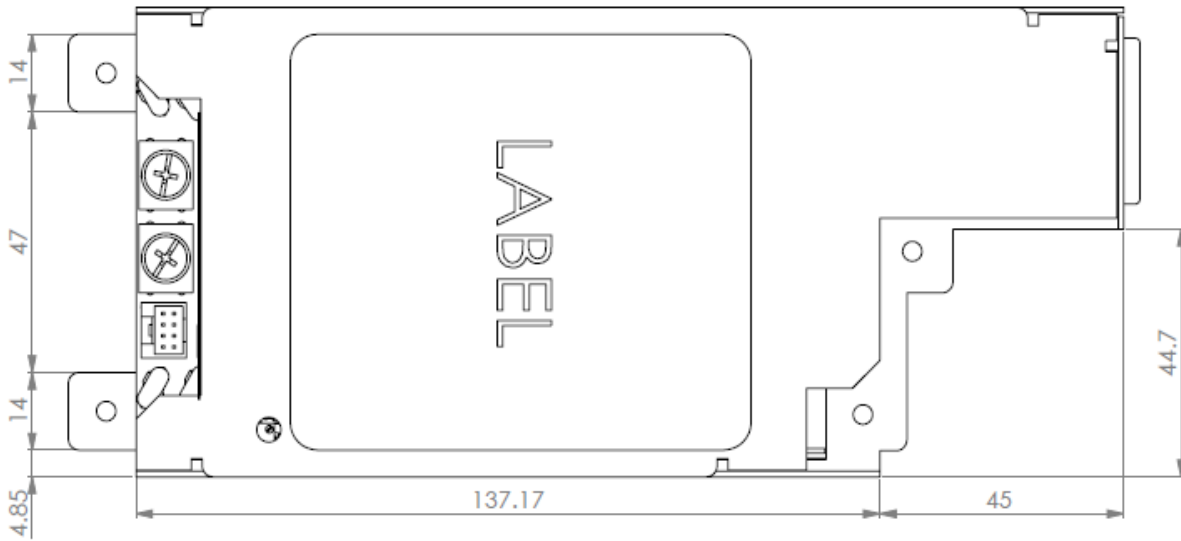
NVM175 Vertical Connector With Optional Case And Cover (-C Option)



- NOTES
- 1 ALL CUSTOMER FIXINGS M3
 - MAXIMUM PENETRATION 4.5mm
 - MAXIMUM TORQUE 0.5 – 0.6Nm
 - 2 ALL TOLERANCES +/-0.5mm

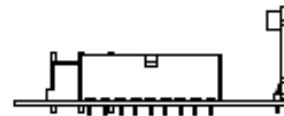
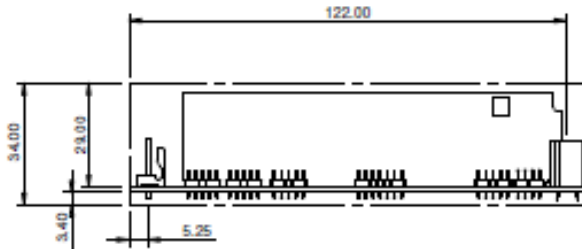
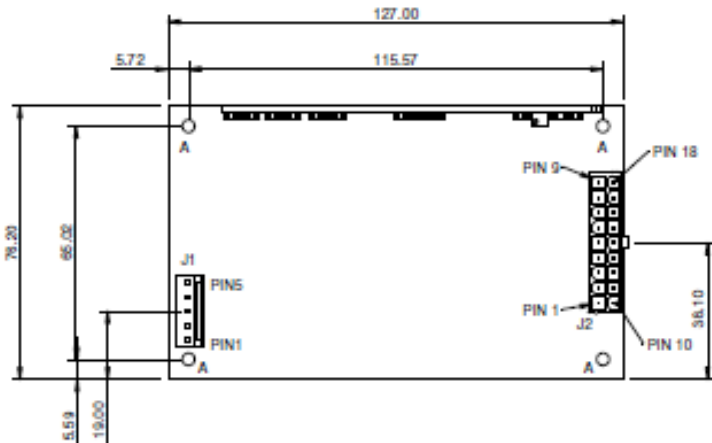


NVM175 -K Option chassis



- NOTE
1. ALL CUSTOMER FIXING LOCATIONS HAVE A $\varnothing 3.6\text{mm}$ THROUGH HOLE
 2. ALL TOLERANCES $\pm 0.5\text{mm}$

NMMD175 (with 18 way output connector which may be upright or right angled – only upright version shown).



J1	
PIN	CONNECTION
1	NOT CONNECTED
2	NOT CONNECTED
3	LIVE
4	NOT CONNECTED
5	NEUTRAL

J2			
PIN	CONNECTION	PIN	CONNECTION
9	STANDBY OUTPUT	18	STANDBY RETURN
8	POWER GOOD*	17	REMOTE ON/OFF
7	CH1 OUTPUT	16	CH1 GOOD*
6	CH1 OUTPUT	15	CH1 OUTPUT
5	CH1 OUTPUT	14	CH1 OUTPUT
4	+ SENSE CH1	13	- SENSE CH1
3	0V (DC RETURN)	12	0V (DC RETURN)
2	0V (DC RETURN)	11	0V (DC RETURN)
1	N/C	10	0V (DC RETURN)

*S# OPTION DEPENDANT

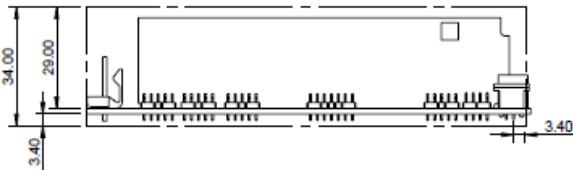
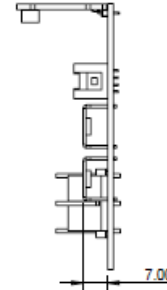
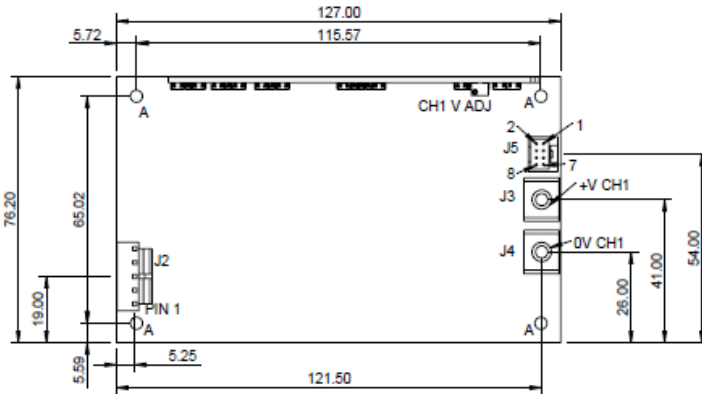
MATING PARTS

CONNECTOR	HOUSING	CRIMP PIN	MANUFACTURER
J1	09-50-8051	08-52-0113	MOLEX
J2	39-01-2185	44475-3112	MOLEX

NOTE:

A 4 OFF HOLES Ø3.5mm CLEARANCE FOR M3 FIXINGS.
ALL TOLERANCES +/-0.5mm.

NVM175 Screw Terminal (-S Option)



J2

PIN	CONNECTION
1	EARTH
2	NOT CONNECTED
3	LIVE
4	NOT CONNECTED
5	NEUTRAL

J5

PIN	CONNECTION	PIN	CONNECTION
1	-SENSE CH1	5	+SENSE CH1
2	STANDBY OUTPUT	6	CH1 GOOD*
3	POWER GOOD*	7	NOT CONNECTED
4	STANDBY RETURN	8	REMOTE ON/OFF

*S# OPTION DEPENDANT

MATING PARTS

CONNECTOR	HOUSING	CRIMP PIN	MANUFACTURER
J2	09-50-8051	08-52-0113	MOLEX
J3	N/A	TAG 19073-0185	MOLEX
J4	N/A	TAG 19073-0185	MOLEX
J5	PUDP-08V-S	SPUD-001T-P0.5	JST

NOTE:

A 4 OFF HOLES \varnothing 3.5mm CLEARANCE FOR M3 FIXINGS.
ALL TOLERANCES +/-0.5mm.

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