

Rodzaj opracowania:

PROJEKT WYKONAWCZY

Opracowanie branżowe:

PROJEKT MONITORINGU

Przedsięwzięcie:

Przebudowa układu drogowego Węzła Św. Maksymiliana wraz z budową tunelu drogowego pod Drogą Gdyńską, torami SKM i PKP w Gdyni

Zadanie:

Przebudowa ulic: Władysława IV, Piłsudskiego, Świętojańskiej oraz Drogi Gdyńskiej

Obiekt:

Tunel dla pieszych pod ul. Władysława IV i Świętojańską

Zlecniodawca / Inwestor:

**Gmina Miasta Gdyni
81-382 Gdynia Al. Marszałka Piłsudskiego 52/54**

Numer ewidencyjne działek:

Obręb:

Gmina Gdynia KM 58: 117, 120, 122, 123, 131, 132, 133, 146, 147

Gmina Gdynia KM 59: 21, 73, 74, 75

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Stanowisko	Imię, nazwisko, numer uprawnień	Podpis

Gdańsk, styczeń 2009 r.

Rozwiązania zawarte w niniejszym opracowaniu podlegają ochronie prawa autorskiego i mogą być powielane oraz udostępniane osobom trzecim jedynie na podstawie pisemnego zezwolenia w/w Biura z zastrzeżeniem wszelkich skutków prawnych.

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I. CZĘŚĆ OPISOWA

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3. OGÓLNA STRUKTURA SYSTEMU
4. KAMERY
5. ZESTAWIENIE URZĄDZEŃ

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II. CZĘŚĆ RYSUNKOWA

Spis rysunków

Lp.	Nazwa Rysunku	Skala
1.	SCHEMAT ROZMIESZCZENIA URZĄDZEŃ	1:200

1. Podstawy opracowania

- zlecenie inwestora
- podkłady architektoniczno- budowlane
- PN-EN 50132-7 Systemy alarmowe Systemy dozоровe CCTV stosowane w zabezpieczeniach. Wytyczne stosowania
- PN-EN 50132-5 Systemy alarmowe Systemy dozоровe CCTV stosowane w zabezpieczeniach. Teletransmisja
- Materiały Bosch Security Systems

2. Informacje ogólne o systemie

Zadaniem Systemu Telewizji Dozоровej jest zwiększenie poziomu bezpieczeństwa w projektowanym tunelu dla pieszych pod ul. Władysława IV i Świętojańską.

3. Ogólna struktura Systemu Telewizji Dozorowej – przesyłanie wizji

Sygnały video realizowane przewodem koncentrycznym z kamer zbiegać się będą w pomieszczeniu technicznym do nadajnika 8x video instalowanego w szafce wiszącej z zasilaczem. Kamery będą zasilane napięciem 24V za pomocą zasilaczy zewnętrznych zainstalowanych w pom. technicznym, następnie połączenie realizowane będzie traktem światłowodowym (oddzielne opracowanie) do odbiornika podłączonego w punkcie styku z istniejącą infrastrukturą światłowodową monitoringu wizyjnego Miasta Gdyni – punkt styku skrzyżowanie ulic Świętojańskiej i Marszałka Piłsudskiego.

Nadajnik w punkcie styku wykorzystuje jedno włókno światłowodowe wielomodowe do centrum nadzoru znajdującego się w Komendzie Miejskiej Policji przy ul. Portowej 15.

W centrum nadzoru należy zainstalować szafkę wraz z zasilaczem i odbiornikiem sygnału.

4. Kamery

System telewizji dozorowej w tunelu dla pieszych składać się będzie z 5 kamer kolorowych z przetwornikiem CCD 1/3" o wysokiej rozdzielczości 540 TVL przystosowanych do zasilania 24V w obudowach wandaloodpornych posiadających zintegrowany obiektyw zmiennoogniskowy 3,7-12mm, kamery posiadają funkcję automatycznego przełączania się w tryb czarno-biały podczas niedostatecznych warunków oświetleniowych pozwalającą na zwiększenie czułości.

5. Zestawienie urządzeń

L.p	Nazwa urządzenia	Producent	Symbol	Jedn	Ilość.
1.	Kopułowa kamera kolorowa FLEXIDOME	BOSCH	VDC-455V04-10S	szt.	5
2.	8-ch 10 bit video multiplexer	Optelecom-nkf	9152DT-LDL-ST	szt.	2
3.	8-ch 10 bit video demultiplexer	Optelecom-nkf	9152DR-LM-ST	szt.	2
4.	Zasilacz	Optelecom-nkf	9010 PS	szt.	4
5.	2-slot mini chassis	Optelecom-nkf	9003-02	szt.	4
6.	Zasilacz 24V		UPA-2450-50	szt.	2
7.	Przewód koncentryczny 75 Ohm.		RG6U	mb.	400
8.	Patchcord 1m		ST-ST	szt.	2
9.	Obudowa internetowa mała			szt.	1
10.	Klucz do obudowy ze specjalną końcówką			szt.	1
11.	Kłódka do obudowy			szt.	1

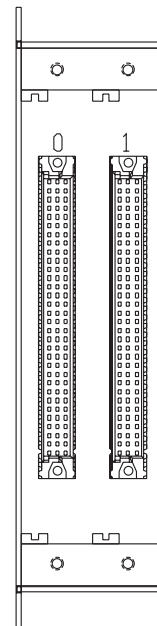


9000 Series Installation and Operation Manual

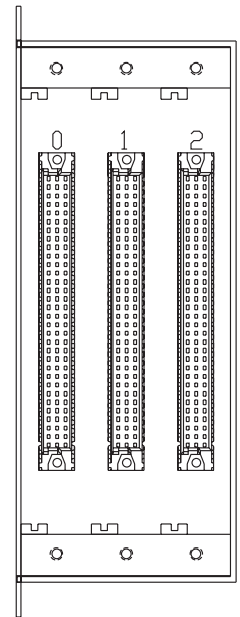
Model 9003-2
Model 9003-3
Model 9003-6

2-, 3-, and 6-Slot Mini Chassis

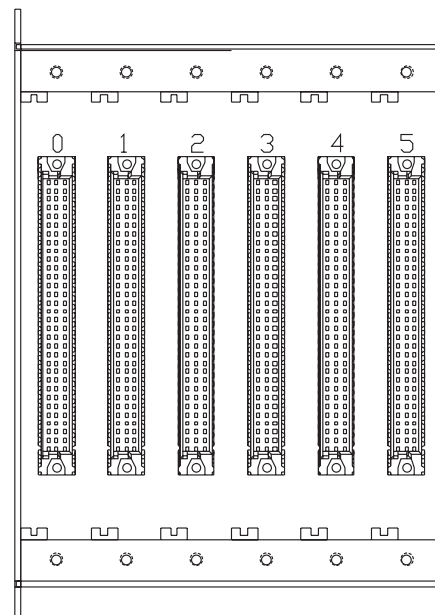
Small desktop or wall mount
chassis with 2-, 3- or 6-card slots
compatible with Optelecom-NKF
Series 9000 rack-mount cards



9003-2



9003-3



9003-6

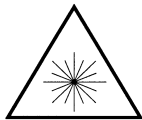
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Safety Instructions

SA-ONP

The safety information contained in this section, and on other pages of this manual, must be observed whenever this unit is operated, serviced, or repaired. Failure to comply with any precaution, warning, or instruction noted in the manual is in violation of the standards of design, manufacture, and intended use of the unit. Optelecom-NKF assumes no liability for the customer's failure to comply with any of these safety requirements.



LASER RADIATION
DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS (MAGNIFIERS).
CLASS 1M LASER PRODUCT

WARNING: Viewing the laser output with certain optical instruments (for example, eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard.

CAUTION:
DISCONNECTED OPTICAL CONNECTORS MAY EMIT OPTICAL ENERGY.
DO NOT VIEW BEAM WITH OPTICAL INSTRUMENTS (MAGNIFIERS).

This product may be electrically connected to devices that contain Class 1M lasers or LEDs.

- Class 1M laser product according to IEC60825-1:1993+A1+A2
- **CAUTION: Use of controls or adjustments or procedures other than those specified herein may result in hazardous radiation exposure.**
- Precautions should be taken to prevent exposure to optical radiation when the unit is removed from its enclosure or when the fiber is disconnected from the unit.
- Laser radiation may be present on a fiber connection to this unit even when the power has been removed from the unit.
- This unit is intended for installation in locations where only trained service personnel have access to the fiber connections.
- The locations of all optical connections are listed in the Connection Locations and Function section of this manual.
- Optical outputs and wavelengths are listed in the Specifications section of this manual.

The optical devices used in this equipment are Hazard Level 1M. As required by IEC60825-1, the installer is responsible for insuring that the label depicted below is present in the restricted locations where this equipment is installed.

Hazard Level 1M

The border shall be black and the background shall be yellow.

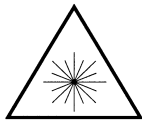


This assembly contains parts sensitive to damage by electrostatic discharge (ESD). Use ESD precautionary procedures when touching, removing, or inserting parts or assemblies.



The chassis into which this unit is installed must be housed in a properly rated NEMA enclosure.

Debe observarse la información de seguridad contenida en esta sección, y en otras páginas de este manual siempre que se opere, dé servicio o repare esta unidad. Si no se cumple con alguna precaución, advertencia o instrucción indicada en este manual se infringen los estándares de diseño, fabricación y el uso destinado a la unidad. Optelecom-NKF no asume ninguna responsabilidad si el cliente no cumple con alguno de estos requisitos de seguridad.



RADIACIÓN LÁSER
NO VER DIRECTAMENTE CON INSTRUMENTOS ÓPTICOS (DE AUMENTO)
PRODUCTO LÁSER CLASE 1M

¡PRECAUCIÓN! Mirar la salida del láser con ciertos instrumentos ópticos (ej., lentes, anteojos, lupas de aumento, microscopios, etc.) dentro de una distancia de 100mm podría ocasionar lesiones permanentes en los ojos.

PRECAUCIÓN:
LOS CONECTORES ÓPTICOS DESCONECTADOS PUEDEN EMITIR ENERGÍA ÓPTICA
NO VER EL HAZ CON INSTRUMENTOS ÓPTICOS (DE AUMENTO)

Este producto puede conectarse eléctricamente a dispositivos que contienen rayos láser o diodos emisores de luz Clase 1M.

- Producto láser Clase 1M conforme a la norma IEC60825-1:1993+A1+A2
- **PRECAUCIÓN:** *El uso de los controles o ajustes o procedimientos aparte de lo especificado aquí puede ocasionar exposición peligrosa a la radiación.*
- Deben tomarse precauciones para evitar la exposición a la radiación óptica cuando se saque la unidad de su alojamiento, o cuando se desconecte la fibra de la unidad.
- Puede haber radiación láser en una conexión de fibra a esta unidad aun cuando se haya eliminado la corriente de la unidad.
- Esta unidad está destinada a instalarse en ubicaciones donde sólo el personal de servicio competente tenga acceso a las conexiones de fibra.
- Las ubicaciones de todas las conexiones ópticas se enumeran en la sección Ubicaciones de las conexiones y funciones de este manual.
- Las salidas ópticas y longitudes de onda aparecen en la sección Especificaciones de este manual.

Los dispositivos ópticos usados en este equipo son de Nivel de Riesgo 1M. Según lo exige la norma IEC60825-1, el instalador es responsable de asegurar que la etiqueta descrita a continuación esté presente en las ubicaciones restringidas donde se instale este equipo.

Nivel de Riesgo 1M

El borde debe ser negro y
el fondo debe ser amarillo.

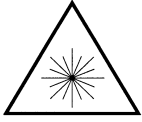


Este ensamblaje contiene piezas sensibles al daño por descargas electrostáticas (ESD, por sus siglas en inglés). Use procedimientos para prevenir las descargas electrostáticas al tocar, desmontar o insertar piezas o ensamblajes.



El chasis en el cual está instalada esta unidad debe estar dentro de un alojamiento debidamente calificado por NEMA.

Die in diesem abschnitt und auf anderen seiten dieses handbuchs enthaltenen sicherheitsinformationen müssen befolgt werden, wenn diese einheit betrieben, gewartet oder repariert wird. Falls vorsichtsmassnahmen, warnungen oder anweisungen in diesem handbuch nicht befolgt werden, verstösst dies gegen die konstruktions, und herstellungsstandards und erfolgt im gegensatz zum vorgesehenen verwendungszweck dieser einheit. Optelecom-NKF übernimmt keine haftung für das verabsäumnis des kunden, diese sicherheitsanforderungen einzuhalten.



LASER-STRAHLUNG
NICHT DIREKT MIT OPTISCHEN INSTRUMENTEN (LUPEN) ANSEHEN
LASER-PRODUKT DER KLASSE 1M

WARNUNG: Betrachtung des Laserlichtausgangs mit bestimmten optischen Instrumenten (zum Beispiel, Augenlupe-Vergrößerungsgläser und Mikroskope) innerhalb einer Entfernung von 100 mm kann eine Augengefahr darstellen.

VORSICHT:
ABGEKLEMMTE OPTISCHE STECKVERBINDER KÖNNEN OPTISCHE ENERGIE FREI SETZEN
NICHT MIT OPTISCHEN INSTRUMENTEN (LUPEN) IN DEN STRAHL BLICKEN.

Dieses Produkt kann elektrisch an Geräte angeschlossen sein, die Laser oder LEDs der Klasse 1M enthalten.

- Laserprodukt der Klasse 1M gemäß IEC60825-1:1993+A1+A2
- **VORSICHT: Wenn die Bedienungselemente anders als hier beschrieben bzw. andere Einstellungen verwendet werden, kann es zu schädlicher Strahlenaussetzung kommen.**
- Es müssen Vorsichtsmaßnahmen getroffen werden, um Aussetzung an optischer Strahlung zu vermeiden, wenn die Einheit aus dem Gehäuse genommen oder die Faseroptik von der Einheit getrennt wird.
- In einer Faseroptik-Verbindung dieser Einheit kann auch dann Laserstrahlung vorhanden sein, wenn die Stromversorgung zur Einheit abgeschaltet wurde.
- Diese Einheit ist zum Einbau an Orten vorgesehen, an denen nur geschultes Personal Zugang zu den Faseroptik-Verbindungen hat.
- Die Lage aller optischen Verbindungen ist im Abschnitt über die Lage von Anschlüssen und Funktionsweise dieses Handbuchs zu finden.
- Optische Ausgänge und Wellenlängen sind im Abschnitt mit den technischen Daten dieses Handbuchs zu finden.

Die optischen Vorrichtungen in diesem Gerät haben Gefahrenstufe 1M. Wie vorgeschrieben durch IEC60825-1 ist der Installateur dafür verantwortlich, sicherzustellen, dass die unten abgebildeten Schilder an den Orten mit eingeschränktem Zugang, an denen dieses Gerät aufgestellt ist, vorhanden sind.

Gefahrenstufe 1M

Schwarzer Rand und
gelber Hintergrund.

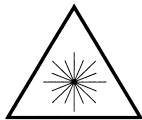


Diese Baugruppe enthält Teile, die durch elektrostatische Entladungen (ESD) beschädigt werden können. Vorsichtsmaßnahmen zum Schutz vor elektrostatischer Entladung treffen, wenn Teile oder Baugruppen berührt, ausgebaut oder eingefügt werden.



Das Gestell, in dem diese Einheit eingebaut ist, muss in einem entsprechend klassifizierten NEMA-Schutzgehäuse untergebracht sein.

Les consignes de sécurité contenues dans cette section et dans le reste de ce manuel doivent être respectées à chaque fois que cet appareil est utilisé ou fait l'objet d'une maintenance ou d'une réparation. Le non-respect d'une précaution, d'un avertissement ou d'une instruction figurant dans ce manuel est une violation des normes de conception, fabrication et indication d'usage de l'appareil. Optelecom-NKF n'est pas responsable du non-respect de ces consignes de sécurité par le client.



RAYONNEMENT LASER
NE PAS REGARDER DIRECTEMENT AVEC DES INSTRUMENTS OPTIQUES (LOUPES)
PRODUIT LASER DE CLASSE 1M

ATTENTION: Observer la sortie Laser avec certains instruments optiques (par exemple: une loupe, un agrandisseur, ou un microscope), d'une distance inférieure à 100 mm peut causer des dommages oculaires.

ATTENTION:
LES CONNECTEURS OPTIQUES DEBRANCHÉS PEUVENT ÉMETTRE UNE ÉNERGIE OPTIQUE.
NE PAS REGARDER LE FAISCEAU AVEC DES INSTRUMENTS OPTIQUES (LOUPES)

Ce produit pourra être branché par un câble électrique à des appareils qui contiennent des lasers de classe 1M ou des diodes électroluminescentes.

- Produit laser de classe 1M conformément à IEC60825-1:1993+A1+A2
- **ATTENTION: L'utilisation de commandes ou réglages, ou de procédures différentes de celles indiquées ici risque de provoquer une exposition dangereuse au rayonnement.**
- Prendre des précautions pour empêcher une exposition au rayonnement optique lorsque l'appareil est retiré de son boîtier ou lorsque le câble optique fibre est débranché de l'appareil.
- Un rayonnement laser pourra être présent dans un câble optique branché sur cet appareil, même une fois l'alimentation coupée.
- Cet appareil est prévu pour une installation à des endroits où seul un personnel de maintenance formé a accès aux câbles optiques.
- Les points de branchement de tous les câbles optiques sont indiqués à la section Points de branchement et fonction de ce manuel.

Les appareils optiques utilisés dans cet équipement correspondent à un niveau de danger 1M. Comme exigé par la norme IEC60825-1, il incombe à l'installateur de s'assurer que l'étiquette ci-dessous est présente aux endroits d'accès limité où cet équipement est installé.

Niveau de danger 1M

La bordure doit être noire et le fond jaune.



Cet ensemble contient des pièces sensibles aux décharges électrostatiques (ESD). Prendre les précautions relatives aux ESD avant de toucher, retirer ou insérer des pièces ou des ensembles.



Le châssis dans lequel est installé cet appareil doit être placé dans une enceinte NEMA conforme aux spécifications nominales.

Additional Chassis Safety Information



1. When all plug in modules and covers are installed, there are no accessible hazardous live parts. The 9003 chassis provides the enclosure required to prevent access to hazardous live parts, complying with all spacing requirements, and provides ample wiring space with a minimum flame rating of 94V-0.



2. The installation of this equipment must be done in accordance with all local and national electric codes and requirements.



3. The external power supply for this equipment must be located within three meters of an easily accessible AC socket-outlet.



4. Power supply cord considerations:
 - The power supply cord is not intended by the manufacturer to be attached to the building surface.
 - The power supply cord is not intended by the manufacturer to be run through walls, ceilings, floors, or similar openings in the building structure.
 - The power supply cord is constructed of Listed Flexible Cord, SJ or SO serviceable or better.
 - The power supply cord provided is the shortest length required for the intended installation to minimize the exposure to physical damage.

Fiber Information

This unit was manufactured with attention to fiber cleanliness by Optelecom-NKF. Beyond the optical safety information contained in this manual, the following guidelines should be observed when working with optical fibers.

The biggest problem is **dirt!**

It takes very little contamination to cause problems with optical fiber connections; cleanliness is extremely important to proper operation of optical equipment.

1. Protect optical connectors by leaving the connector covers in place on unused fiber connections and on the fiber tips themselves.
2. Personnel who remove and replace fibers should be equipped with a fiber cleaning kit. These are inexpensive and can be obtained from any fiber equipment supply house. If you choose to, you can use propanol and lint-free tissue to clean fibers.
 - a. Do not use isopropanol alcohol (typically called rubbing alcohol) mixed with water. This can cause additional spots. (**Caution: Pure isopropanol is very flammable!**)
 - b. Use lintless tissues to clean fibers.
 - c. Clean the fiber with a folded tissue moistened with the propanol, pulling the connector tip across the tissue, then turn the connector 90 degrees and repeat in a different spot on the tissue.
 - d. Don't pull the fiber across and then push it back. This will put the dirt that was cleaned off back on again.
 - e. Repeat the process on a dry, folded tissue.
3. When removing fibers, **always** clean them when replacing them no matter how long you had them off.
4. When connecting fibers, pay attention to the bend radius of the fibers. A general rule is to have a 3-inch (8 cm) bend radius. A bend radius less than 3 inches is an attenuator and can cause optical signal loss.
5. Installers of fiber equipment should be equipped with the equipment manuals and an optical power meter to measure the optical inputs and outputs in a system. An optical power meter is an inexpensive tool that can save much time and effort in getting optical communications links up and running. Properly equipped and trained installers can quickly determine the source of any problems that occur.

External Wiring Information

Cable assemblies with lengths external to the unit not exceeding 3.05 meters, coiled or uncoiled, may be constructed of jacketed appliance wiring material suitable for the maximum voltage current and temperature, rated VW-1 or FT-1 or better. Cable assemblies with lengths external to the unit not exceeding 3.05 meters, coiled or uncoiled, and supplied by a limited power source or NEC Class 2 source of supply as defined in the National Electric Code, ANSI/NFPA 70, may be constructed of materials rated VW-1 or FT-1 or better with no additional requirements.

Optical Output Power Information

Many of the I/O cards used in this chassis have optical emitters. The table below illustrates the wavelengths and maximum output power of the optical devices that may be present on installed I/O cards.

Note: Most I/O cards have a continuous optical output, however some low speed, data only I/O cards have outputs that are only active during data transmission. Some low speed transmitters switch the lasers off and on at the data rate. Lasers may be continuous wave or emit a pulse width. Pulses may be as short as 5 nanoseconds up to being continuous. Table 1 below provides information relating to the maximum power that can be output by these cards. For details on specific cards, refer to the manual for that card.

TABLE 1 — MAXIMUM OPTICAL EMITTER OUTPUTS		
Wavelength (nm)	Maximum Optical Output (dB)	Maximum Optical Output (mW)
850	−3	+0.5
1270	+1	+1.26
1290	+1	+1.26
1310	+1	+1.26
1330	+1	+1.26
1350	+1	+1.26
1370	+1	+1.26
1390	+1	+1.26
1410	+1	+1.26
1430	+1	+1.26
1450	+1	+1.26
1470	+1	+1.26
1490	+1	+1.26
1510	+1	+1.26
1530	+1	+1.26
1550	+1	+1.26
1570	+1	+1.26
1590	+1	+1.26
1610	+1	+1.26

Functional Description

The 9003 series of mini-chassis are designed to house all versions of Series 9000 rack-mount cards. The model numbers designate different card capacities. Table 1 below provides a model number and capacity guide. Series 9000 cards install in these mini-chassis in exactly the same manner as they do in the larger rack-mount 9002 and 9008 chassis. The units are approximately 4 RU high (7.1 inches) high and are designed to mount to a wall. The chassis rely on natural convection airflow via ventilation holes in the top and bottom of the chassis. Installing the chassis horizontally defeats this functionality and may reduce the operating temperature range of installed cards and/or reduce the MTBF due to increased card operating temperatures. If desktop placement is desired, an optional base is available to support the chassis. Refer to Table 1 below for the part numbers of the optional bases.

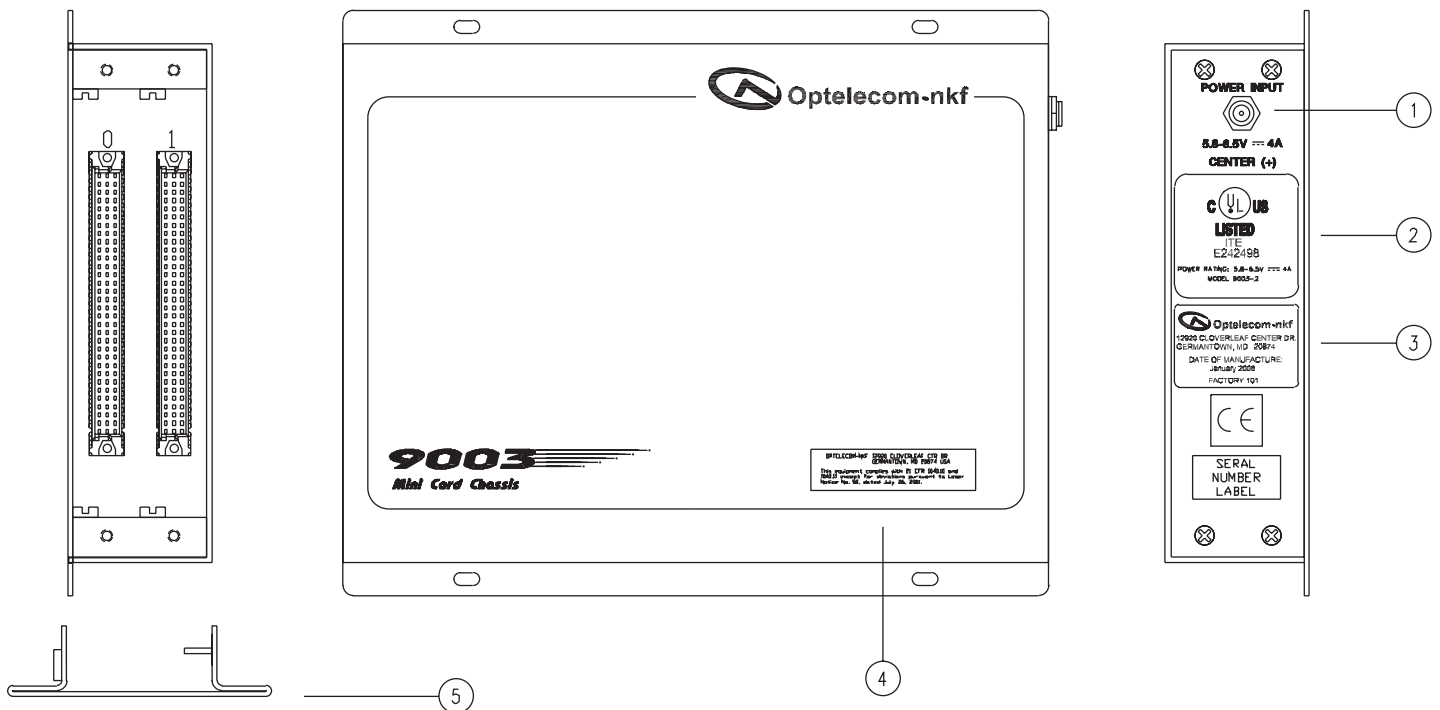


Note: It is important that the chassis be mounted vertically to assure adequate airflow for cooling. For placement on a desktop use the optional mounting base as indicated in the table below.

TABLE 1 — MODEL LISTING				
Chassis Model Number	Number of Cards Supported	Optional Horizontal Mounting Base P/N and Model Number		Recommended Power Supply
9003-2	2	24461-1	9997-2	9010 (to 4 Amps)
9003-3	3	24461-2	9997-3	9010 (to 4 Amps)
9003-6	6	24461-3	9997-6	9020 (to 9 Amps)

9003-2 Indicator and Connector Locations

FIGURE 1



1. POWER INPUT CONNECTOR

This circular power input connector provides the +6 VDC input from the 9010 power supply, available separately. The inside center post is positive (+) and the outer ring is negative (-).

2. UL LISTING LABEL LOCATION

3. MANUFACTURER'S INFORMATION LABEL LOCATION

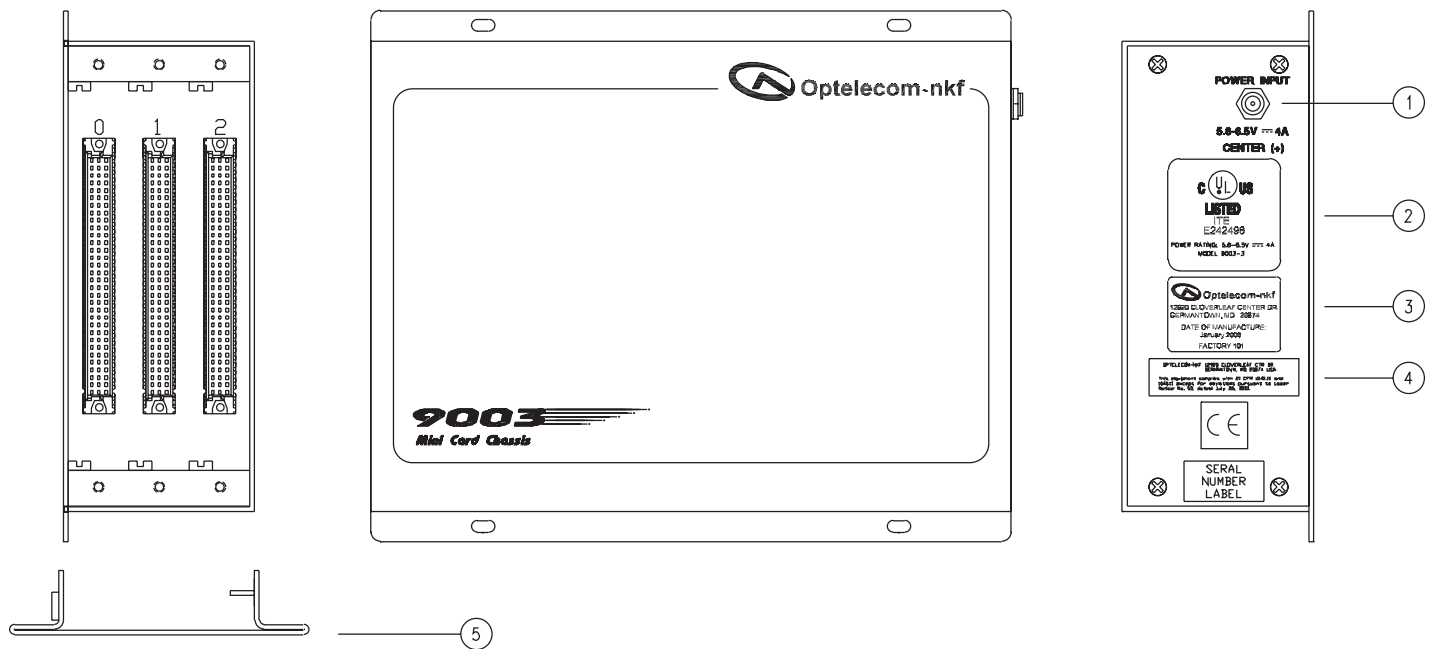
4. REGULATORY COMPLIANCE LABEL LOCATION

5. OPTIONAL 9997-2 HORIZONTAL MOUNTING BASE

This optional accessory provides a means of mounting the chassis on a desktop while maintaining the necessary ventilation.

9003-3 Indicator and Connector Locations

FIGURE 2



1. POWER INPUT CONNECTOR

This circular power input connector provides the +6 VDC input from the 9010 power supply, available separately. The inside center post is positive (+) and the outer ring is negative (-).

2. UL LISTING LABEL LOCATION

3. MANUFACTURER'S INFORMATION LABEL LOCATION

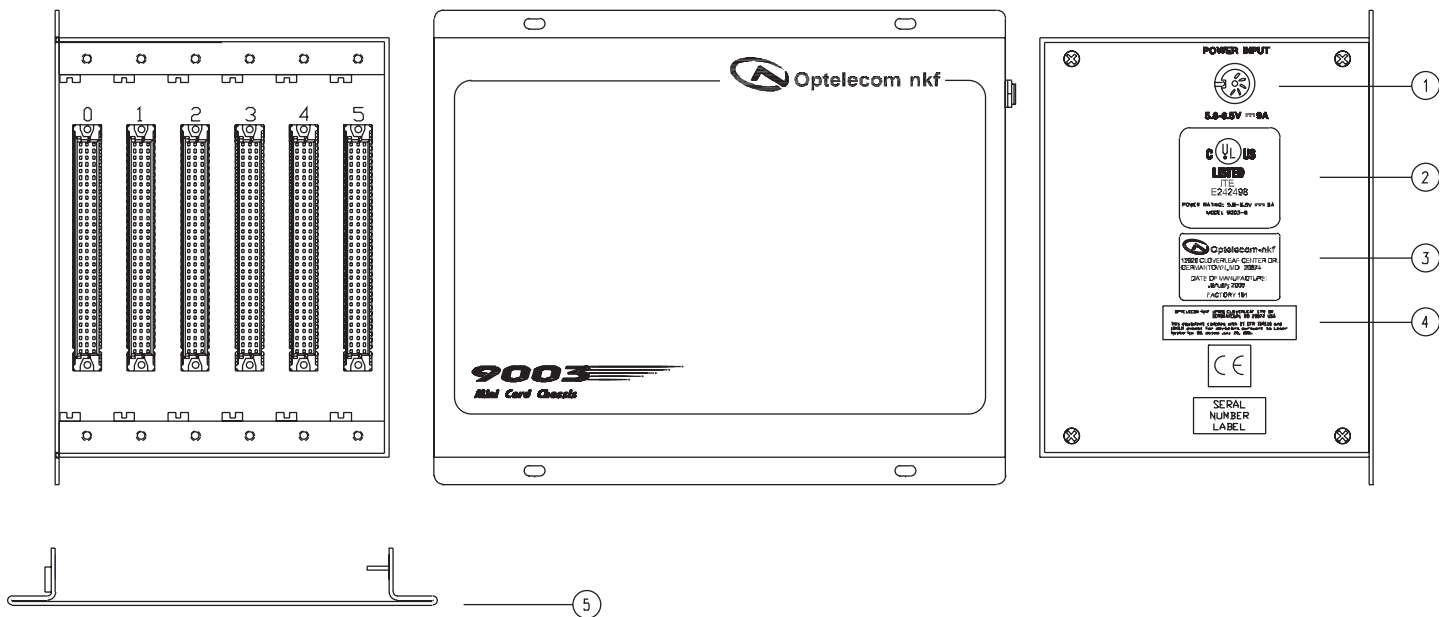
4. REGULATORY COMPLIANCE LABEL LOCATION

5. OPTIONAL 9997-3 HORIZONTAL MOUNTING BASE

This optional accessory provides a means of mounting the chassis on a desktop while maintaining the necessary ventilation.

9003-6 Indicator and Connector Locations

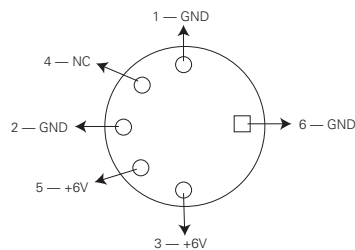
FIGURE 3



1. POWER INPUT CONNECTOR

This circular power input connector provides the +6 VDC input from the 9020 power supply, available separately. This is a 6VDC 6-pin DIN input connection.

FIGURE 4



2. UL LISTING LABEL LOCATION

3. MANUFACTURER'S INFORMATION LABEL LOCATION

4. REGULATORY COMPLIANCE LABEL LOCATION

5. OPTIONAL 9997-6 HORIZONTAL MOUNTING BASE

This optional accessory provides a means of mounting the chassis on a desktop while maintaining the necessary ventilation.

Installation Instructions

The 9003 chassis are designed to mount to a wall. The chassis rely on natural convection airflow via ventilation holes in the top and bottom of the chassis. Installing the chassis horizontally defeats this functionality and may reduce the operating temperature range of installed cards and/or reduce the MTBF due to increased card operating temperatures.

DESKTOP PLACEMENT

If placement on a desktop is desired, an optional base is available to support the chassis (refer to the table on page 1). This mounting base provides a means to hold the chassis vertically when the chassis is placed on a desktop and still allow air to flow thru the chassis for ventilation.

WALL PLACEMENT

To fasten the chassis to a wall use the 4 holes on the flanges. The holes are sized for #6 mounting hardware. The minimum mounting surface is 1/2-inch drywall. When mounting to a hollow surface such as drywall, use 4 # 6 expansion screws or hollow wall fasteners a minimum of 1 inch deep to insure proper support. The largest chassis, the 9003-6, may be required to support up to 6 lbs. of cards, plus the weight of the connection wires and fibers. Total weight load placed on the chassis should not exceed 20 lbs.



NOTE: The 9010 and 9020 power supplies (purchased separately) are desktop supplies, and should be positioned in a manner that does not put any stress on the power cord going to the chassis, or the power cord connecting to the mains.

INSTALLING THE I/O CARDS

The first step is to mount the chassis, taking into account the criteria discussed in the beginning of this section. Next, install the cards. For all versions of the 9003 chassis, the slot numbering begins on the left as you face the card side of the chassis. The cards will slide in right side up and a slight resistance will indicate the card connector has begun to engage. Push the cards in until the faceplate is against the chassis rails, and tighten the attachment screws on the face of each card hand tight. Make the additional wiring connections. All the I/O connections to the cards chassis have BNC, RJ style, or detachable connectors for the signal inputs and outputs. Remove the detachable connectors to make the necessary wiring connections and then reinstall the connectors on to the card.

Blank slots must be covered with 9996 or 9998 blank cover plates (available separately) to meet airflow, signal immunity, and fire enclosure safety design criteria.

After the installation procedures are complete, the chassis may be powered up and should be ready for operation.

MAINTENANCE DURING OPERATION

Removal of Cards

Follow the procedure below to change cards once the system has been installed, and is in operation.



If you have a system that cannot have power removed for maintenance, only properly trained personnel may eliminate steps 3 and 15 to hot swap the replacement card without endangering the system.

1. Insure that you are grounded and that you are taking the necessary steps to prevent electrostatic damage to the equipment.
2. If the chassis is equipped with an Network Management System card it may be a good idea to note any alarm parameters that may have been configured for the card to be replaced before shutting down the power to the chassis.
3. Insure that the power has been switched off and that the AC inlet cable to the power supply has been removed.
4. Remove the fiber(s) and/or electrical cables connected to the card to be replaced, tagging them as required for easy replacement later. Cover the fiber ends if you have fiber end covers.
5. Using a slotted screwdriver, loosen the top and bottom thumb screws from the card to be replaced. These are captive screws and cannot be removed completely from the card.
6. Using the captive screws, gently pull on the card with just enough force to break it free from the backplane connector.
7. Slide the card out along the card guides removing it from the chassis.
8. Place it in an antistatic bag or container.
9. Remove the replacement card from the antistatic bag.
10. Set any configuration switches (if the replacement card requires setting) either as the removed card was set, assuming the removed card worked at one time, or as described in the card's User Manual as required for your application.
11. Insert the card into the card guides where the old card was removed and slide it into the chassis.
12. A little stronger push when the card is within a quarter of an inch of being installed may be required to seat the card in the backplane connector.
13. Reinstall the thumbscrews at the top and bottom of the card.
14. Reconnect the electrical cable(s), clean and reconnect the fiber connector(s) to the card.
15. Reconnect the cable to the Power Supply.
16. If a Network Management card was installed in the chassis, reconfigure any alarm settings for the replacement card.

Operation of the 9003 Chassis with the Network Management System (NMS) Software

The 9003 chassis do not interact directly with any of the versions of the software. They only provide the signal paths for communications from the management card (optional, required for operation of the Network Management software) and the power busses for the cards from the power supply connector. All versions of chassis will appear in the software as 21-slot chassis, no matter how many slots they actually support.

Important Operational Note:

Chassis powered with external power supplies will have no parameters accessible via the Network Management System.

9003 Chassis Specifications

PHYSICAL¹

9003-2

Dimensions² (in inches)	7.1 H x 1.75 W x 8.58 D
(in centimeters)	18.03 H x 4.44 W x 21.74 D
Weight (in pounds)	1.1
(in kilograms)	0.499

9003-3

Dimensions² (in inches)	7.1 H x 2.50 W x 8.58 D
(in centimeters)	18.03 H x 6.35 W x 21.74 D
Weight (in pounds)	1.44
(in kilograms)	0.653

9003-6

Dimensions² (in inches)	7.1 H x 1.75 W x 8.58 D
(in centimeters)	18.03 H x 4.44 W x 21.74 D
Weight (in pounds)	2.06
(in kilograms)	0.934

¹ Does not include horizontal mounting bases

² Refer to the 9003 Chassis Dimension pages for detailed dimensions.

POWER REQUIREMENTS

The table below lists the power and temperature specifications for each of the chassis.

Chassis	Voltage	Current	Connector	Power Supply	PS Temp. Range
9003-2	6VDC	4 amps max.	Coaxial	9010 ³	0 to +45° C
9003-3	6VDC	4 amps max.	Coaxial	9010 ³	0 to +45° C
9003-6	6VDC	9 amps max.	6-pin DIN	9020 ⁴	0 to +25° C

³ Use Optelecom-NKF power supply part number 9010 or any Listed, Class 2 or Listed ITE having LPS outputs, desktop type with detachable power cord. Output rated 6VDC, min. 4.0 A. Power Supply must be suitably rated for minimum of 45° C.

⁴ Use Optelecom-NKF power supply part number 9020, GlobTek, P/N TR9CB10000N05-B.

POWER SUPPLIES

Optelecom-NKF offers power supplies for all products; the recommended supplies are selected to match normal operational conditions that are specified in individual data sheets. Special applications may require a different recommendation; in those instances, contact the factory for assistance.

IN-LINE MODULE SUPPLIES

These units are connected to standalone communication modules and the 9003 series Chassis. The 9010 and 9020 supplies plug directly into standard outlets, convert the AC voltage to DC, and connect to the communication module through wires that are terminated in a specific connector selected to match a specific module connector. In-line supplies will accept input power from a 110 to 240 VAC/50-60 Hz source and are equipped with a standard IEC power input cable that is selected to match the specific power source in the locality in which it is used.

AGENCY COMPLIANCES

UL 60950-1 UL Listed E242498, CE

Technical drawing of the Optelecom-nkf 9003 Mini Card Chassis. The drawing shows a rectangular chassis with dimensions: overall width 8.558, overall height 7.100, and internal dimensions of 6.700 and 6.290. The top edge has two mounting holes with a diameter of .156 and a pitch of .312. The front panel features the Optelecom-nkf logo, the model number 9003, and the text 'Mini Card Chassis'. A small label on the front panel provides contact information for Optelecom-nkf.

Dimensions:

- Overall Width: 8.558
- Overall Height: 7.100
- Internal Width (Top): 6.700
- Internal Width (Bottom): 6.290
- Mounting Hole Diameter: .156
- Mounting Hole Pitch: .312

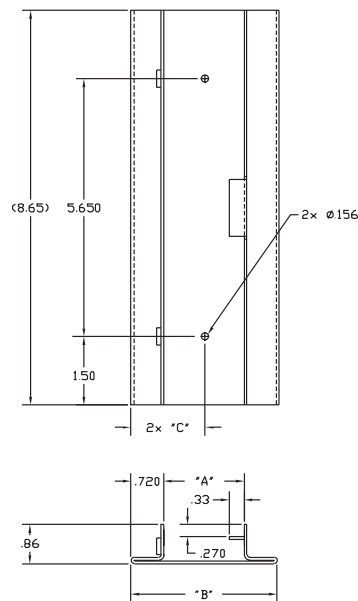
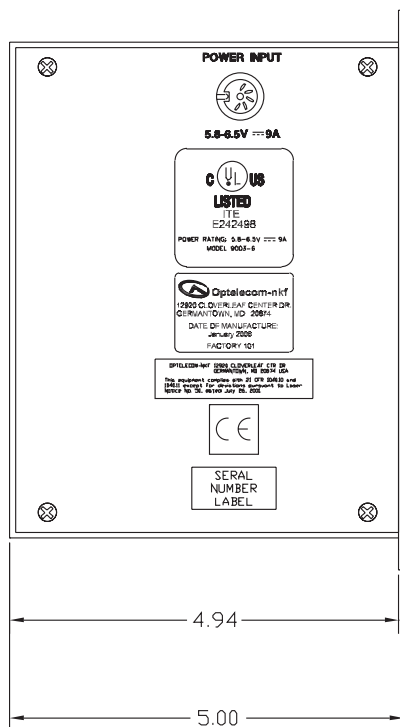
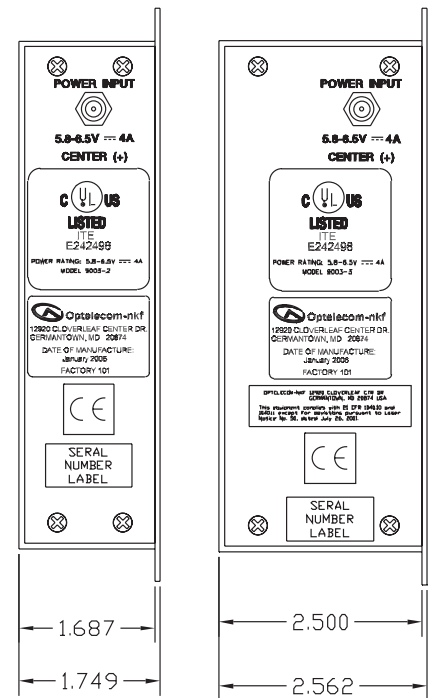
Front Panel Text:

Optelecom-nkf

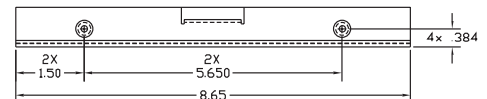
9003

Mini Card Chassis

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STAND MODEL #	CHASSIS MODEL #	OPTC #	"A"	"B"	"C"
9997-2	9003-2	23324-1	1.760	3.20	1.62
9997-3	9003-3	23324-2	2.580	4.02	2.03
9997-6	9003-6	23324-3	5.02	6.46	3.25



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9000 Series Installation and Operation Manual

Model 9152DT Model 9152DR

Digital Eight Channel Video/Five Channel
Data Multiplexer/Transmitter and
Receiver/Demultiplexer Cards

For the high quality transmission of eight channels of
composite baseband video and five channels of data
in one direction over one optical fiber

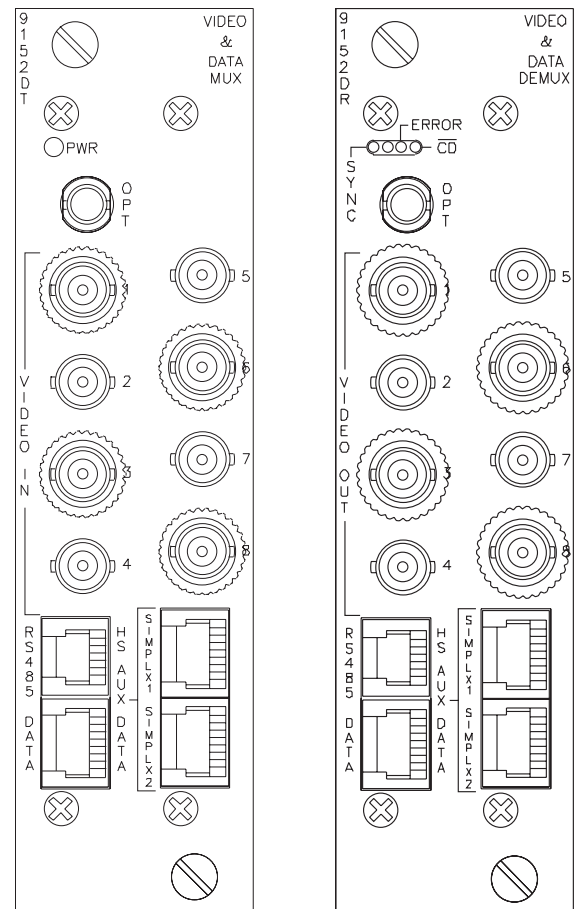


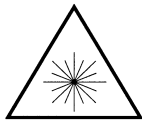
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Safety Instructions

RM-1

The safety information contained in this section, and on other pages of this manual, must be observed whenever this unit is operated, serviced, or repaired. Failure to comply with any precaution, warning, or instruction noted in the manual is in violation of the standards of design, manufacture, and intended use of the unit. Optelecom-NKF assumes no liability for the customer's failure to comply with any of these safety requirements.



LASER RADIATION
DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS (MAGNIFIERS).
CLASS 1M LASER PRODUCT

CAUTION:
DISCONNECTED OPTICAL CONNECTORS MAY EMIT OPTICAL ENERGY.
DO NOT VIEW BEAM WITH OPTICAL INSTRUMENTS (MAGNIFIERS).

This product contains Class 1M lasers or LEDs.

- Class 1M laser product according to IEC60825-1:1993+A1+A2
- **CAUTION: Use of controls or adjustments or procedures other than those specified herein may result in hazardous radiation exposure.**
- Precautions should be taken to prevent exposure to optical radiation when the unit is removed from its enclosure or when the fiber is disconnected from the unit.
- Laser radiation may be present on a fiber connection to this unit even when the power has been removed from the unit.
- This unit is intended for installation in locations where only trained service personnel have access to the fiber connections.
- The locations of all optical connections are listed in the Connection Locations and Function section of this manual.
- Optical outputs and wavelengths are listed in the Specifications section of this manual.

The optical devices used in this equipment are Hazard Level 1M. As required by IEC60825-1, the installer is responsible for insuring that the label depicted below is present in the restricted locations where this equipment is installed.

Hazard Level 1M

The border shall be black and the background shall be yellow.



This assembly contains parts sensitive to damage by electrostatic discharge (ESD). Use ESD precautionary procedures when touching, removing, or inserting parts or assemblies.

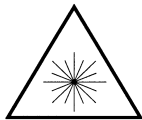


The chassis into which this unit is installed must be housed in a properly rated NEMA enclosure.



When this unit is operated in extremely elevated temperature conditions, it is possible for internal and external metal surfaces to become extremely hot. Care should be taken to insure this unit is installed in a restricted area where only properly trained service personnel have access to the unit.

Debe observarse la información de seguridad contenida en esta sección, y en otras páginas de este manual siempre que se opere, dé servicio o repare esta unidad. Si no se cumple con alguna precaución, advertencia o instrucción indicada en este manual se infringen los estándares de diseño, fabricación y el uso destinado a la unidad. Optelecom-NKF no asume ninguna responsabilidad si el cliente no cumple con alguno de estos requisitos de seguridad.



RADIACIÓN LÁSER
NO VER DIRECTAMENTE CON INSTRUMENTOS ÓPTICOS (DE AUMENTO)
PRODUCTO LÁSER CLASE 1M

PRECAUCIÓN:
LOS CONECTORES ÓPTICOS DESCONECTADOS PUEDEN EMITIR ENERGÍA ÓPTICA
NO VER EL HAZ CON INSTRUMENTOS ÓPTICOS (DE AUMENTO)

Este producto contiene rayos láser o diodos emisores de luz Clase 1M.

- Producto láser Clase 1M conforme a la norma IEC60825-1:1993+A1+A2
- **PRECAUCIÓN: El uso de los controles o ajustes o procedimientos aparte de lo especificado aquí puede ocasionar exposición peligrosa a la radiación.**
- Deben tomarse precauciones para evitar la exposición a la radiación óptica cuando se saque la unidad de su alojamiento, o cuando se desconecte la fibra de la unidad.
- Puede haber radiación láser en una conexión de fibra a esta unidad aun cuando se haya eliminado la corriente de la unidad.
- Esta unidad está destinada a instalarse en ubicaciones donde sólo el personal de servicio competente tenga acceso a las conexiones de fibra.
- Las ubicaciones de todas las conexiones ópticas se enumeran en la sección Ubicaciones de las conexiones y funciones de este manual.
- Las salidas ópticas y longitudes de onda aparecen en la sección Especificaciones de este manual.

Los dispositivos ópticos usados en este equipo son de Nivel de Riesgo 1M. Según lo exige la norma IEC60825-1, el instalador es responsable de asegurar que la etiqueta descrita a continuación esté presente en las ubicaciones restringidas donde se instale este equipo.

Nivel de Riesgo 1M

El borde debe ser negro y el fondo debe ser amarillo.



Este ensamblaje contiene piezas sensibles al daño por descargas electrostáticas (ESD, por sus siglas en inglés). Use procedimientos para prevenir las descargas electrostáticas al tocar, desmontar o insertar piezas o ensamblajes.

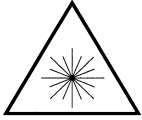


El chasis en el cual está instalada esta unidad debe estar dentro de un alojamiento debidamente calificado por NEMA.



Cuando se opera esta unidad en condiciones de temperatura sumamente elevada, es posible que las superficies internas y externas de metal se pongan extremadamente calientes. Debe tenerse cuidado para asegurar que esta unidad se instale en un área restringida donde sólo tenga acceso a la unidad el personal de servicio debidamente capacitado.

Die in diesem abschnitt und auf anderen seiten dieses handbuchs enthaltenen sicherheitsinformationen müssen befolgt werden, wenn diese einheit betrieben, gewartet oder repariert wird. Falls vorsichtsmassnahmen, warnungen oder anweisungen in diesem handbuch nicht befolgt werden, verstösst dies gegen die konstruktions, und herstellungsstandards und erfolgt im gegensatz zum vorgesehenen verwendungszweck dieser einheit. Optelecom-NKF übernimmt keine haftung für das verabsäumen des kunden, diese sicherheitsanforderungen einzuhalten.



LASER-STRAHLUNG
NICHT DIREKT MIT OPTISCHEN INSTRUMENTEN (LUPEN) ANSEHEN
LASER-PRODUKT DER KLASSE 1M

VORSICHT:
ABGEKLEMMTE OPTISCHE STECKVERBINDER KÖNNEN OPTISCHE ENERGIE FREI SETZEN
NICHT MIT OPTISCHEN INSTRUMENTEN (LUPEN) IN DEN STRAHL BLICKEN.

Dieses Produkt enthält Laser oder LEDs der Klasse 1M.

- Laserprodukt der Klasse 1M gemäß IEC60825-1:1993+A1+A2
- **VORSICHT: Wenn die Bedienungselemente anders als hier beschrieben bzw. andere Einstellungen verwendet werden, kann es zu schädlicher Strahlenaussetzung kommen.**
- Es müssen Vorsichtsmaßnahmen getroffen werden, um Aussetzung an optischer Strahlung zu vermeiden, wenn die Einheit aus dem Gehäuse genommen oder die Faseroptik von der Einheit getrennt wird.
- In einer Faseroptik-Verbindung dieser Einheit kann auch dann Laserstrahlung vorhanden sein, wenn die Stromversorgung zur Einheit abgeschaltet wurde.
- Diese Einheit ist zum Einbau an Orten vorgesehen, an denen nur geschultes Personal Zugang zu den Faseroptik-Verbindungen hat.
- Die Lage aller optischen Verbindungen ist im Abschnitt über die Lage von Anschlüssen und Funktionsweise dieses Handbuchs zu finden.
- Optische Ausgänge und Wellenlängen sind im Abschnitt mit den technischen Daten dieses Handbuchs zu finden.

Die optischen Vorrichtungen in diesem Gerät haben Gefahrenstufe 1M. Wie vorgeschrieben durch IEC60825-1 ist der Installateur dafür verantwortlich, sicherzustellen, dass die unten abgebildeten Schilder an den Orten mit eingeschränktem Zugang, an denen dieses Gerät aufgestellt ist, vorhanden sind.

Gefahrenstufe 1M

Schwarzer Rand und
gelber Hintergrund.



Diese Baugruppe enthält Teile, die durch elektrostatische Entladungen (ESD) beschädigt werden können. Vorsichtsmaßnahmen zum Schutz vor elektrostatischer Entladung treffen, wenn Teile oder Baugruppen berührt, ausgebaut oder eingefügt werden.

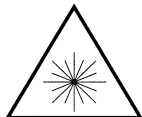


Das Gestell, in dem diese Einheit eingebaut ist, muss in einem entsprechend klassifizierten NEMA-Schutzgehäuse untergebracht sein.



Wenn diese Einheit bei besonders hohen Temperaturen betrieben wird, können interne und externe Metallflächen extrem heiß werden. Es muss darauf geachtet werden, dass diese Einheit in einem Bereich mit eingeschränktem Zugang aufgestellt wird, damit nur geschultes Wartungspersonal Zugang zur Einheit hat.

Les consignes de sécurité contenues dans cette section et dans le reste de ce manuel doivent être respectées à chaque fois que cet appareil est utilisé ou fait l'objet d'une maintenance ou d'une réparation. Le non-respect d'une précaution, d'un avertissement ou d'une instruction figurant dans ce manuel est une violation des normes de conception, fabrication et indication d'usage de l'appareil. Optelecom-NKF n'est pas responsable du non-respect de ces consignes de sécurité par le client.



RAYONNEMENT LASER
NE PAS REGARDER DIRECTEMENT AVEC DES INSTRUMENTS OPTIQUES (LOUPES)
PRODUIT LASER DE CLASSE 1M

ATTENTION:
LES CONNECTEURS OPTIQUES DEBRANCHES PEUVENT ÉMETTRE UNE ÉNERGIE OPTIQUE.
NE PAS REGARDER LE FAISCEAU AVEC DES INSTRUMENTS OPTIQUES (LOUPES)

Ce produit contient des lasers ou diodes électroluminescentes de classe 1M.

- Produit laser de classe 1M conformément à IEC60825-1:1993+A1+A2
- **ATTENTION: L'utilisation de commandes ou réglages, ou de procédures différentes de celles indiquées ici risque de provoquer une exposition dangereuse au rayonnement.**
- Prendre des précautions pour empêcher une exposition au rayonnement optique lorsque l'appareil est retiré de son boîtier ou lorsque le câble optique fibre est débranché de l'appareil.
- Un rayonnement laser pourra être présent dans un câble optique branché sur cet appareil, même une fois l'alimentation coupée.
- Cet appareil est prévu pour une installation à des endroits où seul un personnel de maintenance formé a accès aux câbles optiques.
- Les points de branchement de tous les câbles optiques sont indiqués à la section Points de branchement et fonction de ce manuel.
- Les sorties et longueurs d'onde optiques figurent à la section Caractéristiques techniques de ce manuel.

Les appareils optiques utilisés dans cet équipement correspondent à un niveau de danger 1M. Comme exigé par la norme IEC60825-1, il incombe à l'installateur de s'assurer que l'étiquette ci-dessous est présente aux endroits d'accès limité où cet équipement est installé.

Niveau de danger 1M

La bordure doit être noire et le fond jaune.



Cet ensemble contient des pièces sensibles aux décharges électrostatiques (ESD). Prendre les précautions relatives aux ESD avant de toucher, retirer ou insérer des pièces ou des ensembles.



Le châssis dans lequel est installé cet appareil doit être placé dans une enceinte NEMA conforme aux spécifications nominales.



Lorsque cet appareil fonctionne à une température ambiante extrêmement élevée, il est possible que les surfaces métalliques internes et externes deviennent extrêmement chaudes. S'assurer que cet appareil est installé dans une zone dont l'accès est limité à un personnel de maintenance correctement formé.

Fiber Information

This unit was manufactured with attention to fiber cleanliness by Optelecom-NKF. Beyond the optical safety information contained in this manual, the following guidelines should be observed when working with optical fibers.

The biggest problem is **dirt!**

It takes very little contamination to cause problems with optical fiber connections; cleanliness is extremely important to proper operation of optical equipment.

1. Protect optical connectors by leaving the connector covers in place on unused fiber connections and on the fiber tips themselves.
2. Personnel who remove and replace fibers should be equipped with a fiber cleaning kit. These are inexpensive and can be obtained from any fiber equipment supply house. If you choose to, you can use propanol and lint-free tissue to clean fibers.
 - a. Do not use isopropanol alcohol (typically called rubbing alcohol) mixed with water. This can cause additional spots. (**Caution: Pure isopropanol is very flammable!**)
 - b. Use lintless tissues to clean fibers.
 - c. Clean the fiber with a folded tissue moistened with the propanol, pulling the connector tip across the tissue, then turn the connector 90 degrees and repeat in a different spot on the tissue.
 - d. Don't pull the fiber across and then push it back. This will put the dirt that was cleaned off back on again.
 - e. Repeat the process on a dry, folded tissue.
3. When removing fibers, **always** clean them when replacing them no matter how long you had them off.
4. When connecting fibers, pay attention to the bend radius of the fibers. A general rule is to have a 3-inch (8 cm) bend radius. A bend radius less than 3 inches is an attenuator and can cause optical signal loss.
5. Installers of fiber equipment should be equipped with the equipment manuals and an optical power meter to measure the optical inputs and outputs in a system. An optical power meter is an inexpensive tool that can save much time and effort in getting optical communications links up and running. Properly equipped and trained installers can quickly determine the source of any problems that occur.

Functional Description

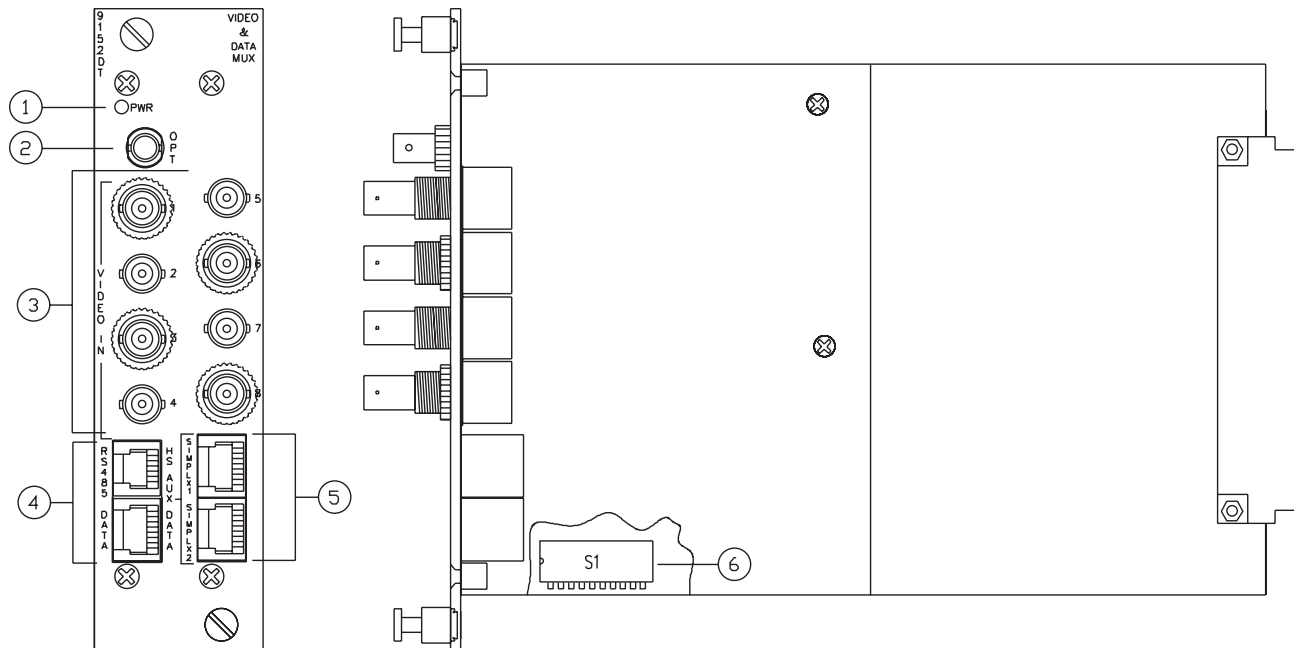
The Model 9152DT Multiplexer/Transmitter combines eight composite video baseband signals by implementing a 10-bit linear analog-to-digital conversion on each signal at a 15 MHz rate, combining the signals with five input data signals using Time Division Multiplexing (TDM) techniques and transmitting the data via one optical fiber.

The Model 9152DR receives the optical signal from the transmitter, separates the composite data into eight digital video data streams and five data streams, does a digital-to-analog conversion of the eight video data streams yielding eight composite video outputs and five data outputs.

The 9152DT and 9152DR are compatible with the 9000 series card chassis, occupies two card slots each, and operate on 6 VDC from the appropriate chassis power supply.

9152DT Indicator, Connector, and Dipswitch Locations and Function

FIGURE 1



1. POWER INDICATOR

When illuminated, the **green** LED indicates that the card is receiving power from the power supply.

2. OPTICAL OUTPUT PORT

The optical fiber cable connector is connected to this port for transmission of the optical signal to the 9152DR receiver/demux.

3. VIDEO INPUT CONNECTORS (EIGHT)

Compatible with BNC connected coaxial cables, these connectors accept the eight video input signals.

4. SIMPLEX DATA INPUT CONNECTORS (TWO)

- A. The RJ45 "DATA" port accepts two input data signals, one RS232 and one switch-selectable RS422, RS485, or Manchester (biphase) signal.
- B. The RJ12 "RS485" port accepts the input of an RS485-compatible data signal.

5. SIMPLEX HS AUX DATA INPUT PORTS

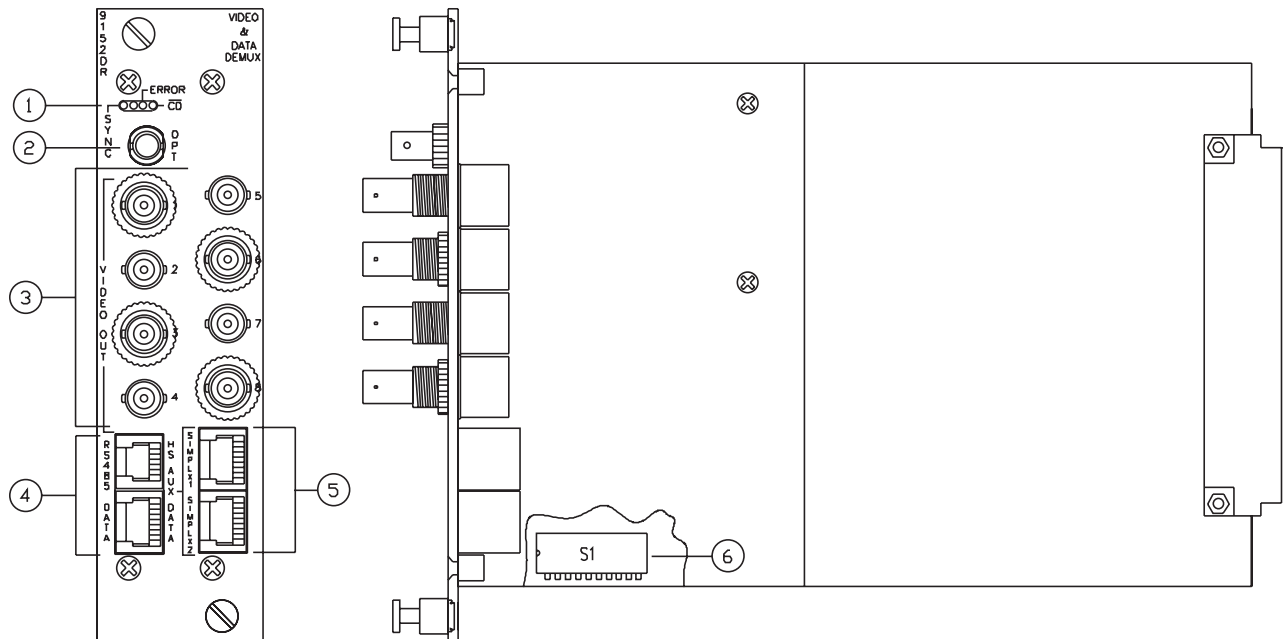
Each of these two RJ45 ports interface with a Model 9961-C or 9962-C Option Module Mux/Demux, providing for the transmission of its composite data output signal via the 9152DT to the 9152DR. By using up to two Model 9962-C Option Modules connected via the HS ports, up to 32 channels of audio or up to 16 channels of data may be transmitted in addition to the 8 video channels over the same optical fiber. The shielded Cat5/6e cable connecting the two HS Aux Data ports should not exceed 4 feet (1.3m).

6. DATA INTERFACE CONFIGURATION DIPSWITCH

This ten-position dipswitch allows the user to select the desired data interface compatibility of the configurable input on the "DATA" port.

9152DR Indicator, Connector, and Dipswitch Locations and Function

FIGURE 2



1. STATUS INDICATORS

- SYNC — When illuminated, this **green** LED indicates that the data demultiplexer is receiving a good signal and is synchronized with the multiplexer.
- ERR — When illuminated, this **yellow** LED indicates that there are errors being detected in the received optical data stream.
- CD — When illuminated, this **red** LED indicates that the receiver is not receiving sufficient optical power to operate. (The optical carrier is not being displayed.) For the LHS version, this LED is not functional.

2. OPTICAL INPUT PORT

The optical fiber cable connector is connected to this port to receive the optical signal from the 9152DT mux/transmitter.

3. VIDEO OUTPUT CONNECTORS (EIGHT)

Compatible with BNC connectors, these connectors output the eight received video signals.

4. SIMPLEX DATA OUTPUT CONNECTORS (TWO)

- The RJ45 "DATA" port outputs two data signals, one RS232 and one switch-selectable RS422, RS485, or Manchester (biphase) signal.
- The RJ12 "RS485" port outputs an RS485-compatible data signal.

5. SIMPLEX HS AUX DATA OUTPUT PORTS

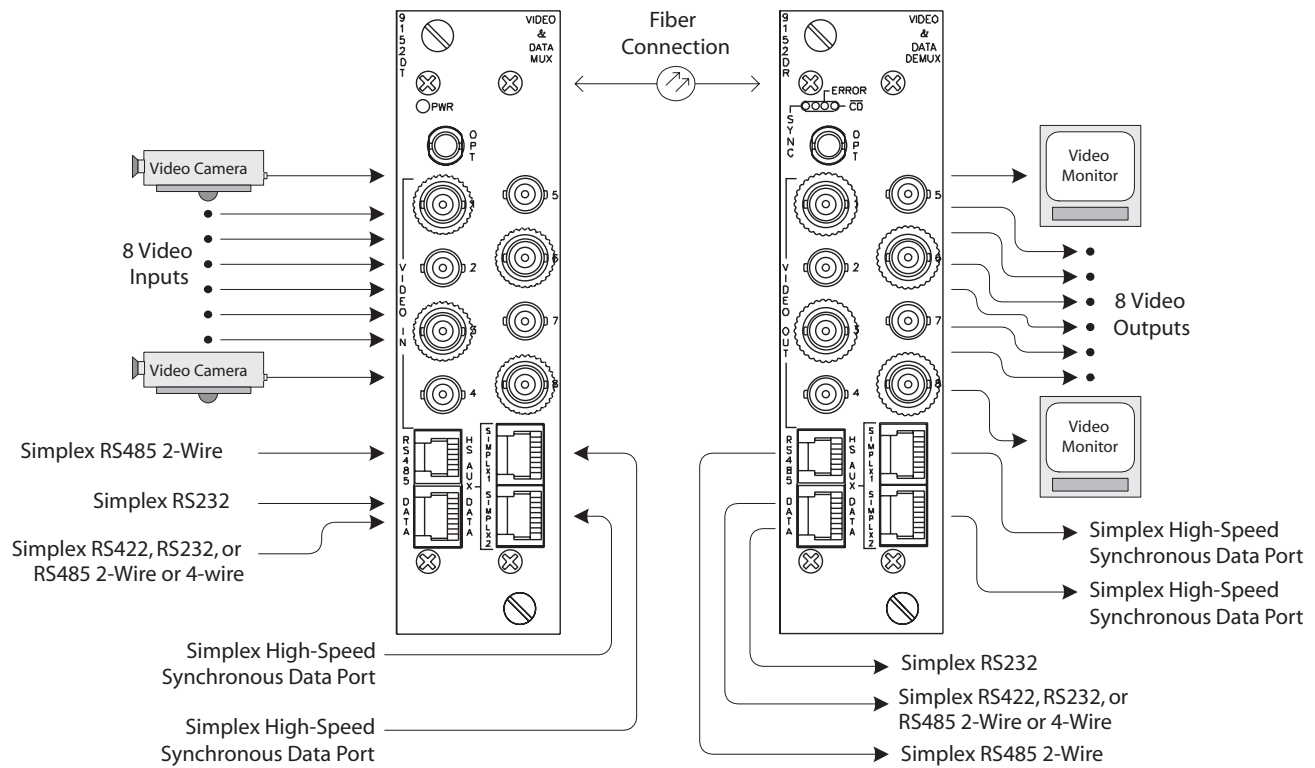
Each of these two RJ45 ports on the 9152DR interface with a Model 9961-C or 9962-C Auxiliary Audio/Data Mux/Demux cards to transport the multiplexed composite data transmitted via the 9152DT from the HS AUX Data Input Ports. These high-speed ports greatly expand the transmission capability of the 9152DT/9152DR pair. The shielded Cat5/6e cable connecting the two HS Aux Data ports should not exceed 4 feet (1.3m).

6. DATA INTERFACE SELECT DIPSWITCH

This ten-position dipswitch allows the user to select the desired data interface compatibility of the configurable data output on the "DATA" port.

9152DT/9152DR Configuration and Connection Guide

FIGURE 3



To install, connect the video inputs to the 9152DT, connect the video monitors or other video receptors to the 9152DR, and connect an appropriate optical fiber between the 9152DT and 9152DR optical ports. Connect data signal sources or destinations, as required, to the "DATA" and "RS485" ports per the following Built-In Data Connection section. If the Model 9961-C or 9962-C add-on option interface module mux/demux host units are to be used, plug the CAT-5/6e data cable from the unit(s) into the HS AUX data port(s) as required. The shielded Cat5/6e cable connecting the HS Data ports to accessory cards should not exceed 4 feet (1.3m) in length.

Built-In Data Connection and Configuration

DATA AND RS485 PORTS

There are four data interface ports on the 9152DT and 9152DR. Two of them are the “DATA” port and the “RS485” port that are primarily used for the transmission of RS232, RS422, RS485 or Manchester (biphase) PTZ data.

The “DATA” port supports two data channels, one a full-time RS232 channel and the other a configurable data channel that is dipswitch programmable for RS422, RS485 2- or 4-wire, or Manchester operation. Both channels are implemented via the RJ45 connector marked “data”. The RS232 channel is a dedicated channel. There are no dipswitch settings associated with or required for operation of this channel. The configurable channel must be programmed by setting dipswitch S1 on the board for proper operation. Refer to Table 1 for switch settings and to Table 2 and Figures 4, 5, 6, and 7 for connection and pinout information. Refer to the section on termination to determine when the terminations should be enabled (ON) and when it should be disabled (OFF).

The “RS485” port supports a dedicated 2-wire RS485 channel. The only dipswitch setting required for this port is the termination setup. Tables 1 (above) and 3 contain switch setting and pinout information. Connection information is found in Figures 8 and 9. Refer to the next section on Termination Rules to determine when the terminations should be enabled (ON) and when it should be disabled (OFF).

TABLE 1 — SWITCH SETTINGS

Port	Data Type	Termination applies to 9152DT only	Dipswitch									
			1	2	3	4	5	6	7	8	9	10
DATA Port (RJ45)	RS422	Terminated			On	On	On	On	On	Off	Off	Off
		Unterminated			Off	On	On	Off	Off	Off	Off	Off
	RS485 4-Wire	Terminated			On	On	On	On	On	Off	On	Off
		Unterminated			Off	On	On	Off	Off	Off	On	Off
	RS485 2-Wire	Terminated			On	On	On	On	On	Off	On	On
		Unterminated			Off	On	On	Off	Off	Off	On	On
	Manchester				On	Off	Off	On	On	On	Off	Off
RS485 Port (RJ12)	RS485 2-Wire	Terminated	On	On								
		Unterminated	Off	Off								

TABLE 2 — CONNECTIONS AND PINOUTS, DATA PORT								
Connection	Configurable DATA Port (RJ45) Pin Numbers							
	1	2	3	4	5	6	7	8
RS232	Common	In					Out	Common
RS422, RS485 4-Wire, Manchester			Out (+)	In (+)	In (–)	Out (–)		
RS485 2-Wire				In/Out (+)	In/Out (–)			

Note that on the 9152DT (Transmitter) only input connections are active and on the 9152DR (Receiver) only the output connections are active.

The “RS485” port supports a dedicated 2-wire RS485 channel. The only dipswitch setting required for this port is the termination setup. Tables 1 (above) and 3 contain switch setting and pinout information. Connection information is found in Figures 8 and 9. Refer to the next section on Termination Rules to determine when the terminations should be enabled (ON) and when they should be disabled (OFF).

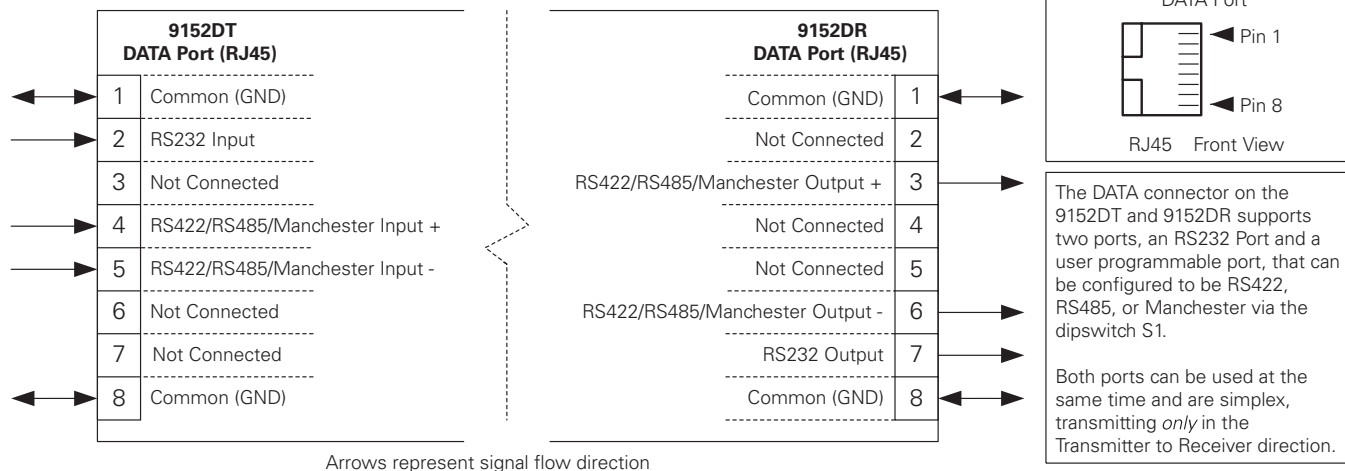
TABLE 3 — CONNECTIONS AND PINOUTS, RS485 PORT						
Connection	RS485 Port (RJ12) Pin Numbers					
	1	2	3	4	5	6
RS485	COM	In/Out (–)	In/Out (+)	In/Out (+)	In/Out (–)	COM

Note that on the 9152DT (Transmitter) only input connections are active and on the 9152DR (Receiver) only the output connections are active.

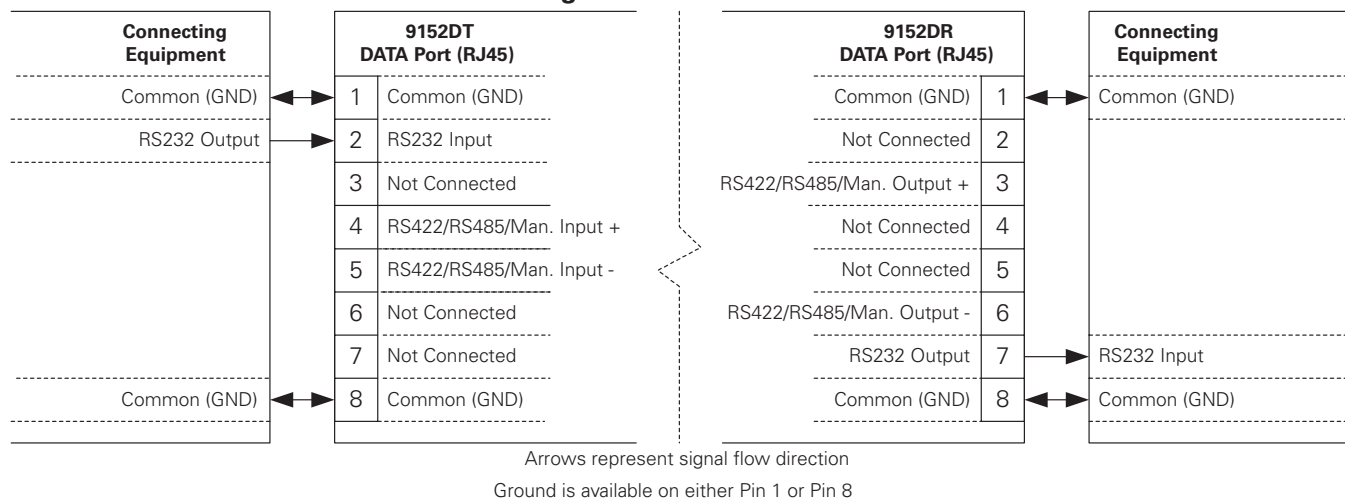
FIGURE 4

Connections for 9152DT/9152DR Data Port (RJ45)

Pinouts for the DATA Port (RJ45)



Connecting the RS232 Port



Connecting the RS422/RS485/Manchester Port

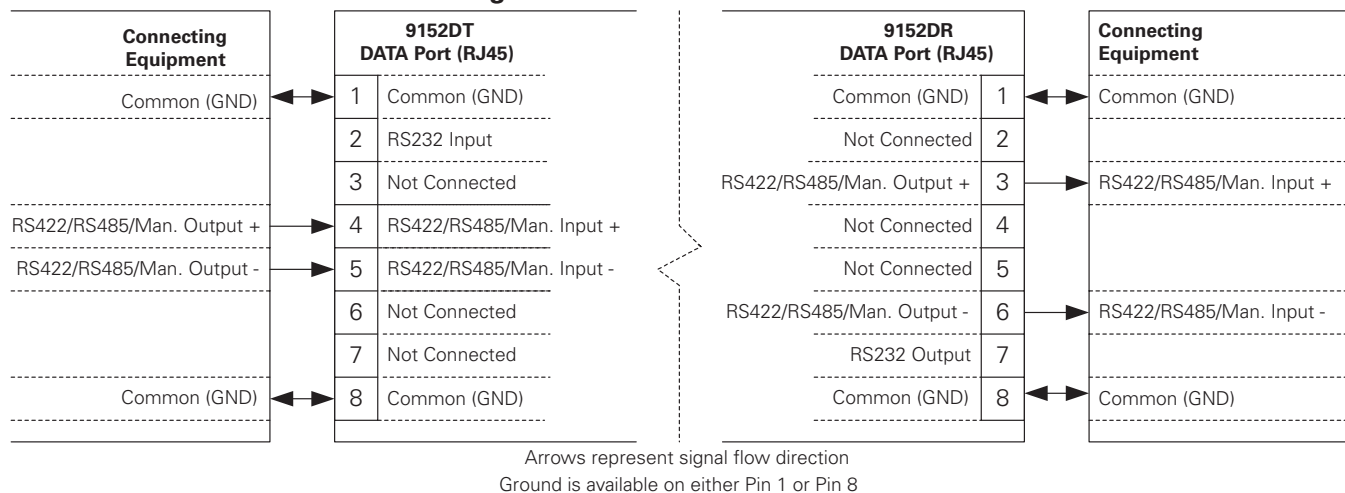
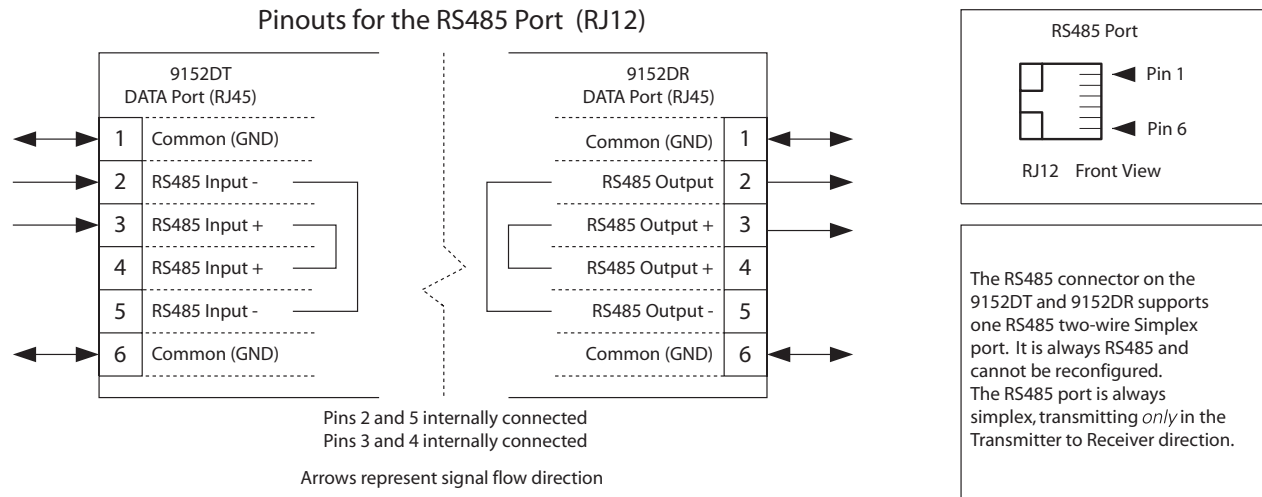
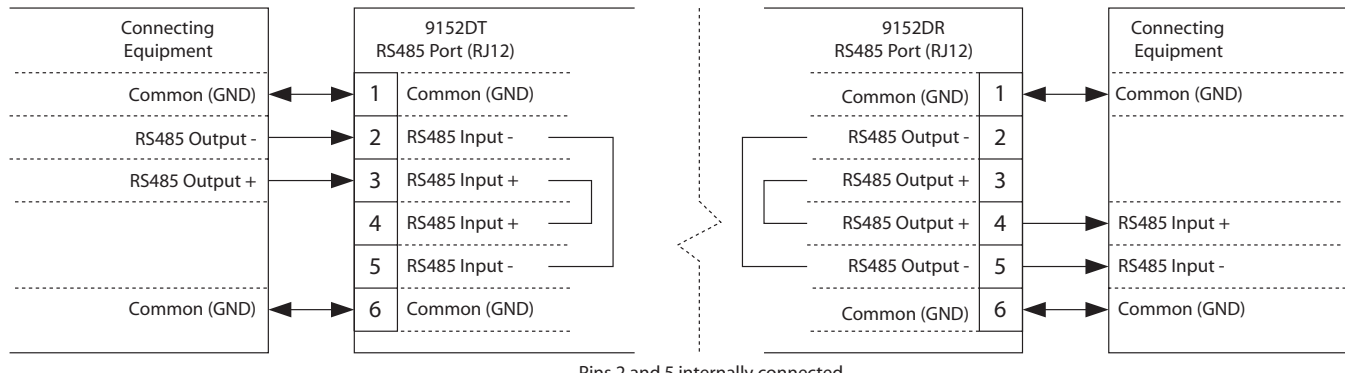


FIGURE 5

Connections for 9152DT/9152DR RS485 Port (RJ12)



Connecting the RS485 Port



RS485, RS422, AND MANCHESTER TERMINATION RULES

For RS422, RS485, and Manchester connections it is possible that multiple devices may be connected in parallel. This is usually a transmitter and many receivers connected together or many transceivers in RS485. When this occurs, this parallel bus must be terminated with the correct impedance. Use the following rules to determine if the termination resistors should be enabled or disabled.

RS422 and RS485

Enable termination only on the device farthest from the transmitting end, leaving the input termination disabled on the devices in between.

Manchester

If there are six or more devices, disable all the termination resistors. If there are fewer than six devices, enable termination only on the device farthest from the transmitting end, leaving the input termination disabled on the devices in between.

The following diagrams show examples of various system connections.

FIGURE 6

Terminating RS422 and Manchester Connections

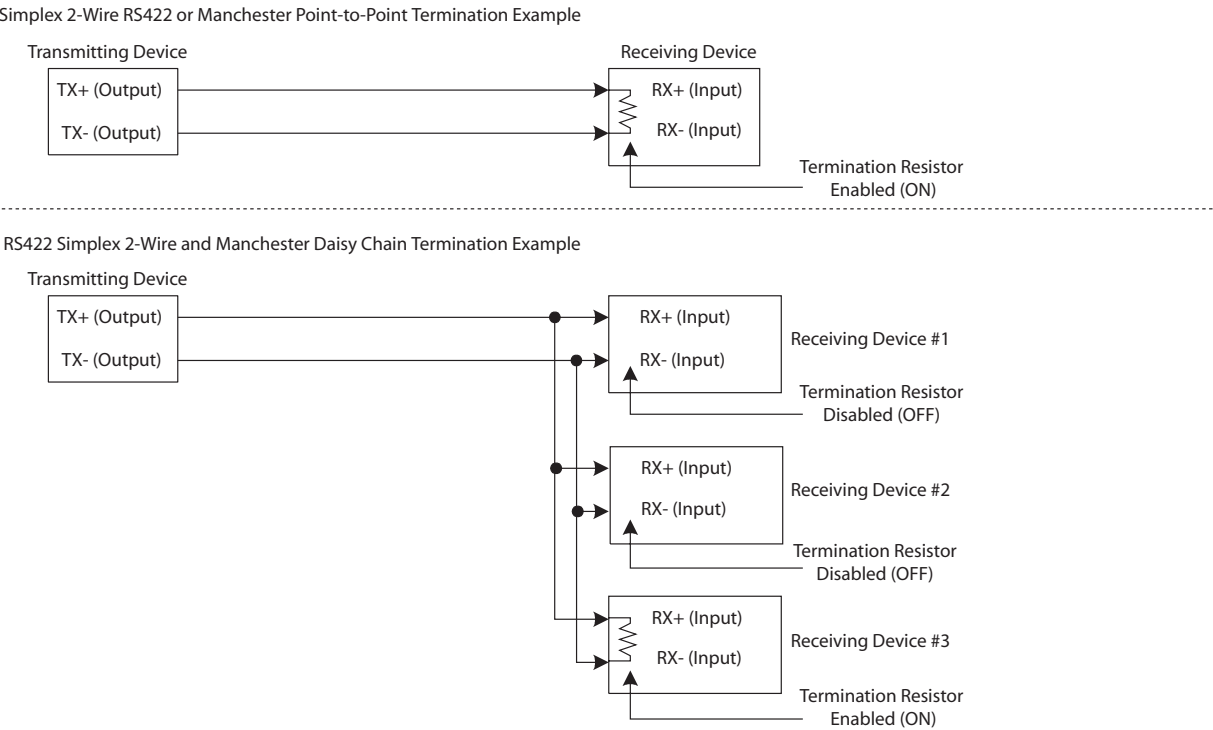
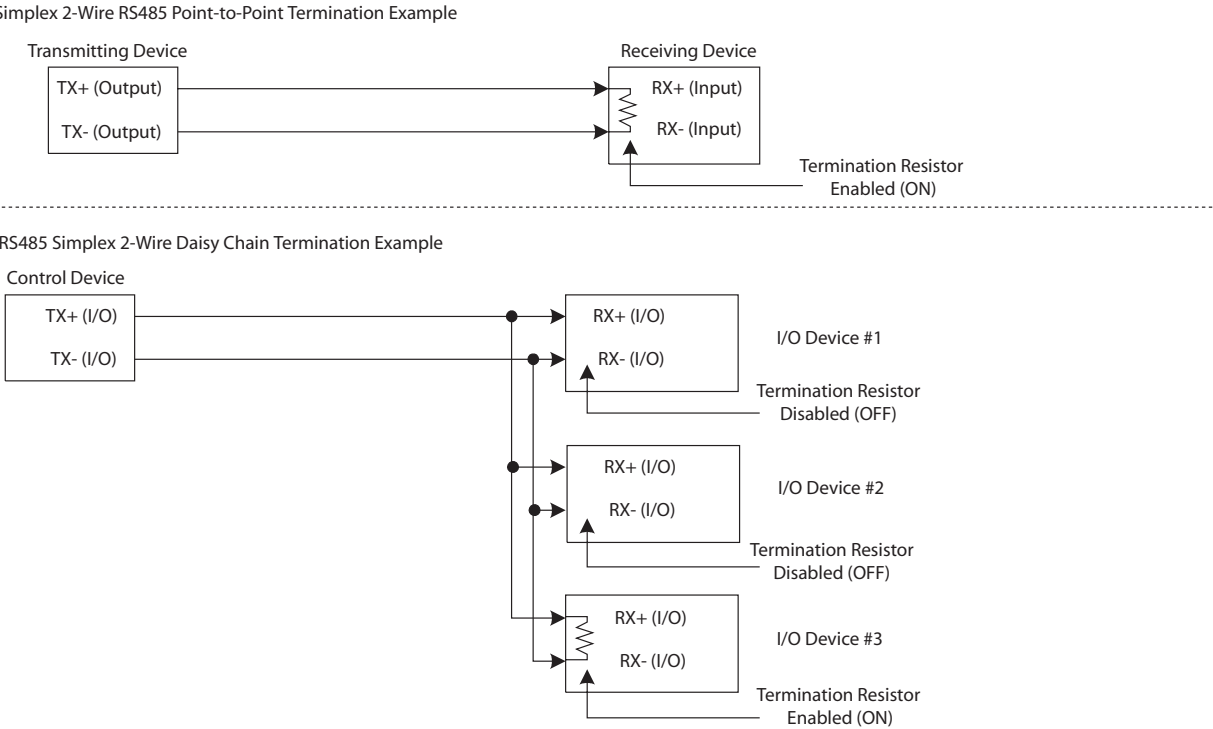


FIGURE 7

Terminating RS485 Connections

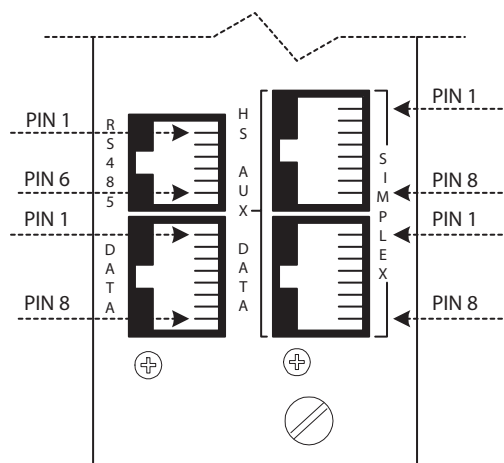


HS AUX DATA PORTS

In addition to the “DATA” and “RS485” ports on both the DT and DR units, there are two HS AUX DATA INPUT ports on the 9152DT and two HS AUX DATA OUTPUT ports on the 9152DR. Each of these ports is capable of carrying asynchronous RS422 data at rates from DC to 1.5 Mbps (10X oversampled) in one direction from the transmitter (9152DT) to the receiver (9152DR). These ports can carry synchronous data utilizing the 15 MHz Transmit Clock and Receive Clock outputs provided.

Although these ports can be used for general purpose RS422 applications, they are primarily configured to support the Model 9961-C Four Channel and 9962-C Eight Channel Auxiliary Data/Audio Mux/Demux Cards. When mated with the host Model 9152D units, these cards operate in simplex mode supporting either four or eight Data/Audio Option Modules. To install, connect a straight through Category 5 jumper cable (provided with the 996X-C) from the 9961-C or 9962-C to either of the HS AUX DATA PORTS on both the 9152DT and 9152DR. This provides the separate mux/demux card access to the significant data transmission capability of the 9152DT/DR to transport its data without using extra optical fibers. The shielded Cat5/6e cable used should not exceed 4 feet (1.3m).

FIGURE 8



RS485, Data, and
High-Speed Simplex Ports

TABLE 4 — HIGH SPEED SIMPLEX AUX DATA PORT PINOUTS FOR THE 9152DT

Pin #	Function
1	TX Data (+) – Input
2	TX Data (–) – Input
3	TX Clock (+) – Output
4	Not Used
5	Not Used
6	TX Clock (–) – Output
7	Not Used
8	Not Used

TABLE 5 — HIGH SPEED SIMPLEX AUX DATA PORT PINOUTS FOR THE 9152DR

Pin #	Function
1	Not Used
2	Not Used
3	Not Used
4	RX Data (+) – Output
5	RX Data (–) – Output
6	Not Used
7	RX Clock (+) – Output
8	RX Clock (–) – Output

Operation of the 9152DT and 9152DR

Operation is straightforward. Connect per the directions in the Configuration and Connection Guide section on page 5. There are no adjustments. Under normal operation, only the green POWER indicator on the 9152DT and the green SYNC indicator on the 9152DR will be illuminated.

Operation of the 9152D with the Network Management System

Operation of the 9152DT with the Network Management System consists of the following parameters:

1. Slot Number
2. Card Name (Model Number)
3. Serial Number
4. Time
5. Wavelength
6. Revision Number
7. Chronometer Value (Cumulative Hours of Operation)
8. Reset Cycles (Cumulative Number of Power Cycles)
9. Firmware Revision
10. Laser Drive Current
11. Laser Modulation Current
12. Optical Output Power Lead
13. Video Input Present (each channel)

Operation of the 9152DR with the Network Management System consists of the following parameters:

1. Card Location
2. Card Name (Model Number)
3. Serial Number
4. Time
5. Wavelength
6. Revision Number
7. Chronometer Value (Cumulative Hours of Operation)
8. Reset Cycles (Cumulative Number of Power Cycles)
9. Firmware Revision
10. Local Demux Sync
11. Received Optical Power
12. Video Output Present (each channel)

NMS users should set the Alarm Status and Alarm Limits for each parameter as required for the specific application when the NMS software is operated for the first time.

When the 9152D card is installed into an existing system already utilizing NMS system software, an upgrade of the software will be necessary to add the 9152D card to the software database in the NMS software. Consult the factory for guidance on how to download the latest version of the software from the Optelecom-NKF FTP download site.

Specifications for the 9152D

OPTICAL

Transmitter Model	LDS	LD	LD	LDH	LDH	LD3	LD3	LD3(X) ¹	LD3(X) ¹	LDL
Transmitter Optical Output Wavelength	850	1310	1310	1310	1310	1550	1550	CWDM	CWDM	1310
Mating Receiver Model	S	L	LHS	L	LHS	L	LHS	L	LHS	LM
Transmitter Optical Output Power (dBm) 50 μm	-5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-4
Transmitter Optical Output Power (dBm) 62.5 μm	-5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-4
Transmitter Optical Output Power (dBm) 09 μm	N/A	-4	-4	0	0	0	0	0	0	N/A
Receiver Optical Input Sensitivity (dBm) 50 μm	-19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-24
Receiver Optical Input Sensitivity (dBm) 62.5 μm	-19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-24
Receiver Optical Input Sensitivity (dBm) 09 μm	N/A	-24	-32	-24	-32	-24	-32	-24	-32	N/A
Maximum Receiver Optical Input (dBm)	-4	-3	-10	0	-10	-3	-10	-3	-10	-3
Link Budget (dB) 50 μm	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20
Link Budget (dB) 62.5 μm	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20
Link Budget (dB) 09 μm	N/A	20	28	24	32	24	32	24	32	N/A
Estimated Distance (km) 50 μm ^{2,3}	0.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0
Estimated Distance (km) 62.5 μm ^{2,3}	0.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0
Estimated Distance (km) 09 μm ^{2,3}	N/A	48	71	60	82	84	116	48-84	71-116	N/A

¹ Replace X with A through W to represent CWDM wavelengths per the table below.

² Range based on losses of 3.0 dB/km @ 850 nm or 1.0 dB/km @ 1310 nm for 62.5/125 multimode fiber, 0.35 dB/km @ 1310 nm or 0.25 dB/km @ 1550 nm for singlemode fiber, and includes a 3 dB safety factor.

³ Range may be limited by modal and chromatic dispersion, fiber quality, and bandwidth. Range estimates for multimode are based on 500 Mhz/Km fiber.

CWDM Letter Code	Wavelength	CWDM Letter Code	Wavelength
A	1470	N	1290
B	1490	P	1310
C	1510	Q	1330
D	1530	R	1350
E	1550	S	1370
F	1570	T	1390
G	1590	U	1410
H	1610	V	1430
M	1270	W	1450

VIDEO

Video Format	NTSC or PAL
Voltage	1V p-p, 75 Ω
Bandwidth	2Hz to 6.5 MHz
Differential Gain	$\leq 0.7\%$ typ.
Differential Phase	$\leq 0.7^\circ$ typ.
Video SNR	≥ 67 dB over usable fiber range (weighted per RS250 standard)
Encoding	10 bit Linear PCM
Sampling Rate	15 MHz
Bit Rate Over Fiber	1.44 GBps

DATA TRANSMISSION BY PORT

Data Port

Connector	RJ45
Function	Simplex RS232 plus switch-selectable RS422 or RS485
Data Rate	DC to 115.2 kbps

RS485 Port

Connector	RJ12
Function	Simplex RS485
Data Rate	DC to 115.2 kbps

HS AUX DATA Port (2)

Connector	RJ45
Function	Simplex RS422
Data Rate	DC to 1.5 MBps, asynchronous 15 MBps, synchronous

POWER

Requirements	1.5A @ 6VDC
Source	Chassis backplane

PHYSICAL

Dimensions (in inches)	6.15 H x 1.6 W x 8.6 D
Weight (in pounds)	1.01

ENVIRONMENTAL

Operating Temperature	-40°C to $+74^\circ\text{C}$
LHS Receiver Version	0°C to $+65^\circ\text{C}$
Storage Temperature	-55°C to $+85^\circ\text{C}$
Relative Humidity	0 to 95% noncondensing

QUALITY/CERTIFICATIONS

Compliance	CE, FCC Part 15, Class A
MTTF	Consult factory

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BOSCH

Technologia bliżej nas

Kamery FlexiDome VF i XT+ VDM-345 i VDC-455



Kamery kopułkowe FlexiDome VF i XT+ doskonale sprawdzają się w praktycznie każdym zastosowaniu wewnętrznym i zewnętrznym. Obudowa w formie odlewu aluminiowego, poliwęglanowa kopułka i wzmocniona wkładka maskująca w kamerze FlexiDomeXT+ mogą wytrzymać nacisk o równoważnej sile 55 kg. Kamera FlexiDomeVF posiada standardową obudowę do zastosowań wewnętrznych. Urządzenia te zawierają w pełni funkcjonalne kamery kolorowe i monochromatyczne z przetwornikiem CCD 1/3" i wbudowanym obiektywem zmiennoogniskowym.

Instalacja jest szybka i prosta, ponieważ kamery dostarczane są w postaci całkowicie zmontowanej i gotowej do natychmiastowego użytku. Wykorzystując zastrzeżony prawnie mechanizm uchylono-obrotowy, instalator może dokładnie ustawić kąt widzenia. Dostępnych jest wiele opcji montażowych, wśród których znajduje się montaż powierzchniowy, 4S, ścienny, narożny i sufitowy - podwieszany.

Kamery FlexiDome VF i XT+ stanowią doskonałe rozwiązanie w wielu instalacjach dozorowych. Dzięki niewielkiej, dyskretnej obudowie i niemal płaskiemu montażowi, kamery harmonijnie komponują się z praktycznie każdym wystrojem wnętrza. Obudowy kamer zapewniają dodatkową ochronę konieczną w takich miejscach, jak szkoły, banki, więzienia, parkingi, sklepy i biurowce.

- ▶ Modele o standardowej i wysokiej odporności na uderzenia
- ▶ Przetwornik obrazu CCD 1/3"
- ▶ Doskonała jakość obrazu w praktycznie każdym otoczeniu
- ▶ Rozdzielczość w kolorze 540 linii TV
- ▶ Zasilanie napięciem AC lub DC
- ▶ Opatentowany kształt kopułki zapewniający widok w pionie w zakresie 90°
- ▶ Zwiększona czułość dzięki funkcji NightSense
- ▶ Komunikacja przy użyciu protokołu Bilinx

Funkcje

Technologia

Kamery FlexiDome VF i XT+ oparte są na najnowszej technologii przetwarzania obrazu stosowanej obecnie w kamerach kolorowych o rozdzielczości 540 linii TV. Dzięki zwiększonej czułości, wysokiej rozdzielczości i doskonałej jakości obrazu, doskonale sprawdzają się one praktycznie w każdej sytuacji. Krąg zastosowań poszerza jeszcze możliwość doboru obiektywu, co umożliwia użycie kamer zarówno tam, gdzie konieczne jest wykonanie dużego zbliżenia, jak i w miejscach o bardzo złym oświetleniu.

Obsługa

Asystent Lens wizard oraz wspomaganie ogniskowania znacząco upraszczają regulację obiektywu i umożliwiają zachowanie prawidłowej ostrości w pełnym, dobowym cyklu pracy. Wszystkie kamery mogą być zasilane napięciem AC i DC. W przypadku zasilania napięciem AC, dostępna jest synchronizacja siecią zasilającą z regulacją fazy. Funkcja NightSense w kamerach kolorowych powoduje 3-krotne zwiększenie i tak doskonałej czułości przy pracy w trybie monochromatycznym. Wszystkie kamery obsługują technologię Bilinx, która umożliwia zdalne konfigurowanie, sterowanie a nawet aktualizację oprogramowania układowego kamer poprzez wizyjny kabel koncentryczny.

Elementy obsługi i wskaźniki

- Menu ekranowe
- Obsługa przy pomocy 5 przycisków

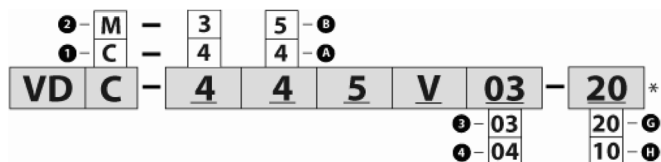
Połączenia

- Złącze wizyjne BNC na kablu
- Kable połączeniowe do doprowadzenia zasilania

Certyfikaty i zgodność ze standardami

Odporność EMC	CE (EN 50130-4)
Emisja EMC	CE (EN 50022 klasa B); FCC, Klasa B Część 15
Standardy bezpieczeństwa	UL 1950; CSA 22.2 Nr 950 i CE (EN 60950)
Wodo-, pyłoszczelność	IP66 i NEMA-4X (modele VDM-355 i VDC-455)

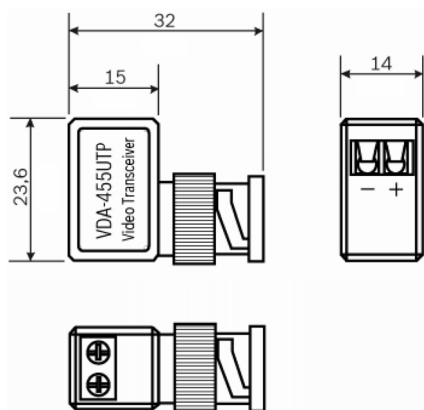
Uwagi dotyczące instalacji i konfiguracji



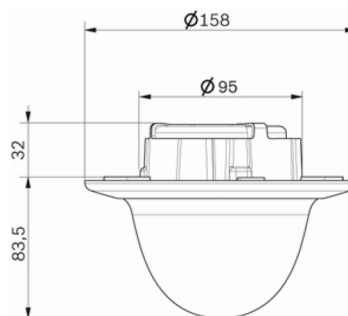
1	C – 4: kolorowa	A	Kamera typu VF (std. odporność na uderzenia)
2	M – 3: monochromatyczna	B	Kamera typu XT+ (wandaloodporna)
3	Ogniskowanie szerokokątne do standardowego	G	Kolorowa NTSC lub monochr. EIA
4	Ogniskowanie standardowe do teleobiektywu	H	Kolorowa PAL lub monochr. CCIR

* W przypadku wersji do montażu powierzchniowego, po oznaczeniu modelu kamery należy dodać litere S

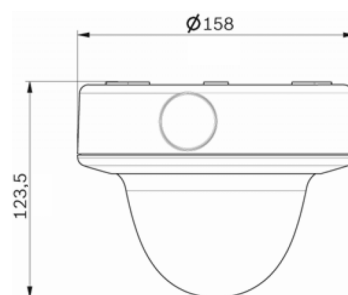
Sposoby oznaczenia modelu



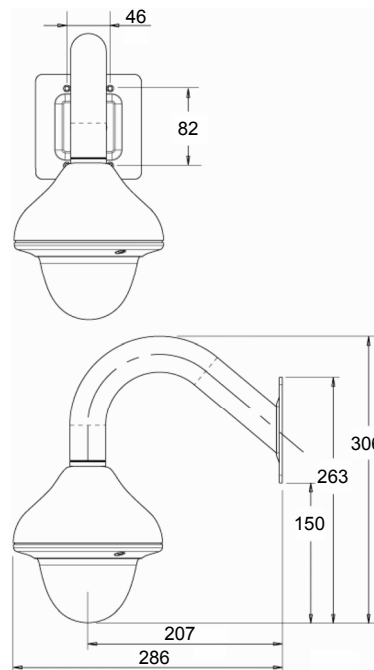
Wymiary transceivera BNC / UTP (skrętka)



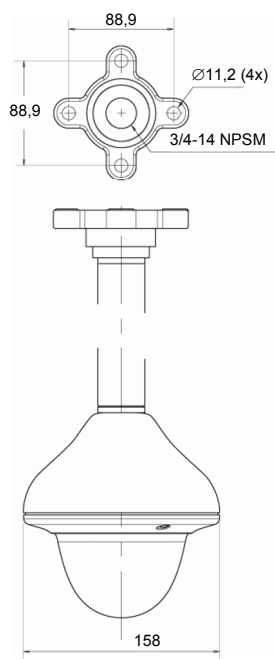
Wymiary modeli do montażu płaskiego w zastosowaniach wewnętrznych



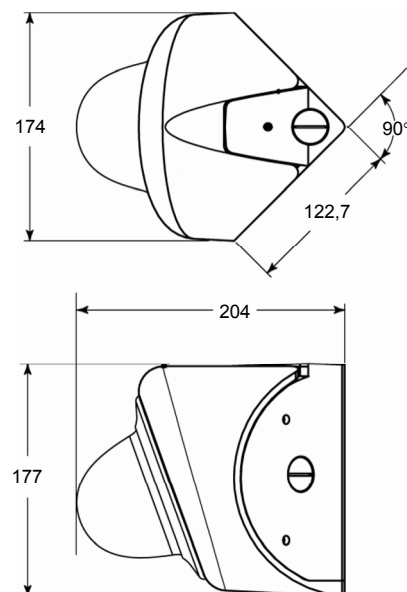
Wymiary modeli do montażu powierzchniowego w zastosowaniach wewnętrznych



Wymiary modeli do montażu ściennego



Wymiary modeli do zawieszania



Wymiary modeli do montażu narożnego

Dane techniczne

Parametry elektryczne

Zasilanie			
Napięcie znamionowe	12 VDC lub 24 VAC, 50 Hz		
Zakres napięcia zasilania	10,8 - 39 VDC lub 12 - 28 VAC, 45 - 65 Hz		
Pobór mocy	VDM-345 i VDC-455: 4 W		
	VDM-355 i VDC-455: 4 W lub 6 W przy włączonym grzejniku		
Przetwornik obrazu	CCD 1/3" z wybieraniem międzyliniowym		
Aktywne elementy obrazu			
Modele PAL	752 (poz.) x 582 (pion.)		
Modele NTSC	768 (poz.) x 494 (pion.)		
Czułość (3200 K)			
Model			Pełny obraz
	(30 IRE)	(50 IRE)	(100 IRE)
Monochr. z obiektywem F1.4	lx 0,09	0,2	0,78
Monochr. z obiektywem F1.6	lx 0,12	0,26	1,0
Kolorowy z obiektywem F1.4	lx 0,44	0,98	3,9
NightSense	0,18	0,49	1,6
Kolorowy z obiektywem F1.6	lx 0,58	1,3	5,1
NightSense	0,23	0,5	2,0
Rozdzielczość pozioma			
Modele kolorowe	540 linii TV		
Modele monochromatyczne	570 linii TV		
Stosunek sygnał / szum	>50 dB		
ARW (AGC)	maks. 20 dB		
Funkcja Auto black	wł. / wył.		
Migawka elektroniczna	bez migotania, wł. / wył.		
Funkcja NightSense	autom., wymuszona, wył.		
Korekcja ostrości	pozioma i pionowa, symetryczna		
Kompensacja tła	ważona w środku obrazu, wył.		
Balans bieli	automatyczne wykrywanie (2500 – 9000 K) i względem stałego poziomu		
Wyjście wizyjne	całkowity sygnał wizyjny 1,0 Vpp, 75 Ω		
Synchronizacja	wewnętrzna lub siecią zasilającą*		

* Synchronizacja siecią zasilającą (przy zasilaniu AC) kamery w punkcie przejścia napięcia zasilającego przez zero. Opóźnienie fazy odchylenia pionowego może być regulowane w zakresie 0 - 358°, aby umożliwić uzyskanie synchronizacji pionowej w instalacji, w której urządzenia zasilane są z różnych faz.

Parametry optyczne

Obiektyw zmiennoogniskowy	zoom ręczny i regulacja ogniskowania
Sterowanie przysłoną	automatyczne
Kąt widzenia	
2,6 – 6 mm	szerokok. 98,5° x 75,3° (poz. x pion.) teleob. 48,1° x 36,2° (poz. x pion.)
4 – 9 mm	szerokok. 68° x 50,2° (poz. x pion.) teleob. 32,1° x 24,1° (poz. x pion.)
3,7 – 12 mm	szerokok. 76,1° x 55,8° (poz. x pion.) teleob. 23,8° x 17,9° (poz. x pion.)

Parametry mechaniczne

Przepust kabla	przez tylną część
Montaż	płaski w wyłobionej powierzchni przy pomocy 3 śrub w puszcze elektrycznej 4S
Zakres regulacji	obrót 360°, pochylenie 90°, azymut +/-90°
Kopułka	poliwęglanowa, przezroczysta, nieprzepuszczająca promieniowania UV, pokrycie zapobiegające zarysowaniu
Pierścień ozdobny	modele wandaloodporne: aluminium modele standardowe: poliwęglan
Kolor	biały (RAL9010) pierścień ozdobny z czarną wkładką maskującą
Wymiary	p. rysunki
Masa	740 g

Parametry środowiskowe

Temperatura pracy	
VDC-455 i VDM-355	-50 ÷ +50°C (z grzejnikiem)
VDC-445 i VDM-345	-10 ÷ +45°C
Temperatura przechowywania	-40 ÷ +70°C
Wilgotność względna	5 – 93%
Ochrona przed uderzeniami	IEC 60068-2-75 test Eh, 50J; EN 50102, przekracza wymagania IK10 (modele VDC-455 i VDM-355)

Informacje do zamówień

Model i opis

VDM-345V03-10 monochromatyczny do zastosowań wewnętrznych 1/3", monochromatyczny CCIR, 570 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 2,6 - 6 mm, F1.4, kolor biały
VDM-345V03-20 monochromatyczny do zastosowań wewnętrznych 1/3", monochromatyczny EIA, 570 linii TV, 12 VDC / 24 VAC, 60 Hz, obiektyw zmiennoogniskowy 2,6 - 6 mm, F1.4, kolor biały
VDM-345V04-10 monochromatyczny do zastosowań wewnętrznych 1/3", monochromatyczny CCIR, 570 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 4 - 9 mm, F1.6, kolor biały
VDM-345V04-20 monochromatyczny do zastosowań wewnętrznych 1/3", monochromatyczny EIA, 570 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 4 - 9 mm, F1.6, kolor biały
VDC-445V03-10 kolorowy do zastosowań wewnętrznych 1/3", kolorowy PAL, 540 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 2,6 - 6 mm, F1.4, kolor biały
VDC-445V03-20 model kolorowy do zastosowań wewnętrznych 1/3", kolorowy NTSC, 540 linii TV, 12 VDC / 24 VAC, 60 Hz, obiektyw zmiennoogniskowy 2,6 - 6 mm, F1.4, kolor biały
VDC-445V04-10 kolorowy do zastosowań wewnętrznych 1/3", kolorowy PAL, 540 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 4 - 9 mm, F1.6, kolor biały

Informacje do zamówień

Model i opis

VDC-445V04-20 kolorowy do zastosowań wewnętrznych

1/3", kolorowy NTSC, 540 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 4 - 9 mm, F1.6, kolor biały

VDM-355V03-10 monochromatyczny, wandaloodporny

1/3", monochromatyczny CCIR, 570 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 2,6 - 6 mm, F1.4, kolor biały

VDM-355V03-20 monochromatyczny, wandaloodporny

1/3", monochromatyczny EIA, 570 linii TV, 12 VDC / 24 VAC, 60 Hz, obiektyw zmiennoogniskowy 2,6 - 6 mm, F1.4, kolor biały

VDM-355V04-10 monochromatyczny, wandaloodporny

1/3", monochromatyczny CCIR, 570 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 3,7 - 12 mm, F1.6, kolor biały

VDM-355V04-20 monochromatyczny, wandaloodporny

1/3", monochromatyczny EIA, 570 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 3,7 - 12 mm, F1.6, kolor biały

VDC-455V03-10 kolorowy, wandaloodporny

1/3", kolorowy PAL, 540 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 2,6 - 6 mm, F1.4, kolor biały

VDC-455V03-20 kolorowy, wandaloodporny

1/3", kolorowy NTSC, 540 linii TV, 12 VDC / 24 VAC, 60 Hz, obiektyw zmiennoogniskowy 2,6 - 6 mm, F1.4, kolor biały

VDC-455V04-10 kolorowy, wandaloodporny

1/3", kolorowy PAL, 540 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 3,7 - 12 mm, F1.6, kolor biały

VDC-455V04-20 kolorowy, wandaloodporny

1/3", kolorowy NTSC, 540 linii TV, 12 VDC / 24 VAC, 50 Hz, obiektyw zmiennoogniskowy 3,7 - 12 mm, F1.6, kolor biały

Akcesoria

VDA-445SMB

Puszka do montażu powierzchniowego, zastosowania wewnętrzne, FlexiDomeVF

VDA-455SMB

Puszka do montażu powierzchniowego, wandaloodporna, FlexiDomeXT+

VDA-455UTP

Transceiver do przesyłania sygnału po skrętce nieekranowanej

VDA-445WMT

Wysięgnik do montażu ściennego

VDA-455PMT

Montaż podwieszany na rurze

VDA-455CMT

Wspornik do montażu narożnego w wewnętrznych narożnikach

VP-CFGSFT

Oprogramowanie konfiguracyjne, łącznie z interfejsem VP-USB do obsługi w technologii Bilinix

S1460

Kable do monitora serwisowego (złącze 2,5 mm na BNC), 1 m

TC220PSX-24 Zasilacz sieciowy

230 VAC / 20 VAC, 50 Hz, 20 VA

TC220PS Zasilacz sieciowy

230 VAC / 15 VDC, 50 Hz, 10 VA

TC1334 Zasilacz sieciowy

120 VAC / 24 VAC, 60 Hz, 30 VA

TC24PS Zasilacz sieciowy

24 VAC / 15 VAC, 50 / 60 Hz, 9 VA

Robert Bosch Sp. z o.o.

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www.boschsecurity.pl

Przedstawiciel handlowy:


BOSCH

Invented for life

UPA Power Supplies/Transformers



- Provides efficient, constant power for CCD and MegaPixel cameras, keyboards and other low power usage products
- Models are exceptionally energy efficient
- Meet or exceed International Energy Efficiency Level IV requirements
- 24 VAC and 12 VDC secondary output models
- Screw terminals for ease of installation on some models
- 120 VAC and 230 VAC power source models
- Safety agency certified

The Bosch UPA Series of Power Supplies is designed specifically for the continual use demands of professional surveillance products. While UPA models are used primarily with security cameras, their small size and high energy efficiency rating also make them ideal for powering a wide range of other low power security products, including many Allegiant® system accessories and control devices.

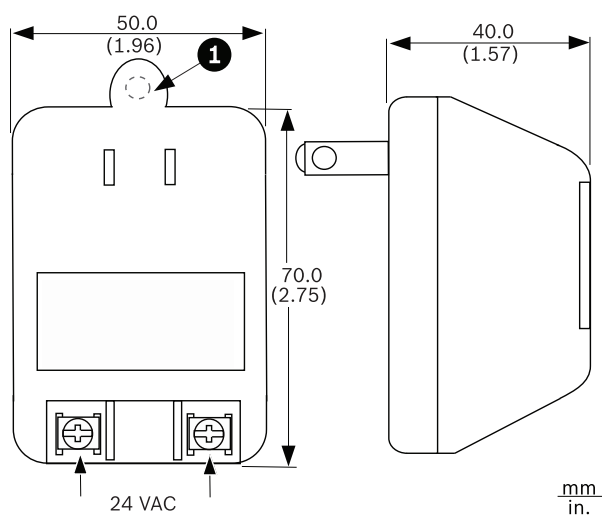
The UPA 60 Hz models are designed specifically to meet the strict efficiency standards and laws being adopted in the United States. These efficient power supplies meet or exceed the International Energy Efficiency Level IV requirements.

Certifications and Approvals

Electromagnetic Compatibility (EMC)	Complies with FCC Part 15, ICES-003, and CE regulations
Product Safety	Complies with CE regulations, UL, CSA, EN, and IEC standards
Energy Efficiency	Meets Energy Efficiency Level IV

Technical Specifications

Model No.	Rated Input	Rated Output
UPA-2410-60	120 VAC, 60 Hz	24 VAC, 60 Hz, 10 VA
UPA-2430-60	120 VAC, 60 Hz	24 VAC, 1.25 A, 30 VA
UPA-12300-60	120 VAC, 60 Hz	12 VDC, 300 mA
TC1382	24 VAC, 50/60 Hz	24 VAC, 50/60 Hz, 7 VA
UPA-2420-50	220-240 V, 50 Hz	24 V, 20 VA
UPA-2450-60	120 VAC, 60 Hz	24 VAC, 60 Hz, 50 VA
UPA-2450-50	230 VAC, 50 Hz	24 VAC, 50 VA
UPA-1220-60	100-240 VAC, 50/60 Hz	12 VDC, 1A, regulated
UPA-1220-50	100-240 VAC, 50/60 Hz	12 VDC, 1A, regulated
UPA-1509-60	120 VAC, 60 Hz	15 VDC, 600 mA
UPA-1509-50	220-240 VAC, 50/60 Hz	15 VDC, 600 mA

UPA-2410-60*UPA-2410-60 Power Supply*

1 Legacy mounting tab

Electrical

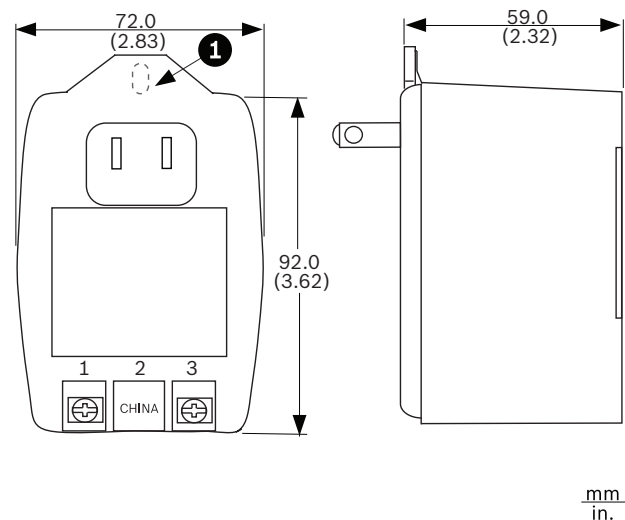
Rated Input	120 VAC, 60 Hz
Rated Output	24 VAC, 60 Hz, 10 VA

Mechanical

Input Connectors	2-prong, North American standard (non-polarized)
Output Connectors	Two (2) screw terminals
Construction/Finish	Black plastic case
Dimensions (W x D x H)	50 x 40 x 70 mm (1.96 x 1.57 x 2.75 in.)
Weight	0.25 kg (0.56 lb)
Recommended Use	24 VAC compact CCD cameras

Environmental

Operating Temperature	-10°C to 40°C (14°F to 104°F)
Storage Temperature	-30°C to 75°C (-22°F to 167°F)
Humidity	30% to 85% relative

UPA-2430-60*UPA-2430-60 Power Supply*

1 Legacy mounting tab

Electrical

Rated Input	120 VAC, 60 Hz
Rated Output	24 VAC, 1.25 A, 30 VA

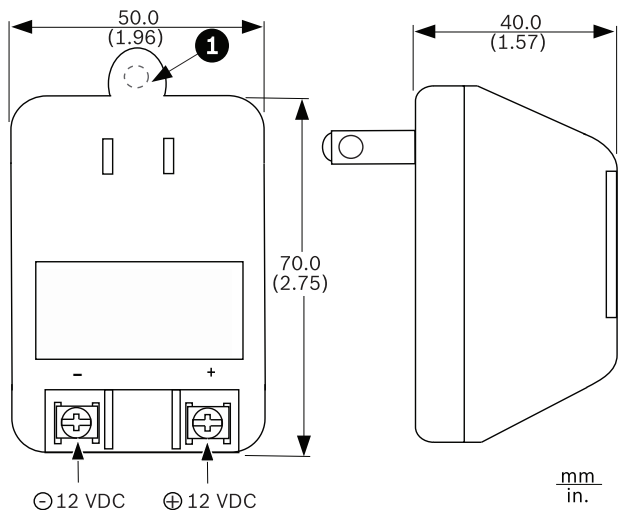
Mechanical

Input Connectors	2-prong, North American standard (non-polarized)
Output Connectors	Two (2) screw terminals
Construction/Finish	Black plastic case
Dimensions (W x D x H)	66.5 x 56.5 x 91.5 mm (2.62 x 2.22 x 3.60 in.)
Weight	0.58 kg (1.28 lb)
Recommended Use	Medium power box cameras

Environmental

Operating Temperature	-10°C to 40°C (14°F to 104°F)
Storage Temperature	-30°C to 80°C (-22°F to 176°F)
Humidity	30% to 85% relative

UPA-12300-60



UPA-12300-60 Power Supply

1 Legacy mounting tab

Electrical

Rated Input	120 VAC, 60 Hz
Rated Output	12 VDC, 300 mA

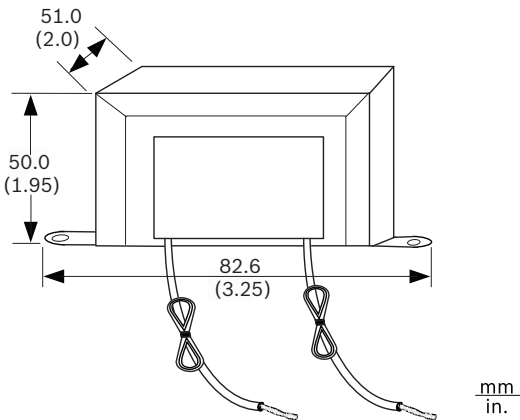
Mechanical

Input Connectors	2-prong, North American standard (non-polarized)
Output Connectors	Two (2) screw terminals
Construction/Finish	Black plastic case
Dimensions (W x D x H)	50 x 40 x 70 mm (1.96 x 1.57 x 2.75 in.)
Weight	0.20 kg (0.44 lb)
Recommended Use	Bosch Flexidome camera series (low power models only – no heater, no IP)

Environmental

Operating Temperature	-10°C to 40°C (14°F to 104°F)
Storage Temperature	-30°C to 75°C (-22°F to 167°F)
Humidity	30% to 85% relative

TC1382 Isolation Transformer



TC1382 Isolation Transformer

Electrical

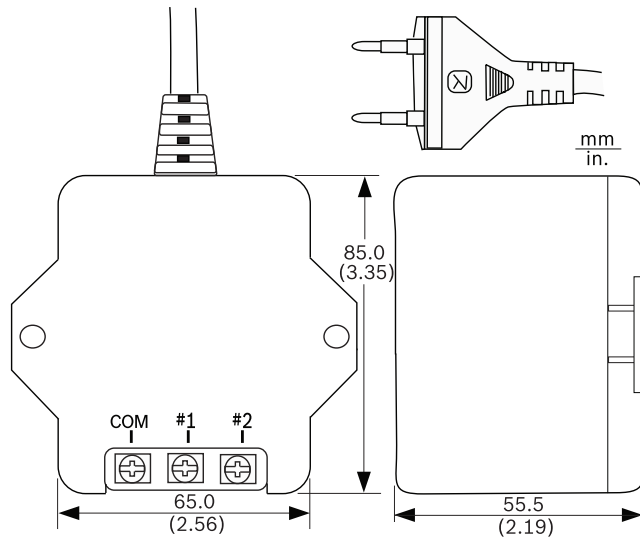
Rated Input	24 VAC, 50/60 Hz
Rated Output	24 VAC, 50/60 Hz, 7 VA

Mechanical

Input Connectors	Black wire leads, 203 mm (8 in.)
Output Connectors	Brown wire leads, 203 mm (8 in.)
Construction/Finish	Uncased
Dimensions (W x D x H)	82.6 x 51 x 50 mm (3.25 x 2 x 1.95 in.)
Weight	0.45 kg (1 lb)
Recommended Use	24 VAC isolation of low powered box cameras

Environmental

Operating Temperature	-10°C to 40°C (14°F to 104°F)
Storage Temperature	-30°C to 80°C (-22°F to 176°F)
Humidity	30% to 85% relative

UPA-2420-50*UPA-2420-50 Power Supply***Electrical**

Rated Input	220-240 V, 50 Hz
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Rated Output	24 V, 20 VA
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Mechanical

Input Connectors	2-prong, European Europlug standard (4 mm / 19 mm)
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Output Connectors	Three (3) screw terminals
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Construction/Finish	Black plastic case
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Dimensions (W x D x H)	65.0 x 55.5 x 85.0 mm (2.56 x 2.19 x 3.35 in.)
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Weight	0.78 kg (1.72 lb)
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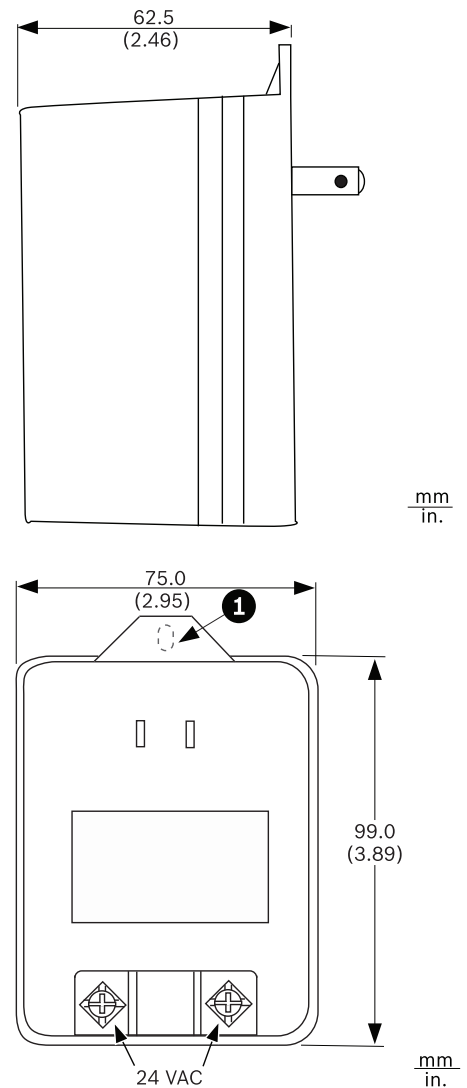
Recommended Use	Medium power box cameras
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Environmental

Operating Temperature	-10°C to 40°C (14°F to 104°F)
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Storage Temperature	-30°C to 80°C (-22°F to 176°F)
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Humidity	30% to 85% relative
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UPA-2450-60*UPA-2450-60 Power Supply*

1 Legacy mounting tab

Electrical

Rated Input	120 VAC, 60 Hz
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Rated Output	24 VAC, 50 VA
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Mechanical

Input Connectors	2-prong, North American standard (non-polarized)
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Output Connectors	Two (2) screw terminals
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Construction/Finish	Black plastic case
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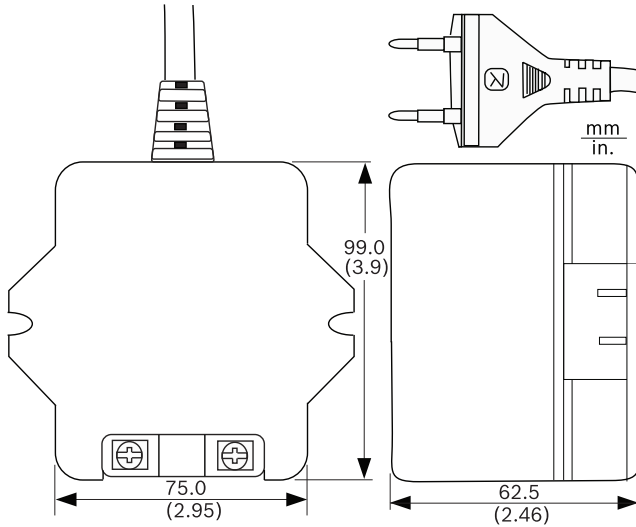
Dimensions (W x D x H)	75.0 x 62.5 x 99.0 mm (2.95 x 2.46 x 3.89 in.)
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Weight	0.84 kg (1.86 lb)
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Recommended Use	Bosch KBE Series pre-package cameras
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Environmental

Operating Temperature	–10°C to 40°C (14°F to 104°F)
Storage Temperature	–30°C to 80°C (–22°F to 176°F)
Humidity	30% to 85% relative

UPA-2450-50*UPA-2450-50 Power Supply***Electrical**

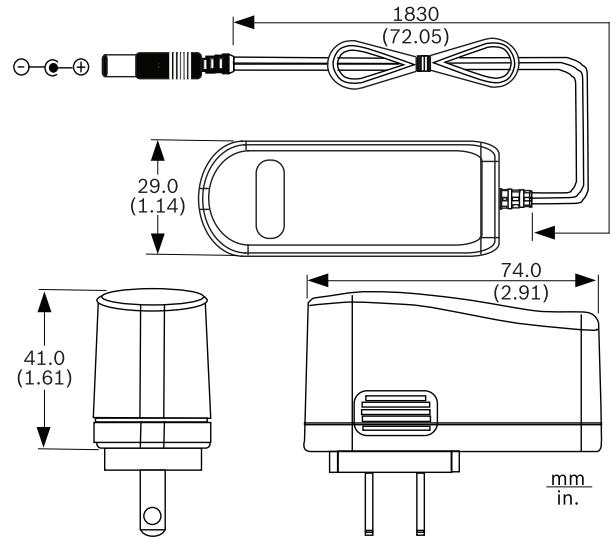
Rated Input	230 VAC, 50 Hz
Rated Output	24 VAC, 50 VA

Mechanical

Input Connectors	2-prong, European Europlug standard (4 mm / 19 mm)
Output Connectors	Two (2) screw terminals
Construction/Finish	Black plastic case
Dimensions (W x D x H)	75 x 62.5 x 99.0 mm (2.95 x 2.46 x 3.9 in.)
Weight	1.16 kg (2.56 lb)
Recommended Use	Bosch KBE Series pre-package camera

Environmental

Operating Temperature	–10°C to 40°C (14°F to 104°F)
Storage Temperature	–30°C to 75°C (–22°F to 167°F)
Humidity	30% to 85% relative

UPA-1220-60*UPA-1220-60 Power Supply***Electrical**

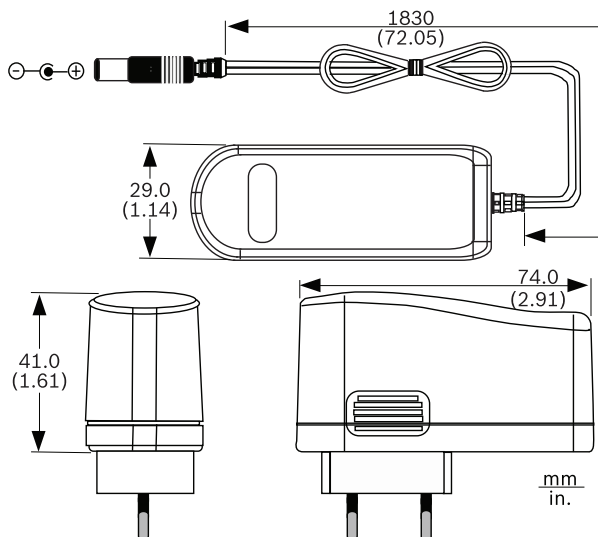
Rated Input	100-240 VAC, 50/60 Hz
Rated Output	12 VDC, 1.0 A, regulated

Mechanical

Input Connectors	2-prong, North American standard (non-polarized)
Output Connectors	2.1 x 5.5 x 10.0 mm plug (0.8 x 0.22 x 0.4 in.)
Construction/Finish	Black plastic case
Dimensions (W x D x H)	74.0 x 29.0 x 41.0 mm (2.91 x 1.14 x 1.61 in.)
Weight	0.12 kg (0.26 lb)
Recommended Use	Bosch megapixel cameras

Environmental

Operating Temperature	–10°C to 40°C (14°F to 104°F)
Storage Temperature	–30°C to 80°C (–22°F to 176°F)
Humidity	30% to 85% relative

UPA-1220-50*UPA-1220-50 Power Supply***Electrical**

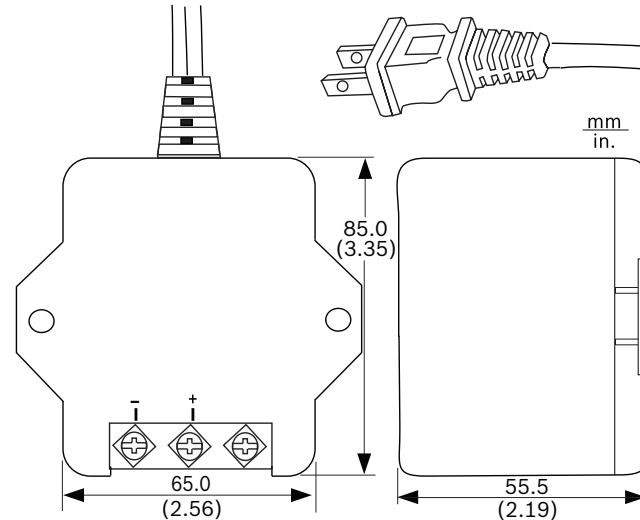
Rated Input	100-240 VAC, 50/60 Hz
Rated Output	12 VDC, 1.0 A, regulated

Mechanical

Input Connectors	2-prong, European Europlug standard (4 mm / 19 mm)
Output Connectors	2.1 x 5.5 x 10.0 mm plug (0.8 x 0.22 x 0.4 in.)
Construction/Finish	Black plastic case
Dimensions (W x D x H)	74.0 x 29.0 x 41.0 mm (2.91 x 1.14 x 1.61 in.)
Weight	0.12 kg (0.26 lb)
Recommended Use	Bosch megapixel cameras

Environmental

Operating Temperature	-10°C to 40°C (14°F to 104°F)
Storage Temperature	-30°C to 80°C (-22°F to 176°F)
Humidity	30% to 85% relative

UPA-1509-60*UPA-1509-60 Power Supply***Electrical**

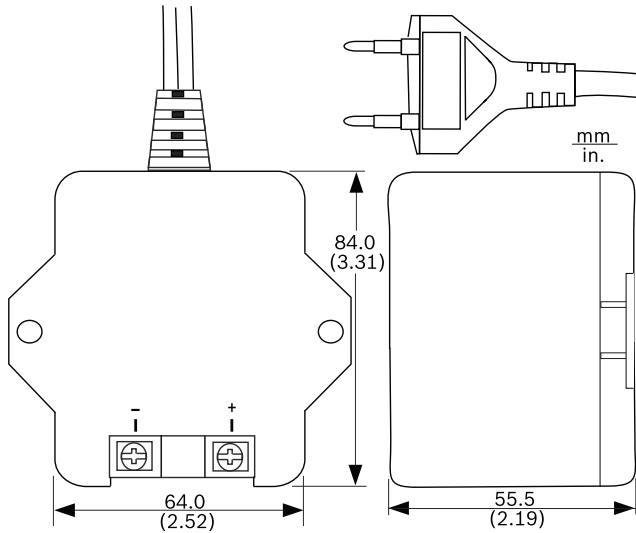
Rated Input	120 VAC, 60 Hz
Rated Output	15 VDC, 600 mA

Mechanical

Input Connectors	2-prong, North American standard (non-polarized)
Output Connectors	Three (3) screw terminals
Construction/Finish	Black plastic case
Dimensions (W x D x H)	64.7 x 53.8 x 84.7 mm (2.55 x 2.12 x 3.33 in.)
Weight	0.66 kg (1.46 lb)
Recommended Use	Bosch IntuiKey Series keyboards, LTC 8786 Series converters, LTC 8782 Series translators, LTC 8557 Series extension kits

Environmental

Operating Temperature	-10°C to 40°C (14°F to 104°F)
Storage Temperature	-30°C to 70°C (-22°F to 158°F)
Humidity	35% to 85% relative

UPA-1509-50

UPA-1509-50 Power Supply

Electrical

Rated Input	220-240 VAC, 50/60 Hz
Rated Output	15 VDC, 600 mA

Mechanical

Input Connectors	2-prong, European Europlug standard (4 mm / 19 mm)
Output Connectors	Three (3) screw terminals
Construction/Finish	Black plastic case
Dimensions (W x D x H)	64.7 x 53.8 x 84.7 mm (2.55 x 2.12 x 3.33 in.)
Weight	0.66 kg (1.46 lb)
Recommended Use	Bosch IntuiKey Series keyboards, LTC 8786 Series converters, LTC 8782 Series translators, LTC 8557 Series extension kits

Environmental

Operating Temperature	-10°C to 40°C (14°F to 104°F)
Storage Temperature	-30°C to 80°C (-22°F to 176°F)
Humidity	30% to 85% relative

Ordering Information

UPA-2410-60 Power Supply 120VAC, 60Hz, 24VAC, 10VA Out	UPA-2410-60
UPA-2430-60 Power Supply 120VAC, 60Hz, 24VAC, 30VA Out	UPA-2430-60
UPA-12300-60 Power Supply 120VAC, 60Hz, 12VDC, 300mA Out	UPA-12300-60
TC1382 Isolation Transformer 24VAC, 7VA	TC1382

Ordering Information

UPA-2420-50 Power Supply 220VAC, 50Hz, 24VAC, 20VA Out	UPA-2420-50
UPA-2450-60 Power Supply 120VAC, 60Hz, 24VAC, 50VA Out	UPA-2450-60
UPA-2450-50 Power Supply 220VAC, 50Hz, 24VAC, 50VA Out	UPA-2450-50
UPA-1220-60 Power Supply 120VAC, 60Hz, 12VDC, 1A Out, regulated	UPA-1220-60
UPA-1220-50 Power Supply 220VAC, 50Hz, 12VDC, 1A Out, regulated	UPA-1220-50
UPA-1509-60 Power Supply 120VAC, 60Hz, 15VDC, 9VA Out	UPA-1509-60
UPA-1509-50 Power Supply 220VAC, 50Hz, 15VDC, 9VA Out	UPA-1509-50

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