

PowerSync High Definition Synchronizer

Operating Manual

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Explanation of Safety Symbols

GB

-  This symbol refers the user to important information contained in the accompanying literature. Refer to manual.
-  This symbol indicates that hazardous voltages are present inside. No user serviceable parts inside. This unit should only be serviced by trained personnel.

Safety Warnings



Servicing instructions where given, are for use by qualified service personnel only. To reduce risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified personnel.

- To reduce the risk of electric shock, do not expose this appliance to rain or moisture.
- Always ensure that the unit is properly earthed and power connections correctly made.
- This equipment must be supplied from a power system providing a PROTECTIVE EARTH (⊕) connection and having a neutral connection which can be reliably identified.
- The power outlet supplying power to the unit should be close to the unit and easily accessible


Power connection in countries other than the USA

The equipment is normally shipped with a power cable with a standard IEC moulded free socket on one end and a standard IEC moulded plug on the other. If you are required to remove the moulded mains supply plug, dispose of the plug immediately in a safe manner.

The colour code for the lead is as follows:



- GREEN/YELLOW lead connected to E (Protective Earth Conductor)
- BLUE lead connected to N (Neutral Conductor)
- BROWN lead connected to L (Live Conductor)



-  Caution If the unit has two mains supply inputs ensure that both power cords are plugged into mains outlets operating from the same phase.

Légende :

F

-  Ce symbole indique qu'il faut prêter attention et se référer au manuel.
-  Ce symbole indique qu'il peut y avoir des tensions électriques à l'intérieur de l'appareil. Ne pas intervenir sans l'agrément du service qualifié.

Précaution d'emploi :



Les procédures de maintenance ne concernent que le service agréé. Afin de réduire le risque de choc électrique, il est recommandé de se limiter aux procédures d'utilisation, à moins d'en être qualifié. Pour toute maintenance, contacter le service compétent.

- Pour réduire le risque de choc électrique, ne pas exposer l'appareil dans un milieu humide.
- Toujours s'assurer que l'unité est correctement alimentée, en particuliers à la liaison à la terre.
- La source électrique de cet équipement doit posséder une connexion à la terre (⊕), ainsi qu'une liaison « neutre » identifiable.
- La prise électrique qui alimente l'appareil doit être proche de celle-ci et accessible.


Câble secteur de pays autres que les Etats-Unis

L'équipement est livré avec un câble secteur au standard IEC, moulé mâle/femelle.

Si vous souhaitez changer la prise mâle de votre cordon, voici les codes couleurs des fils :



- Le fil VERT/JAUNE est connecté à T (Terre)
- Le fil BLEU est connecté à N (Neutre)
- Le fil MARRON est connecté à P (Phase)



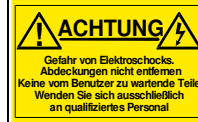
-  Attention si l'appareil a 2 alimentations, s'assurer que les cordons soient branchés sur la même phase.

Erklärung der Sicherheitssymbole

D

-  Dieses Symbol weist den Benutzer auf wichtige Informationen hin, die in der begleitenden Dokumentation enthalten sind.
-  Dieses Symbol zeigt an, dass gefährliche Spannung vorhanden ist. Es befinden sich keine vom Benutzer zu wartenden Teile im Geräteinneren. Dieses Gerät sollte nur von geschultem Personal gewartet werden

Sicherheits-Warnhinweise



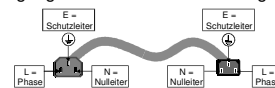
Die angeführten Service-/Reparatur-Anweisungen sind ausschließlich von qualifiziertem Service-Personal auszuführen. Um das Risiko eines lektroschocks zu reduzieren, führen Sie ausschließlich die im Benutzerhandbuch eschriebenen Anweisungen aus, es sei denn, Sie haben die entsprechende Qualifikation. Wenden Sie sich in allen Service-Fragen an qualifiziertes Personal.


- Um das Risiko eines Elektroschocks zu reduzieren, setzen Sie das Gerät weder Regen noch Feuchtigkeit aus.
- Stellen Sie immer sicher, dass das Gerät ordnungsgemäß geerdet und verkabelt ist.
- Dieses Equipment muss an eine Netzsteckdose mit Schutzleiter angeschlossen werden und einen zuverlässig identifizierbaren Nulleiter haben.
- Die Netzsteckdose sollte nahe beim Gerät und einfach zugänglich sein.

Netzanschluss in anderen Ländern als der USA

Das Equipment wird im Normalfall mit einem Netzkabel mit Standard IEC Anschlussbuchse und einem Standard IEC Anschlussstecker geliefert. Sollten Sie den angeschweißten Stecker auswechseln müssen, entsorgen Sie diesen bitte umgehend. Die farbliche Belegung des Netzkabels ist wie folgt:



- GRÜN GELB E = Schutzleiter (⊕)
- BLAU N = Nulleiter
- BRAUN L = P = Phase



-  Achtung: Wenn das Gerät zwei Anschlussbuchsen hat, stellen Sie bitte sicher, dass beide Netzkabel mit der selben Phase in die Netzsteckdose gesteckt werden.

Explicación de los Símbolos de Seguridad

ESP

-  Éste símbolo refiere al usuario información importante contenida en la literatura incluida. Referirse al manual.
-  Éste símbolo indica que voltajes peligrosos están presentes en el interior. No hay elementos accesibles al usuario dentro. Esta unidad sólo debería ser tratada por personal cualificado.

Advertencias de Seguridad



Las instrucciones de servicio cuando sean dadas, son sólo para uso de personal cualificado. Para reducir el riesgo de choque eléctrico no llevar a cabo ninguna operación de servicio aparte de las contenidas en las instrucciones de operación, a menos que se esté cualificado para realizarlas.

Referir todo el trabajo de servicio a personal cualificado.


- Para reducir el riesgo de choque eléctrico, no exponer este equipo a la lluvia o humedad.
- Siempre asegurarse de que la unidad está propiamente conectada a tierra y que las conexiones de alimentación están hechas correctamente.
- Este equipo debe ser alimentado desde un sistema de alimentación con conexión a TIERRA (⊕) y teniendo una conexión neutra fácilmente identificable.
- La toma de alimentación para la unidad debe ser cercana y fácilmente accesible.

Conexión de alimentación en otros países que no sean USA

El equipo es normalmente entregado con un cable de alimentación con un enchufe hembra estándar IEC en un extremo y con una clavija estándar IEC en el otro. Si se requiere eliminar la clavija para sustituirla por otra, disponer dicha clavija de una forma segura. El código de color a emplear es como sigue:

- VERDE/ AMARILLO conectado a E (Conductor de protección a Tierra -Earth en el original-)
- AZUL conectado a N (Conductor Neutro -Neutral en el original-)
- MARRÓN conectado a L (Conductor Fase -Live en el original-)



-  Advertencia Si la unidad tuviera dos tomas de alimentación, asegurarse de que ambos cables de alimentación están conectados a la misma fase.

Simboli di sicurezza:

Questo simbolo indica l'informazione importante contenuta nei manuali appartenenti all'apparecchiatura. Consultare il manuale.

Questo simbolo indica che all'interno dell'apparato sono presenti tensioni pericolose. Non cercare di smontare l'unità. Per qualsiasi tipo di intervento rivolgersi al personale qualificato.

Attenzione:

Le istruzioni relative alla manutenzione sono ad uso esclusivo del personale qualificato. E' proibito all'utente eseguire qualsiasi operazione non esplicitamente consentita nelle istruzioni. Per qualsiasi informazione rivolgersi al personale qualificato.

- Per prevenire il pericolo di scosse elettriche è necessario non esporre mai l'apparecchiatura alla pioggia o a qualsiasi tipo di umidità.
- Assicurarsi sempre, che l'unità sia propriamente messa a terra e che le connessioni elettriche siano eseguite correttamente.
- Questo dispositivo deve essere collegato ad un impianto elettrico dotato di un sistema di messa a terra efficace.
- La presa di corrente deve essere vicina all'apparecchio e facilmente accessibile.

Connessione elettrica nei paesi diversi dagli Stati Uniti

L'apparecchiatura normalmente è spedita con cavo pressofuso con la presa e spina standard IEC. Nel caso della rimozione della spina elettrica, gettarla via immediatamente osservando tutte le precauzioni del caso. La leggenda dei cavi è la seguente:

VERDE/GIALLO cavo connesso ad "E" (terra)
BLU cavo connesso ad "N" (neutro)
MARRONE cavo connesso ad "L" (fase)



Attenzione! Nel caso in cui l'apparecchio abbia due prese di corrente, assicurarsi che i cavi non siano collegati a fasi diverse della rete elettrica.

Förklaring av Säkerhetssymboler

Denna symbol hänvisar användaren till viktig information som återfinns i litteraturen som medföljer. Se manualen.

Denna symbol indikerar att livsfarlig spänning finns på insidan. Det finns inga servicevänliga delar inne i apparaten. Denna apparat få endast repareras av utbildad personal.

Säkerhetsvarningar

Serviceinstruktioner som anges avser endast kvalificerad och utbildad servicepersonal. För att minska risken för elektrisk stöt, utför ingen annan service än den som återfinns i medföljande driftinstruktionerna, om du ej är behörig. Överlåt all service till kvalificerad personal.

- För att reducera risken för elektrisk stöt, utsätt inte apparaten för regn eller fukt.
- Se alltid till att apparaten är ordentligt jordad samt att strömtillförseln är korrekt utförd.
- Denna apparat måste bli försörd från ett strömssystem som är försedd med jordanslutning (⊕) samt ha en neutral anslutning som lätt identifierbar.
- Väggtaget som strömförsörjer apparaten bör finnas i närheten samt vara lättillgänglig.

Strömkontakter i länder utanför USA

Apparaten utrustas normalt med en strömkabel med standard IEC gjuten honkontakt på ena änden samt en standard IEC gjuten hankontakt på den andra änden. Om man måste avlägsna den gjutna hankontakten, avyttra denna kontakt omedelbart på ett säkert sätt. Färgkoden för ledningen är följande:

GRÖN/GUL ledning ansluten till E (Skyddsjordad ledare)

BLÅ ledning ansluten till N (Neutral ledare)
BRUN ledning ansluten till L (Fas ledare)



Varning! Om enheten har två huvudsakliga elförsörjningar, säkerställ att båda strömkablarna som är inkopplade i enheten arbetar från samma fas.

Forklaring på sikkerhedssymboler

Dette symbol gør brugeren opmærksom på vigtig information i den medfølgende manual.

Dette symbol indikerer farlig spænding inden i apparatet. Ingen bruger servicebare dele i apparatet på brugerniveau. Dette apparat må kun serviceres af faglærte personer..

Sikkerhedsadvarsler

Serviceinstruktioner er kun til brug for faglærte servicefolk. For at reducere risikoen for elektrisk stød må bruger kun udføre anvisninger i betjeningsmanualen. Al service skal udføres af faglærte personer.

- For at reducere risikoen for elektrisk stød må apparatet ikke udsættes for regn eller fugt.
- Sørg altid for at apparatet er korrekt tilsluttet og jordet.
- Dette apparat skal forbindes til en nettilslutning, der yder BESKYTTENDE JORD (⊕) og 0 forbindelse skal være tydeligt markeret.
- Stikkontakten, som forsyner apparatet, skal være tæt på apparatet og let tilgængelig.

Nettilslutning i andre lande end USA

Udstyret leveres normalt med et strømkabel med et standard IEC støbt løst hunstik i den ene ende og et standard IEC støbt hanstik i den anden ende. Hvis et af de støbte stik på strømkablet er defekt, skal det straks kasseres på forsvarlig vis. Farvekoden for ledningen er som følger:

GRØN/GUL leder forbundet til J (Jord)
BLÅ leder forbundet til 0
BRUN leder forbundet til F (Fase)



Forsigtig! Hvis enheden har to lysnetindgange, skal der sørges for at begge ledninger tilsluttes lystnetudgange fra den samme fase.

Turvamerkkien selitys

Tämä merkki tarkoittaa, että laitteen mukana toimitettu kirjallinen materiaali sisältää tärkeitä tietoja. Lue käyttöohje.

Tämä merkki ilmoittaa, että laitteen sisällä on vaarallisen voimakas jännite. Sisäpuolella ei ole mitään osia, joita käyttäjä voisi itse huoltaa. Huollon saa suorittaa vain alan ammattilainen.

Turvaohjeita

Huolto-ohjeet on tarkoitettu ainoastaan alan ammattilaisille. Älä suorita laitteelle muita toimenpiteitä, kuin mitä käyttöohjeissa on neuvottu, ellei ole asiantuntija. Voit saada sähköiskun. Jätä kaikki huoltotoimet ammattilaiselle.

- Sähköiskujen välttämiseksi suojaa laite sateelta ja kosteudelta.
- Varmistu, että laite on asianmukaisesti maadoitettu ja että sähkökytkennät on tehty oikein.
- Laitteelle tehoa syöttävässä järjestelmässä tulee olla SUOJAMAALIITÄNTÄ (⊕) ja nolllaliitännän on oltava luotettavasti tunnistettavissa.
- Sähköpistorasian tulee olla laitteen lähellä ja helposti tavoitettavissa.

Sähkökytkentä

Laitteen vakiovarusteena on sähköjohto, jonka toisessa päässä on muottiin valettu, IEC-standardin mukainen liitäntärasia ja toisessa päässä muottiin valettu, IEC-standardin mukainen pistoliitin. Jos pistoliitin tarvitsee poistaa, se tulee hävittää heti turvallisella tavalla. Johtimet kytketään seuraavasti:

KELTA-VIHREÄ suojamaajohtoin E-napaan
SININEN nolllajohtoin N-napaan
RUSKEA vaihejohtoin L-napaan



Huom! Jos laitteessa on kaksi verkkojännitteen tuloliitäntää, niiden johdot on liitettävä verkkopistorasioihin, joissa on sama vaiheistus.

Símbolos de Segurança



- O símbolo triangular avverte para a necessidade de consultar o manual antes de utilizar o equipamento ou efectuar qualquer ajuste.
- Este símbolo indica a presença de voltagens perigosas no interior do equipamento. As peças ou partes existentes no interior do equipamento não necessitam de intervenção, manutenção ou manuseamento por parte do utilizador. Reparações ou outras intervenções devem ser efectuadas apenas por técnicos devidamente habilitados.

Avisos de Segurança



As instruções de manutenção fornecidas são para utilização de técnicos qualificados. Para reduzir o risco de choque eléctrico, não devem ser realizadas intervenções no equipamento não especificadas no manual de instalações a menos que seja efectuadas por técnicos habilitados.

- Para reduzir o risco de choque eléctrico, não expor este equipamento à chuva ou humidade.
- Assegurar que a unidade está sempre devidamente ligada à terra e que as ligações à alimentação estão correctas.
- O sistema de alimentação do equipamento deve, por razões de segurança, possuir ligação a terra de protecção (⊕) e ligação ao NEUTRO devidamente identificada.
- A tomada de energia à qual a unidade está ligada deve situar-se na sua proximidade e facilmente acessível.

Ligação da alimentação noutros países que não os EUA

O equipamento é, normalmente, enviado com cabo de alimentação com ficha IEC fêmea standard num extremo e uma ficha IEC macho standard no extremo oposto. Se for necessário substituir ou alterar alguma destas fichas, deverá remove-la e elimina-la imediatamente de maneira segura. O código de cor para os condutores é o seguinte:

- Conductor VERDE/AMARELO ligado a E (Terra)
- Conductor AZUL ligado a N (Neutro)
- Conductor CASTANHO ligado a L (Vivo).



Atenção: Se a unidade tem duas fontes de alimentação assegurar que os dois cabos de alimentação estão ligados a tomadas pertencentes à mesma fase.

Επεξήγηση των Συμβόλων Ασφαλείας



- Αυτό το σύμβολο παραπέμπει το χρήστη σε σημαντικές πληροφορίες που συμπεριλαμβάνονται στο συνοδευτικό εγχειρίδιο.
- Αυτό το σύμβολο υποδεικνύει ότι στο εσωτερικό υφίστανται επικίνδυνες ηλεκτρικές τάσεις. Στο εσωτερικό δεν υπάρχουν επισκευάσιμα μέρη. Αυτή η μονάδα πρέπει να επισκευάζεται μόνο από ειδικά εκπαιδευμένο προσωπικό.

Προειδοποίηση Ασφαλείας



Οδηγίες επισκευής, όπου παρέχονται, αναφέρονται αποκλειστικά και μόνο σε εξειδικευμένο προσωπικό. Για να μειωθεί ο κίνδυνος ηλεκτροπληξίας, μην εκτελείτε επισκευές παρά μόνο τις συμπεριλαμβανόμενες στο εγχειρίδιο των οδηγιών, εκτός και αν έχετε τα απαραίτητα προσόντα για να το κάνετε. Όλες οι επισκευές να εκτελούνται από ειδικά εκπαιδευμένο προσωπικό.

- Για να μειώσετε τον κίνδυνο ηλεκτροπληξίας, μην εκθέτετε τη συσκευή σε βροχή ή υγρασία.
- Πάντα να εξασφαλίζετε τη σωστή μείωση της συσκευής και τη σωστή σύνδεση των συνδέσμων τροφοδοσίας.
- Ο εξοπλισμός πρέπει να τροφοδοτείται από ένα σύστημα τροφοδοσίας που να εξασφαλίζει ΠΡΟΣΤΑΤΕΥΤΙΚΗ ΓΕΙΩΣΗ (⊕) και να έχει καθορισμένες θέσεις ουδέτερου και φάσης.
- Ο εξοπλισμός που τροφοδοτεί τη συσκευή θα πρέπει να βρίσκεται κοντά στη συσκευή και να είναι εύκολα προσβάσιμος.

Σύνδεση τροφοδοσίας σε χώρες εκτός των ΗΠΑ

Ο εξοπλισμός συνοδεύεται συνήθως από ένα καλώδιο τροφοδοσίας με ένα σταθερό βύσμα τροφοδοσίας ρεύματος τύπου πυραμίδας στη μια άκρη του και μια σταθερή υποδοχή τροφοδοσίας ρεύματος τύπου πυραμίδας στην άλλη άκρη του. Εάν χρειαστεί να αφαιρέσετε το σταθερό βύσμα τροφοδοσίας μην το επαναχρησιμοποιείτε, θεωρείται άχρηστο. Ο χρωματικός οδηγός για το καλώδιο τροφοδοσίας είναι ο παρακάτω:

- ΠΡΑΣΙΝΟ/ΚΙΤΡΙΝΟ καλώδιο συνδέεται στο E (Προστατευτικός Αγωγός Γείωσης)
- ΜΠΛΕ καλώδιο συνδέεται στο N (Ουδέτερο Αγωγό)
- ΚΑΦΕ καλώδιο συνδέεται στο L (Αγωγός Φάσης)



ΠΡΟΣΟΧΗ! Αν η μονάδα έχει δύο τροφοδοτικά βεραιωθείτε ότι και τα δύο καλώδια τροφοδοσίας είναι συνδεδεμένα σε εφόδους τροφοδοσίας που βρίσκονται στην ίδια φάση.

Products employing Lithium batteries

CAUTION

This equipment contains a lithium battery.

There is a danger of explosion if this is replaced incorrectly.

Replace only with the same or equivalent type.

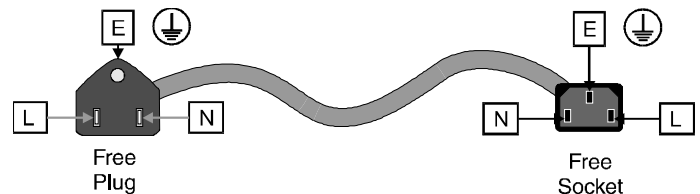
Dispose of used batteries according to the instructions of the manufacturer.

Batteries **shall only** be replaced by trained service technicians.

Power cable supplied for the USA

The equipment is shipped with a power cord with a standard IEC molded free socket on one end and a standard 3-pin plug on the other. If you are required to remove the molded mains supply plug, dispose of the plug immediately in a safe manner. The color code for the cord is as follows:

- GREEN** lead connected to E (Protective Earth Conductor)
- BLACK** lead connected to L (Live Conductor)
- WHITE** lead connected to N (Neutral Conductor)



For products with more than one power supply inlet

Caution: To reduce the risk of electric shock plug each power supply cord into separate branch circuits employing separate service grounds.

- **WARNING! this equipment has a high earth leakage current – earth connection essential before connecting supply**
- **The power outlet supplying power to the unit should be close to the unit and easily accessible**
- **CAUTION! A fully populated system enclosure is heavy. Appropriate manual handling precautions should be taken when lifting and handling, or, if possible, the unit should be unpopulated.**
- **Depending on configuration a populated enclosure may contain laser sources and/or lithium batteries. Refer to the relevant module instruction manuals.**
- **Caution high leakage current. Earth connection essential before connecting supply**

Notices to installer:

- An equipment grounding conductor that is not smaller in size than the undergrounded branch circuit supply conductor, is to be installed as part of the branch circuit that supplies the equipment. Bare, covered or insulated grounding conductors are acceptable. Individually covered or insulated grounding conductors shall have a continuous outer finish that is either green, or green with one or more yellow stripes. The equipment grounding conductor is to be connected to ground at the service equipment.
- The attachment plug receptacles in the vicinity of the equipment are all to be of a grounding type, and the equipment grounding conductors serving these receptacles are to be connected to earth ground at the service equipment.

Rack Mounting the Enclosure



This product must not be rack mounted using only the front rack ears.



When rack-mounting the product, one of the following methods of installation must be used: -

- Place the unit on a suitably specified, and installed rack shelf and secure the product to the rack via the front rack ears or,
- Fit the unit using suitable rear rack mounts such as S&W P/N RMMCW 3560220Z + 8 x RMG1 M5x6PPZC. Both these items are available from Snell & Wilcox by quoting the order code FGACK RACK-MNT-KIT. The rear mounting brackets must be attached using the two M5 threaded inserts on both sides of the product; the maximum length of screw that can be used is M5 x 6mm. Ensure that the product is secured to the rack in all Four Corners.

Safety Standard

This unit conforms to the following standards:

BS EN 60950:1992 Specification for safety of information technology equipment, including electrical business equipment.



EMC Standards

This unit conforms to the following standards:

BS EN 55103-1 : 1997

Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 1. Emission

BS EN 55103-2 : 1997

Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2. Immunity

Federal Communications Commission Rules Part 15, Class A :1998

EMC Environment

The product(s) described in this manual conform to the EMC requirements for, and are intended for use in, *either*

The commercial and light industrial environment (including, for example, theatres) E2

or

The controlled EMC environment (for example purpose-built broadcasting or recording studios), and the rural outdoor environment (far away from railways, transmitters, overhead power lines, etc.) E4

The applicable environment is stated in the Technical Profile section of the product operation manual under "*EMC Performance Information/Environment.*"

EMC Performance Information

Please refer to the *Technical Profile/Specifications* section of the product operation manual.

EMC Performance of Cables and Connectors

Snell & Wilcox products are designed to meet or exceed the requirements of the appropriate European EMC standards. In order to achieve this performance in real installations it is essential to use cables and connectors with good EMC characteristics.

All signal connections (including remote control connections) shall be made with screened cables terminated in connectors having a metal shell. The cable screen shall have a large-area contact with the metal shell.

COAXIAL CABLES

Coaxial cables connections (particularly serial digital video connections) shall be made with high-quality double-screened coaxial cables such as Belden 1694 or BBC type PSF1/2M.

D-TYPE CONNECTORS

D-type connectors shall have metal shells making good RF contact with the cable screen. Connectors having "dimples" which improve the contact between the plug and socket shells, are recommended.

Packing List

All System HD items are supplied in dedicated packing cartons provided by the manufacturer and should not be accepted if delivered in inferior or unauthorised materials. Carefully unpack the cartons and check for any shipping damage or shortages.

Any shortages or damage should be reported to the supplier immediately.

The PowerSync should come with the following items:

- PowerSync mainframe and Passive Front Panel
- 1 Power cable
- PowerSync Enclosure Operators Manual
- PowerSync Enclosure Installation Manual
- SHDSYN High Definition Synchronizer Operators Manual
- SHDSYN High Definition Synchronizer Installation Manual
- Modules as ordered (in separate boxes) with appropriate installation and operating sections for the manual sets.

Information Concerning this Manual

This manual contains information for the installation and configuration of the actual System HD 1U enclosure.

Appropriate manuals are supplied for each module type that has been ordered and these should be included in the file that contains this manual.

Update/revision sheets should replace existing pages when supplied by the agent or Snell & Wilcox Ltd.

Note that the date at the bottom of the page is the release date of the current revision.

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Important Notice

No responsibility is taken by the manufacturer or supplier for any non-compliance to EMC standards due to incorrect installation.

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Product Support Procedure

If you experience any technical or operational difficulties with a Snell & Wilcox product please do not hesitate to contact us or utilize our online form to request assistance.

There is a lot of information you can give us that will enable us to diagnose your problem swiftly. Please read the following guidelines, as these suggestions will help us to help you.

Basic Information

For Units Please provide the exact product Model, unit Serial Number and Software Version information.

For Cards or Modules . Please provide the Sub-Assembly Number, card Serial Number and the Software Version information.

Basic Application

Inputs Please provide full details of the Input Signals being used including any references etc. and where they are being generated.

Outputs Please provide full details of the Output Signals required and how they are being monitored.

System Please provide a brief description of the system in which your S&W equipment is currently being used.

Basic Tests

Preset Unit Please use the Preset Unit function to return the settings back to the factory default.

RollCall Is your unit currently connected to a RollCall capable PC? This software is obtainable for free and provides a very user friendly GUI for virtually all S&W equipment - perfect for complex products, large systems or those with passive front panels.

Card Edge Info. What is the status of the card edge LEDs or display? These can often provide information such as power status and input detection conditions.

Internal TPG Many S&W products have an internal test pattern/tone generator. Please activate this to assist you with your problem analysis.

In addition to the above, please do not forget to provide us with all of the necessary contact information:

- Names
- Telephone & Fax numbers
- e-mail addresses
- Business address

A form has been provided for this information and will be found on the next page or an on-line form is available on the Snell & Wilcox website at:

<http://www.snellwilcox.com/support/request>

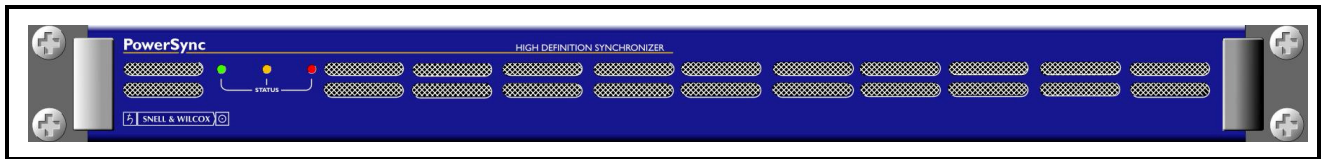
Product Support Request Form

Name: *		
Company:		
Address Details: *		
Post/ZIP Code:		
Country: *		
Telephone: *		
Fax:		
Email: *		
Local S&W Center: *		
Product Name: *		
Product Type: *	Switchers (i.e. Magic DaVE, Switchpack, Kahuna)	
	File & Data Transfer Products (i.e. RollCall, Memphis & iCR)	
	Video Products (i.e. Modular, Kudos Plus and Alchemist)	
Unit Serial Number: *		
Fault/Spare Part Information: * (please advise us how many units show this fault and the system layout showing all other manufacturers' products)		
* Preferred Method of Contact:	e-mail	
	Phone	

- Item is required.

Please mail to: Snell & Wilcox Ltd., Southleigh Park House, Eastleigh Road, Havant, Hants, PO9 2PE. United Kingdom.	Service Contact Information: Tel: +44 (0) 2392 489058 Fax: +44 (0) 2392 489057 http://www.snellwilcox.com/support ftp://ftp.snellwilcox.com/support
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The PowerSync



Introduction

PowerSync is a very compact HD-SDI synchronizer for use in production and transmission applications. It has extremely flexible reference capability accepting SD bi-level and HD tri-level reference signals. Pixel precise genlock adjustment means any timing problems can be accommodated and the firewall function enables a clean output signal, ideal for concealment of router switching glitches. Flexible handling of input loss – pass through or switch to black / patterns / freeze - and integrated video controls make the PowerSync an ideal incoming lines processor. Local configuration can be implemented via the bright LED character display. These are protected in use by the easily removable front panel. Remote configuration is also possible with the optional RollCall adapter. Up to three frame synchronizers may be included in a single 1RU box.

The SHDSYN Synchronizer Card

For full details of the installation and operation of the SHDSYN synchronizer card please refer to the following manuals that are supplied with the PowerSync unit:

- SHDSYN High Definition Synchronizer Installation Manual
- SHDSYN High Definition Synchronizer Operators Manual

Features

- 1 x HD-SDI Input with equalization for >100m Belden 1694A cable
- 3 x HD-SDI outputs conforming to SMPTE292M
- Flexible choice of HD tri-level reference signal standards
- Precision wide range genlock adjustment allowing you to time any HD-SDI signal to pixel accuracy
- Horizontal / vertical ancillary data pass through mode including the passing of embedded audio
- Horizontal / vertical ancillary data remove mode
- Firewall function enables a clean output signal, ideal for concealment of router switching glitches
- Input loss detection – input pass through or black / pattern / freeze
- Video controls including video gain and off-set
- In-built test pattern generator
- 8 x user memories
- 2 x GPI (I/O configurable)
- Remote control allows instant freeze through GPI or RollCall
- RollCall remote control (optional)
 - ◆ Remote status monitoring of
 - ✓ input standard
 - ✓ reference status
 - ✓ voltage levels
 - ✓ temperature
- RollTrack
 - ◆ Audio Delay tracking
 - ◆ Input status
- Reference status

Note:

RollCall™ enabled for remote system control & monitoring.

External Connections to the PowerSync Enclosure

CAUTION ...
The front panel must not be opened or rear covers removed by the Operator. Any internal activities required must be performed by a qualified engineer who should refer to the PowerSync Installation Manual.

All of the external connections to the PowerSync Enclosure are made on the rear of the Enclosure.

The diagram below shows the connectors that are used.

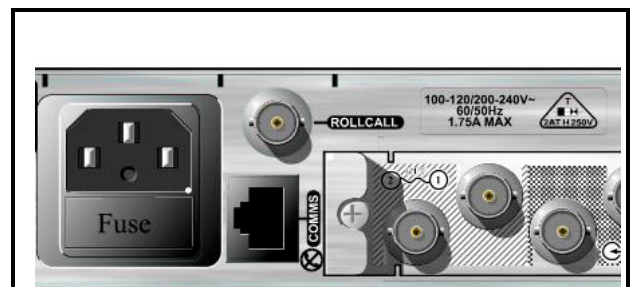


External connections on the rear of the PowerSync Enclosure

Connecting AC Power

There is a standard IEC connector on the rear of the enclosure.

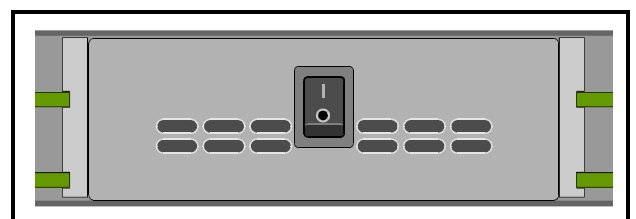
The IEC connector contains a 2.0A (T) fuse.



AC Power Connection as Viewed from rear of Enclosure

ON/OFF Switch

The enclosure ON/OFF switch is located in the middle of the unit inside the front panel.

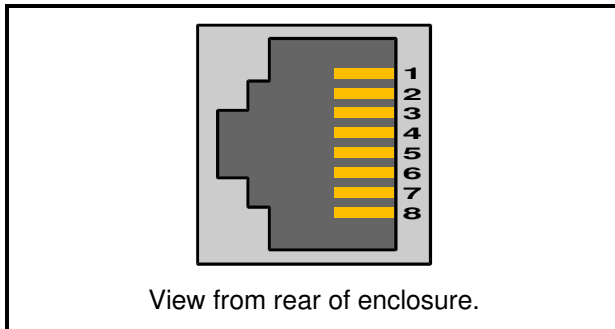


External Connections via RJ45 Connector

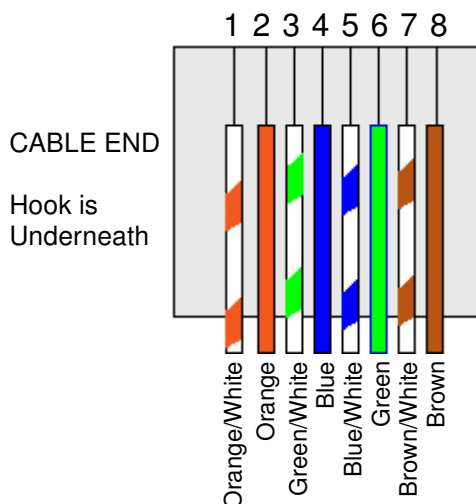
The RJ45 connector provides a RS232 serial link.


None of these is available unless a Control and Monitor board is fitted within the enclosure.

The uses and formats of the RS232 serial links are fully described in the Installation and Operators manuals for the Control and Monitor board.



Pin No.	Function
1	Not used.
2	Not used.
3	Not used.
4	Ground.
5	RS232 TX
6	Not used.
7	Ground.
8	RS232 RX



 **Warning** This connector is not intended for direct connection to a telecommunications network.

Connecting RollCall

A single BNC connector at the top centre of the rear panel allows the unit to be connected to co-axial segment the RollCall™ network communications system.

Note that this is only available if a Control and Monitor board is fitted within the enclosure.



RollCall™ BNC connector on rear of PowerSync Enclosure

Overview of the RollCall™ Communications System and Computer Control System

RollCall remote control gives a uniquely powerful and flexible operating system that can be as simple as a single rack unit with control panel, or a powerful multi-master, multi-slave configuration with PC controllability for full station automation.

The RollCall command protocol derives control panel operating software from the individual unit being addressed. This unit could be an entire product or an individual module within a chassis. This unique feature ensures that updates or additions to individual units will not require control system software upgrades.

For units which support the RollCall option, all card edge, or other control functions are available on the remote control panel or any other controlling device. For some units there may be additional control functions and readouts that are available to the RollCall panel but will not be accessible via the card edge controls.

Note that for some units it may not be possible for the function selected locally to be disabled by the remote control mechanism. Under these circumstances a message will be displayed on the active remote control panel indicating that control is not available.

When a unit is powered-up it will normally assume the same set-up conditions that existed at the last power-down. This information is normally provided by the non-volatile memory within the unit, under the control of RollCall. Some units incorporate methods that allow other set-up conditions to exist on power-up. It is necessary to consult the information specific to each unit for details of such features.

Overview of the RollCall™ Network System

The RollCall system provides flexible and yet powerful remote control system. The units to be included within the system are joined via a high-speed network and each unit is a node on the network. Sufficient address space exists such that within a single network there can be a maximum of 240 nodes with any combination of control panels. In some cases a unit is an enclosure within which are many individual modules. For instance the System HD 4U Enclosure can contain up to twelve separate modules. Thus a theoretical network, consisting entirely of System HD 4U Enclosures, could be constructed to accommodate 2880 (240 x 12) System HD modules. Some other enclosures within the Snell and Wilcox range contain up to sixteen modules which could give rise to a maximum theoretical individual network capability of 3840 (240 x 16) modules.

The *actual* number of nodes on any individual network is physically limited by the load each connection places on the physical interconnection medium. The capacity of a network to support these connections is defined in terms of number of "Unit Loads" it can support. The documentation for all Snell and Wilcox products capable of connection to the RollCall™ network will indicate what number of "Unit Loads" they present to that network.

Network bridges can be used to connect any single network to up to 15 others nested up to 4 levels. A single controller can access up to 54241 ($1 + 15 + 15^2 + 15^3 + 15^4$) networks containing up to a total of 208 million (3840-16) x 54241 IQ modules.

Connecting to Module Backpanels

WARNING ...

1. **Certain modules contain laser transmitters. Also, fibre-optic cables for connection may be active from other equipment.**
2. **Laser light can be damaging to the eyes. Optical fibres and Uniteres should be handled with great care.**
3. **System HD Modules which incorporate Fibre Optic elements, are designed for use with Class 1 laser systems only. Ensure that all inputs do NOT exceed Class 1 as doing so will impair the safety of the system and may result in damage to the equipment.**
4. **Active fibres should not be handled unless their source can be positively identified as not exceeding Class 1 limits.**
5. **Unused uniteres should always have their dust covers fitted.**

Connect the external HD signals to the rear panel of modules as described in the manual for the appropriate module. The symbols used on the rear panels are shown opposite.

Notes...

1. Laser uniteres have plastic covers to prevent the ingress of dust. These covers should only be removed when connecting optical fibres.
2. The ends of optical fibres should be cleaned with a liquid fibre cleaner, using a cotton bud, to ensure that there is no dust present, before they are plugged in (the uniter is polarised).
3. Observe the warning about not viewing live optical sources.

WARNING...

If an optical fibre breaks or is crushed, the splinters produced are very sharp and so extreme care should be exercised.

Switching On

Switch the power on and if a Control and Monitor board is fitted, check that the green front panel status indicator (top left) is illuminated and that the amber and red indicators are off.



Note...

If a Control and Monitor board is not fitted, none of the front panel indicator lamps will illuminate.

The functions of the front panel indicator lamps are as follows:

Red	Fault Condition
Yellow	Warning Condition
Green	Normal Condition



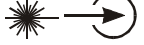


Fault Condition : This led indicates a 'FAULT' condition within the PowerSync Enclosure. This could be caused by either a Module, a PSU rail, etc reporting a major fault, i.e. falling out of normal operating conditions. This type of fault could be fatal to the operation of the PowerSync.

Warning Condition : This led indicates a 'WARNING' condition within the PowerSync. This could be caused by either a Module, a PSU rail, etc reporting a minor fault. This type of fault isn't fatal to the operation of the PowerSync.

Normal Condition : This led indicates a 'NORMAL' condition within the PowerSync.

Further information about a condition can be found using the Rollcall Logging software.

Symbols used on Interface Board Backpanels

Symbol	Description
	Coaxial input
	Coaxial output
	Optical input
	Optical output
	Connector not used
Black/white areas	Used to group associated inputs and outputs.

Specifications

ENCLOSURE

Size

The PowerSync dimensions are as follows:

Length: 531 mm

Width: 482 mm

Height: 45 mm

At least 100 mm should be allowed from the rear of the mesh exhaust cover for cable connectors and ventilation space.

Enclosure Drawing

Environment

Operational: 0°C to +40°C ambient with free air flow. Relative humidity 0% to 90% (non-condensing).

Storage: -30°C to +75°C.

Weight

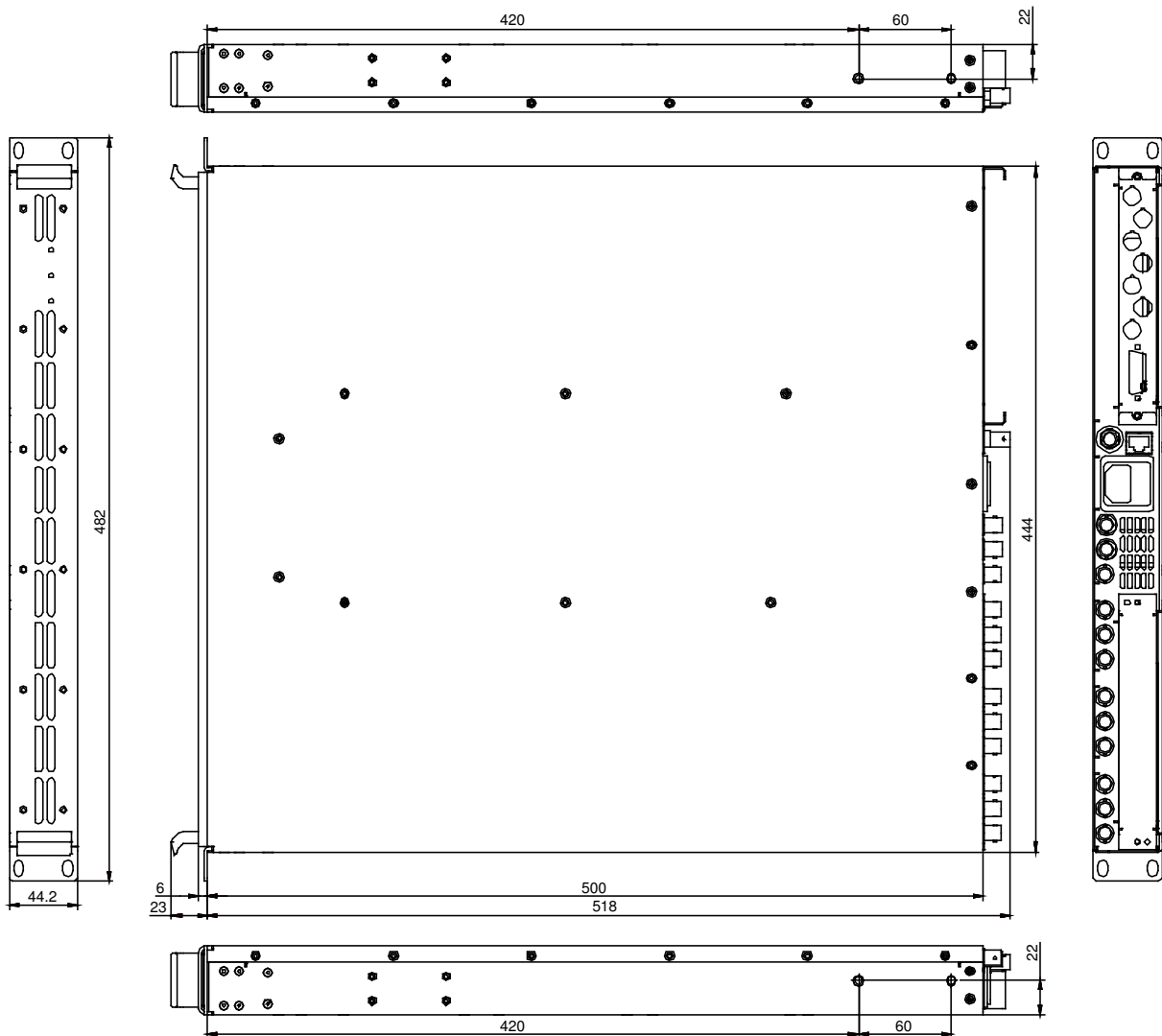
With modules fitted approx. 9 kg.

AC Input

100 V-120 V / 200 V-240 V
50/60 Hz [1.75 A max].

Power Consumption

Less than 75 W.



PowerSync employing the SHDSYN Synchronizer card

Features

Signal Inputs

Serial Digital 1 x Serial Digital SMPTE 292M
 Analog Reference..... 1 x Analog Reference with loop-
 through SMPTE 274M

Signal Outputs

Serial Data..... 3 x Serial Digital SMPTE 292M

Control I/O

GPI 2 via BNC connectors

Controls

Output Standard Select
 1125(1080)/30I
 1125(1080)/30p
 1125(1080)/30sF
 1125(1080)/29I
 1125(1080)/29p
 1125(1080)/29sF
 1125(1080)/25I
 1125(1080)/25p
 1125(1080)/25sF
 1125(1080)/24p
 1125(1080)/24sF
 1125(1080)/23p
 1125(1080)/23sF
 1125(1035)/30i
 1125(1035)/29I
 750(720)/60p
 750(720)/59p
 750(720)/50p

Default Output Selection Black, Pattern, Freeze, Input

Video Controls

Black Level ± 255 units in steps of 1 unit
 Master Video Gain ± 6 dB in steps of 0.1 dB.
 Y Gain..... ± 6 dB in steps of 0.1 dB.
 Cb/Cr Gain..... ± 6 dB in steps of 0.1 dB.
 Pattern select..... 100% Bars
 75% Bars
 SMPTE Bars
 Tartan Bars
 Pluge
 Ramp
 Sweep
 Pulse & Bar
 Burst

Blank Ancillary Data..... Off, Input Not Output, On

Freeze..... Force freeze On/Off

Monochrome..... On/Off, Y only, C Only

GPI Controls

GPI..... Two connectors may be configured to be as Unused, as an output, as an input.

GPI Input..... Activates: - Freeze, Pattern, Black, Blank ANC, Mono Y only, Mono CbCR only, Use reference, Memory recall.

GPI Output..... Produces an output for:
 Input Loss
 Reference OK
 Freeze
 Pattern
 Black
 Monochrome

Memories Save and Recall eight user setups
 Recall module defaults
 Recall factory setup

RollCall Features

Logging..... Input Status
 Input Standard
 Reference Status
 Output Standard
 Monochrome
 Freeze
 Black
 Pattern

RollTrack..... On/Off, Index, Source, Address, Command.

Indicator LED's

Power..... Power supplies valid

Fault..... Board fault

Running Valid CPU activity

PLL Lock..... Input HDSDI PLL locked indicator

CRC Error Cyclic Redundancy Checksum error indicator

Specifications

Input Standard.....	1125(1080)/30I	Output Standard	1125(1080)/30I
	1125(1080)/30p		1125(1080)/30p
	1125(1080)/30sF		1125(1080)/30sF
	1125(1080)/29I		1125(1080)/29I
	1125(1080)/29p		1125(1080)/29p
	1125(1080)/29sF		1125(1080)/29sF
	1125(1080)/25I		1125(1080)/25I
	1125(1080)/25p		1125(1080)/25p
	1125(1080)/25sF		1125(1080)/25sF
	1125(1080)/24p		1125(1080)/24p
	1125(1080)/24sF		1125(1080)/24sF
	1125(1080)/23p		1125(1080)/23p
	1125(1080)/23sF		1125(1080)/23sF
	1125(1035)/30i		1125(1035)/30i
	1125(1035)/29I		1125(1035)/29I
	750(720)/60p		750(720)/60p
	750(720)/59p		750(720)/59p
	750(720)/50p		750(720)/50p
		GPI	2 x GPI (I/O configurable)
		Reference Source.....	External – HD Tri-Level syncs Input Video
		Reference Timing	Horizontal and Vertical timing
		Horizontal Timing.....	0 to 1 output line pixels in steps of 1 pixel.
		Vertical Timing.....	0 to 1 output frame in steps of 1 line.
		Memories.....	8 x user memories
		Utilities	Pattern on / off, Pattern select, Freeze on / off, Ancillary on / off, monochrome Y / C