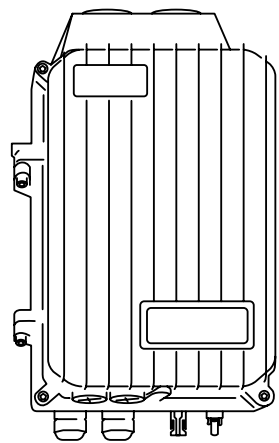
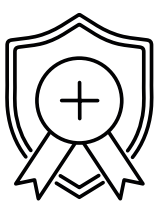
quick guide variostring 70



swiss made power



See more about our warranty conditions
on our website studer-innotec.com/studer-care

designed and manufactured
by studer in Switzerland

Introduction

EN Congratulations!
You are about to install and use a high-end equipment that will play a central role in the energy management of your battery-based system. The variostring (vs) is a solar MPPT charge controller. When connected to a battery and photovoltaic panels the vs will recharge the battery in an optimum way. This vs has been designed, manufactured, assembled and tested in our factory in Switzerland.

FR Félicitations !
Vous vous préparez à installer et à utiliser un appareil haut de gamme qui jouera un rôle central dans la gestion d'énergie de votre système avec stockage.
Le variostring (vs) est un contrôleur de charge solaire MPPT. Lorsque qu'il est connecté à des batteries et des panneaux photovoltaïques, il rechargera automatiquement les batteries de manière optimale. Ce vs a été conçu, fabriqué, assemblé et testé dans notre usine en Suisse.

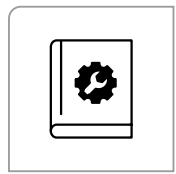
DE Herzlichen Glückwunsch!
Wir freuen uns, dass Sie sich für eines High-Tech-Gerät entschieden haben, welches bei der Energie-management Ihrer Anlage entscheidende Rolle spielen wird. Der variostring (vs) ist ein MPPT-Solarladegerät. Wenn an Batterien und Photovoltaikmodule angeschlossen wird, lädt der vs die Batterien optimal nach. Dieser vs wurde in unserem Werk in der Schweiz entwickelt, hergestellt, montiert und getestet.

ES ¡Enhorabuena!
Está a punto de instalar y de utilizar un equipo de alta gama que desempeñará una función esencial en la gestión de energía de su sistema con almacenamiento. El variostring (vs) es un controlador de carga solar MPPT. Conectado a una batería y a paneles fotovoltaicos, el vs recarga automáticamente las baterías de manera óptima. Este vs ha sido diseñado, fabricado, ensamblado y probado en nuestra fábrica en Suiza.

General Information

EN Exclusion of liability

Studer disclaims all responsibility and liability for damage, costs or losses resulting from an installation that does not comply with the instructions, a faulty operation or inadequate maintenance. The use of studer equipment is in any case under the responsibility of the customer.



Read carefully the safety and operation instructions / Installation must be entrusted to qualified personnel / Check the user manual online / Need help?

FR Exclusion de la responsabilité

Studer décline toute responsabilité pour les dommages, les coûts ou les pertes résultant d'une installation non conforme aux prescriptions, d'un fonctionnement défectueux, ou d'un entretien déficient. L'utilisation des appareils studer relève dans tous les cas de la responsabilité du client.

Lisez attentivement les instructions de sécurité et d'utilisation / L'installation doit être confiée à du personnel qualifié / Consultez le manuel d'utilisation en ligne / Besoin d'aide ?

DE Haftungsausschluss

Studer übernimmt keinerlei Verantwortung und Haftung für Schäden, Kosten oder Verluste, die sich aus unsachgemäßer Installation, unsachgemäßem Betrieb sowie fehlerhafter Wartung ergeben oder in irgendeiner Art und Weise damit zusammenhängen. Der Einsatz und Betrieb der studer-Geräte obliegt in jedem Fall der Verantwortung des Kunden.

Lesen Sie die Sicherheits- und Betriebsanweisungen sorgfältig durch / Die Installation muss qualifiziertem Personal anvertraut werden / Überprüfen Sie die Bedienungsanleitung online / Brauchen Sie Hilfe?

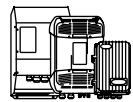
ES Exclusión de responsabilidad

Studer declina cualquier responsabilidad por los daños, costes o pérdidas resultantes de una instalación no conforme con las recomendaciones, de un funcionamiento fefectuoso o de un mantenimiento deficiente. El uso de equipos de studer es en cualquier caso responsabilidad del cliente.

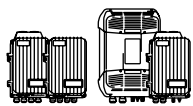
Lea atentamente las instrucciones de seguridad y funcionamiento / La instalación debe confiarse a personal cualificado / Consulte el manual de usuario en línea / ¿Necesitas ayuda?

Compatible with:

rcc 02/03
Configuration, display, datalogger



xtender
Battery inverter/charger



vario
Solar charge controller

ecf 01
Cooling fan

bsp
Advanced battery processor (lead-acid)

xcom CAN
Communication with lithium BMS

xcom LAN/GSM
Remote monitoring (Portal & App)

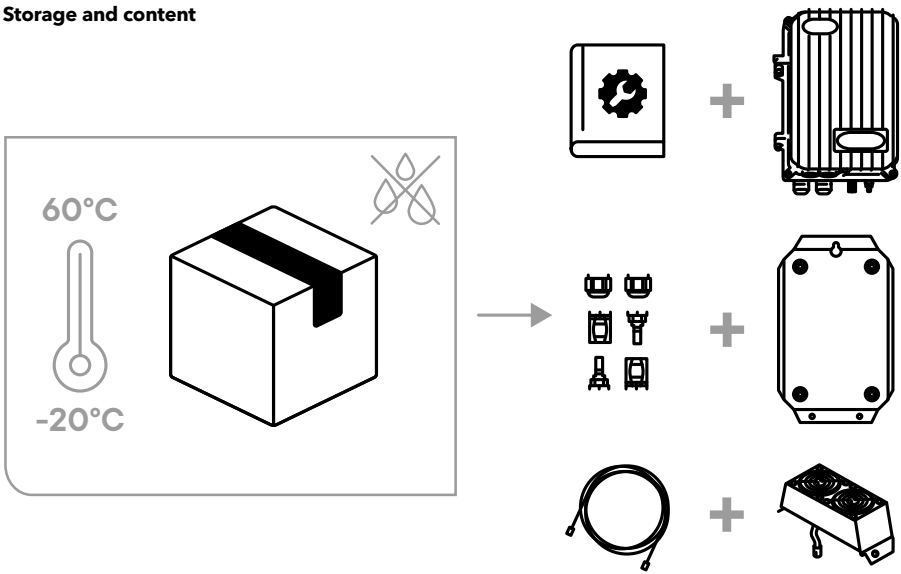
xcom 232i/CAN/485i
Communication bridges (openstuder)

bts 01
Temperature sensor

arm 02
External auxiliary contacts module

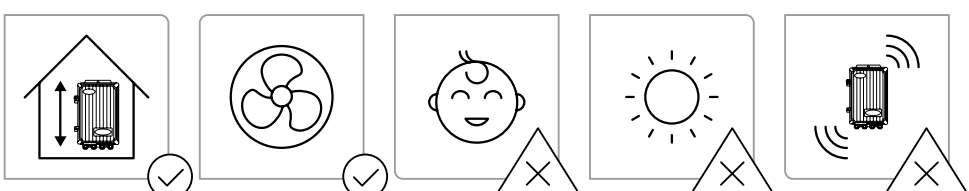
Mounting and installation

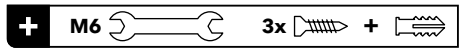
Storage and content



Mounting place

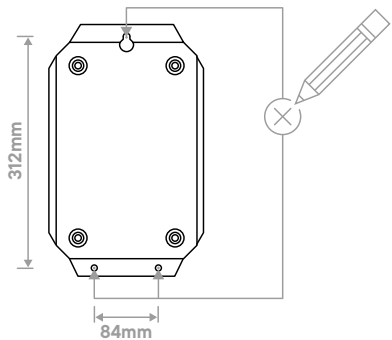
The batteries should only be installed by qualified personnel.



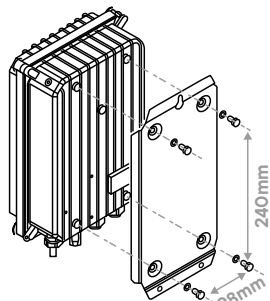


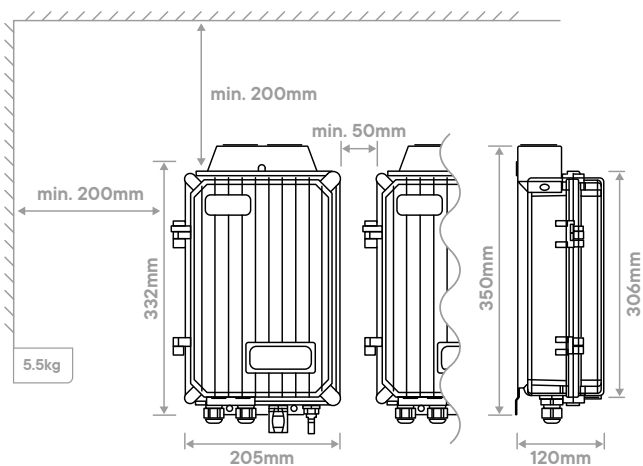
Fixing and dimensions

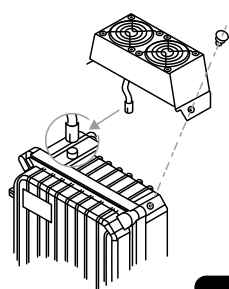
1



2

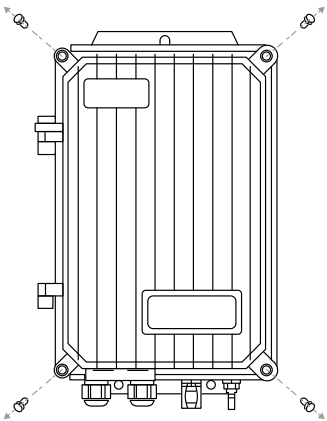


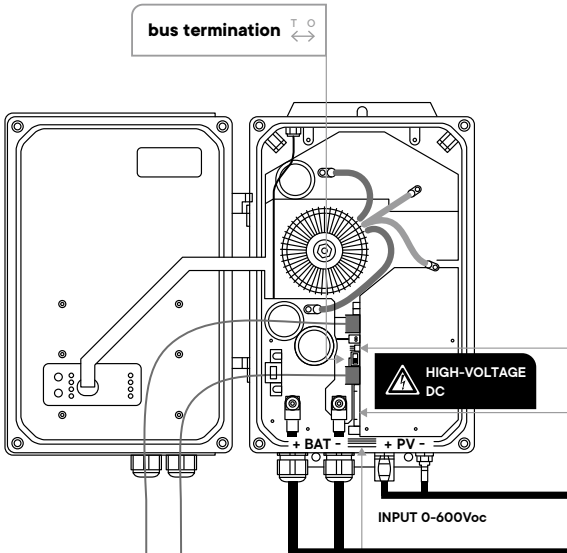




3

Wiring





Communication

- 2x RJ 45 black flat cable: rcc 02/03 / multi-units: xtender, vt, vs, bsp, xcom
- 1x RJ 11 black flat cable for accessories: bts 01, arm 02

Earthing

- 16mm² cable
- The solar generator must be class II isolated

EN The device must be installed in accordance with local standards and regulations in force.
FR L'appareil doit être installé conformément aux normes et réglementations locales en vigueur.
DE Das Gerät muss gemäß den geltenden örtlichen Normen und Vorschriften installiert werden.
ES El dispositivo debe instalarse de acuerdo con las normas y regulaciones locales vigentes.

5mm

remote entry

RTC battery

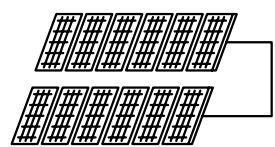
PV connection

- 2.5-6mm² cable, Sunclix connector

Protection device (PV side)

- Switching device, max solar current 13A
- Overvoltage protection, SPD (600Vdc)

Serial connection (chain or string), up to 600V



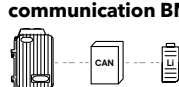
75V

Battery connection

- 25mm² cable M6, 5Nm

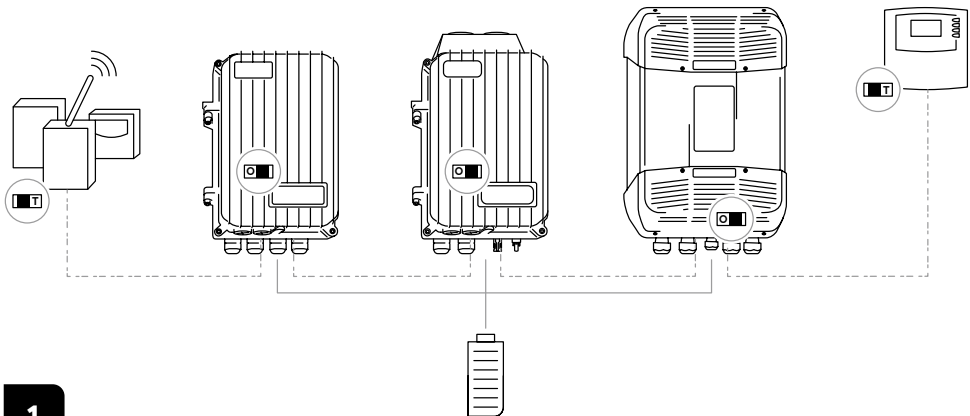
Protection device (battery side) 80A

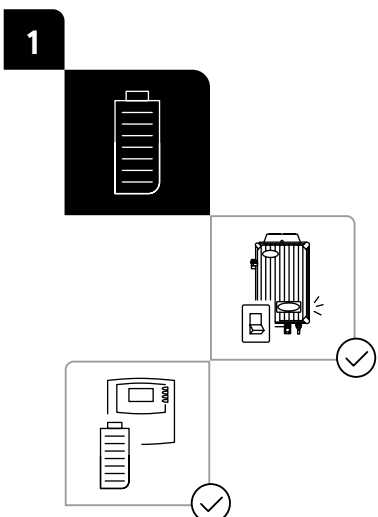
Lithium batteries communication BMS CAN

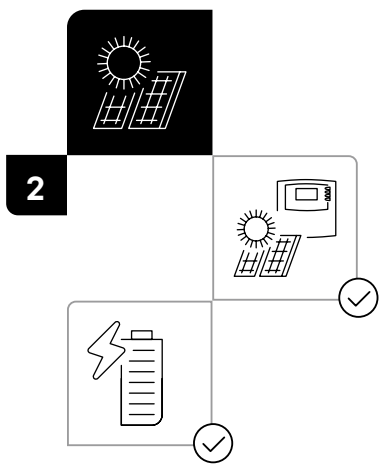


xcom CAN

Multi units and power up

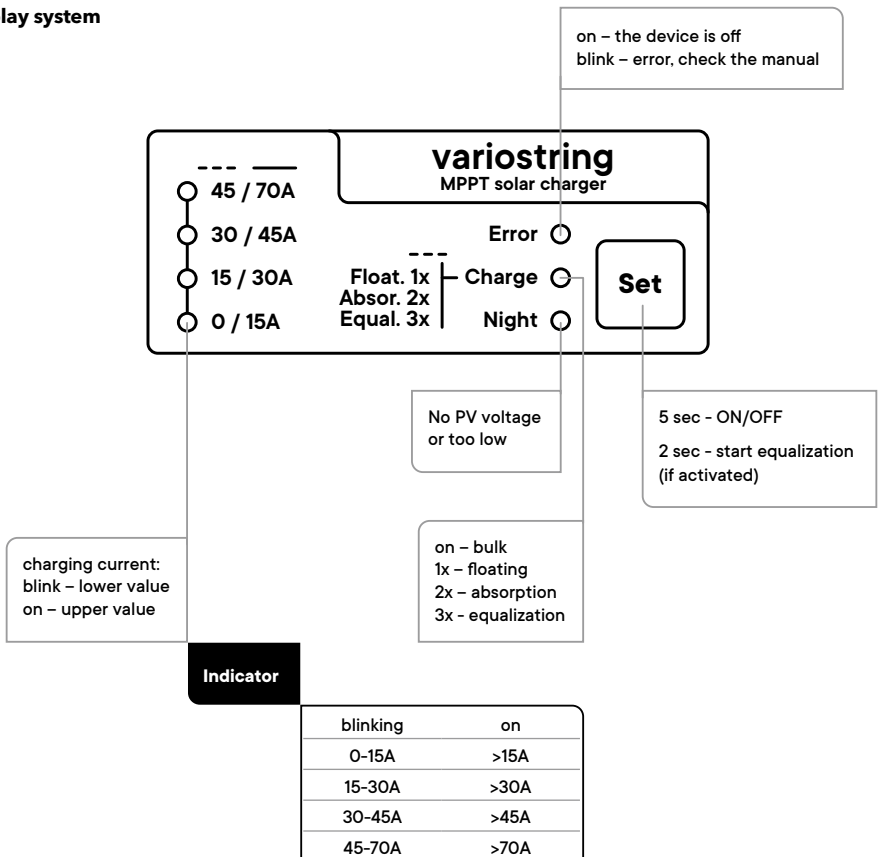






Display

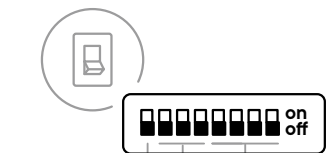
Display system



blinking	on
0-15A	>15A
15-30A	>30A
30-45A	>45A
45-70A	>70A

Configuring the variostring

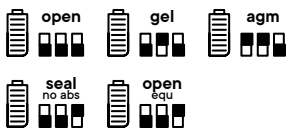
DIP switches



Spare 5-8

Activate DIP switches configuration

Battery cycles (check manual)



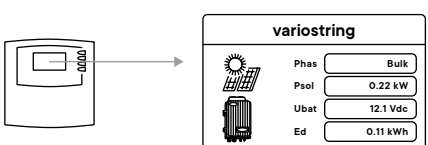
Lead-acid
- Configure charge profile according to manufacturer

Lithium (comm BMS, xcom CAN)
- Check compatibility list and xcom CAN manual

Others: NiCd, NiFe, Redox flow, saltwater, etc.
- Check battery manufacturer

synchronized with xtender by default

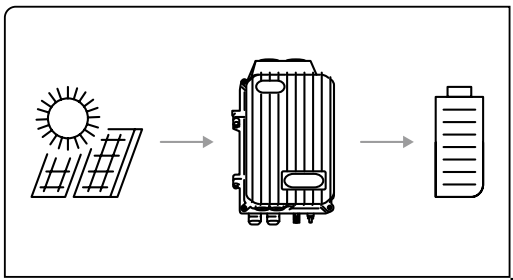
rcc 02/03



Displaying real time user information

Configurating parameters

Technical data



IP 54

Protection Class I

CE

PV input voltage	100-600V
PV max current	13A
PV recommended power	4200W

Batt nominal voltage	48V
Batt charge current	70A
Batt min-max voltage	38-68V

Maintenance and recycling

EN Maintenance and recycling

Except for the periodic check of the connections (tightening, general condition), the variostring does not require any particular maintenance. To dispose of this product, please use the service for the collection of electrical waste and observe all obligations in force in the place of purchase.

FR Entretien et recyclage

À l'exception du contrôle périodique des branchements (serrage, état général), le variostring ne nécessite pas d'entretien particulier. Pour vous débarrasser de ce produit, veuillez utiliser les services de collecte des déchets électriques et observer toutes les obligations en vigueur selon le lieu d'achat.

DE Wartung und Recycling

Abgesehen von der regelmäßigen Kontrolle der Anschlüsse (Fixierung, allgemeiner Zustand) bedarf der variostring keinerlei besonderer Wartungsarbeiten. Beachten Sie bei der Entsorgung dieses Gerätes die geltenden örtlichen Vorschriften und nutzen Sie die Sammeldienste/-stellen für Elektro-/Elektronik-Altgeräte.

ES Mantenimiento y reciclaje

A excepción del control periódico de las conexiones (apriete, estado general), el variostring no requiere un mantenimiento particular. Para la eliminación del producto, acuda a los servicios de recogida de residuos eléctricos y cumpla todas las obligaciones vigentes en el lugar de compra.

Serial Number:

Installed by:

Date:

Signature:

Call our specialists **+41 27 205 60 80**
or visit **studer-innotec.com/support**

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