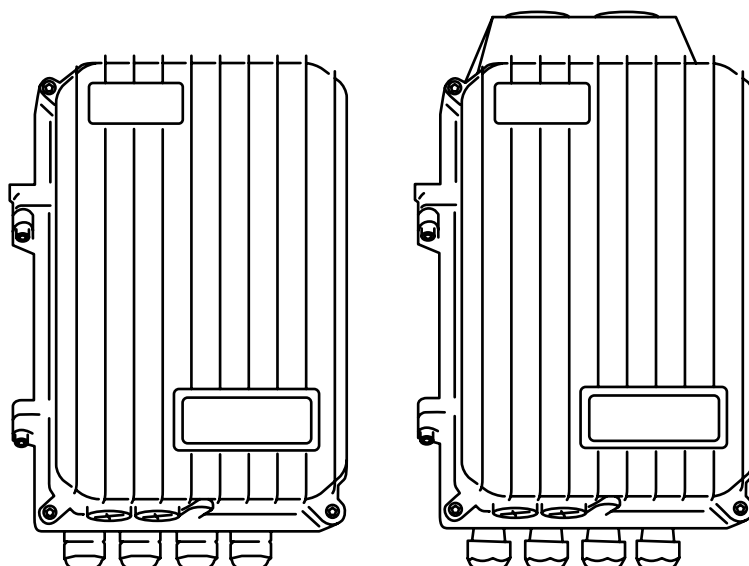


VarioTrack Reihe



Modell	VT-65			VT-80		
Elektrische Eigenschaften, PV Seite						
Bei Nominalspannung der Batterie	12 V	24 V	48 V	12 V	24 V	48 V
Max. Leistung des PV-Generators	1000 W	2000 W	4000 W	1250 W	2500 W	5000 W
Max. Spannung des PV-Generators	80 V	150 V		80 V	150 V	
Max. Solarbetriebsspannung	75 V	145 V		75 V	145 V	
Min. Solarbetriebsspannung	> Batteriespannung					
Elektrische Eigenschaften, Batterie Seite						
Max. Batterieladestrom	65 A			80 A		
Nennspannung Batterie	12 V / 24 V / 48 V (Automatische Erkennung oder manuell)					
Eingangsspannungsbereich Batterie	7-68 Vdc					
Geräteleistungen						
Max. Wirkungsgrad (in einem typischen 48 V System)	> 99 %					
Max. Stand-by Eigenverbrauch (48 Vdc)	25 mA > 1.2 W					
Max. Stand-by Eigenverbrauch (24 Vdc)	30 mA > 0.8 W					
Max. Stand-by Eigenverbrauch (12 Vdc)	35 mA > 0.5 W					
Ladestufen	4 Stufen: Bulk, Absorption, Schwebeladung, Egalisation					
Kompensation der Batterietemperatur (verfügbar mit Zubehör BTS-01)	-3 mV / °C / Zelle (Ref. bei 25°C) Standardwert einstellbar -8 bis 0 mV / °C					
Elektronischer Schutz						
Verpolung des PV-Generators	Geschützt bis höchstens 150 Vdc					
Verpolung des Batterieanschlusses	Bis höchstens 150 Vdc					
Batterieüberspannung	Bis 150 Vdc					
Übertemperatur	Leistungsreduzierung / Stopp					
Rückstromschutz (bei Nacht)	Trennrelais					
Umgebung						
Funktionsbereich	-20 bis 55°C					
Relative Luftfeuchtigkeit	100 %					
Schutzklasse	IP54, IEC/EN 60529:2001					
Montageort	Innen					
Allgemeine Daten						
Garantie	5 Jahre					
ISO Zertifizierung	9001:2008 / 14001:2004					
Gewicht	5.2 kg			5.5 kg		
Abmessungen L/B/H [mm]	120 / 220 / 310			120 / 220 / 350		
Parallelbetrieb (getrennte PV Felder)	Bis zu 15 Einheiten					
Max. Kabelquerschnitt	35 mm²					
Kabelverschraubungen	M 20 x 1,5					
Kommunikation						
Kommunikationsbus	STUDER Kommunikationsbus					
Fernsteuerung und Kommunikation	RCC-02/-03, Xcom-232i / Xcom-LAN / Xcom-GSM / Xcom-SMS					
Menü Sprachen	Deutsch / Englisch / Französisch / Spanisch					
Datenlogger	Mit RCC-02/-03 auf SD Karte · Ein Messpunkt jede Minute					
Normen						
CE Konformität	EMV 2004/108/EG · NS 2006/95/EG · RoHS 2011/65/EU					
Sicherheit	IEC/EN 62109-1:2010					
EMC (Electro Magnetic Compatibility)	IEC/EN 61000-6-3:2011 · IEC/EN 61000-6-1:2005					
Zubehör						
Fernsteuerung RCC-02 oder RCC-03	•			•		
Modul Xcom-232i	•			•		
Kommunikationssets Xcom-GSM / Xcom-LAN / Xcom-SMS	•			•		
Batteriezustands-Monitor BSP	•			•		
Modul mit 2 Hilfskontakten ARM-02	•			•		
Lüftermodul ECF-01	•			Inbegriffen		
Temperatursonde BTS-01 (3 m)	•			•		
Kommunikationskabel CAB-RJ45-8 2	•			•		



variotrack

The **variotrack** MPPT solar charge controller maximizes the energy generated by charging the batteries in an optimal way. The accuracy of the Maximum Power Point Tracking (MPPT) algorithm, the high peak efficiency and low internal consumption ensure an optimal valorisation of the energy produced by the PV modules to all types of battery technology. The **variotrack** is 100% manufactured in Switzerland and has a 10-year warranty.



variotrack

VT-80

Electrical characteristics PV array side at nominal battery voltage

	12 V	24 V	48 V
Maximum solar power recommended (@STC)	1250 W	2500 W	5000 W
Maximum solar open circuit voltage	75 V	150 V	
Maximum solar functional circuit voltage	75 V	145 V	
Minimum solar functional circuit voltage	Above battery voltage		

Electrical characteristics battery side

Maximum output current	80 A		
Nominal battery voltages	Automatic / manual set to 12, 24 or 48 V		
Operating voltage range	7 - 68 V		

Performances of the device

Tracking efficiency	> 99 %		
European weighted efficiency	> 97 %		
Maximum stand-by self-consumption (48 V)	< 25 mA (1.2 W)		
Maximum stand-by self-consumption (24 V)	< 30 mA (0.8 W)		
Maximum stand-by self-consumption (12 V)	< 35 mA (0.5 W)		
Charging stages*	4 stages: Bulk, Absorption, Floating, Equalization		
Battery temperature compensation (available with accessory BTS-01/BSP)	-3 mV / °C / cell (25°C ref) default value adjustable -8 to 0 mV / °C		

Electronic protections

PV reverse polarity	✓
Battery reverse polarity	✓
Battery overvoltage	✓
Over temperature	✓
Reverse current at night	✓

Environment

Operating ambient temperature range	-20 to 55°C
Humidity	100%
Ingress protection of enclosures	IP54
Mounting location	indoor, outdoor

General data

Weight	5.5 kg
Dimensions h/w/l [mm]	120 / 220 / 350
Parallel operation (separated PV arrays)	Up to 15 devices
Max wire size	35 mm ²
Glands	M 20 × 1,5

Communication

Network cabling	STUDER communication BUS (included)
Configuration	RCC-02/-03, Internal DIP switches for basic settings
Data logging	With RCC-02/03, Xcom-232i on SD card · One point every minute

Accordance to standards

Conformity	Low Voltage Directive (LVD) 2014/35/EU: EN/IEC 62109-1 Electromagnetic Compliance (EMC) Directive 2014/30/EU: EN/IEC 61000-6-2, 61000-6-4
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Efficient, robust and flexible

- Easy and safe commissioning with full protection against incorrect wiring
- Rugged and durable, this device is designed to perform in harsh environmental conditions (IP54)
- High tracking efficiency >99%
- Up to 15 VarioTrack in parallel on the same communication bus (75kW)
- 4 step charger fully programmable for longer battery life
- Low self-consumption: <1W in night time mode
- Display with 7 LEDs showing status and current
- Suitable for any solar and battery system
- Optimal usage in an Xtender system with synchronized battery management

Combine with a range of accessories

- Display, programming and data logging remote control (**RCC-02/-03**)
- Communication sets (**Xcom-LAN/Xcom-GSM**)
- Communication module (**Xcom-232i/Xcom-CAN**)
- Battery temperature sensor (**BTS-01**)
- Battery Status Processor (**BSP**)
- Communication with lithium battery BMS (**Xcom-CAN**)
- 2 additional auxiliary contacts (**ARM-02**)

Certifications & Warranty

100% manufactured and tested in Switzerland (Europe). ISO certified factory 9001:2020/14001:2020. All our products include a 10-year warranty (5+5).

STC = Standard Test Conditions
Data may change without any notice

* Number of steps, thresholds, end current and times adjustable with the RCC-02/-03

Technical data



variortrack

VT-40

VT-65

Electrical characteristics PV array side at nominal battery voltage

	12 V	24 V	48 V	12 V	24 V	48 V
Maximum solar power recommended (@STC)	625 W	1250 W	2500 W	1000 W	2000 W	4000 W
Maximum solar open circuit voltage	75 V	150 V		75 V	150 V	
Maximum solar functional circuit voltage	75 V	145 V		75 V	145 V	
Minimum solar functional circuit voltage	Above battery voltage					

Electrical characteristics battery side

Maximum output current	40 A	65 A
Nominal battery voltages	Automatic / manual set to 12, 24 or 48 V	
Operating voltage range	7 - 68 V	

Performances of the device

Tracking efficiency	> 99 %
European weighted efficiency	> 97 %
Maximum stand-by self-consumption (48 V)	< 25 mA (1.2 W)
Maximum stand-by self-consumption (24 V)	< 30 mA (0.8 W)
Maximum stand-by self-consumption (12 V)	< 35 mA (0.5 W)
Charging stages*	4 stages: Bulk, Absorption, Floating, Equalization
Battery temperature compensation (available with accessory BTS-01/BSP)	-3 mV / °C / cell (25°C ref) default value adjustable -8 to 0 mV / °C

Electronic protections

PV reverse polarity	✓
Battery reverse polarity	✓
Battery overvoltage	✓
Over temperature	✓
Reverse current at night	✓

Environment

Operating ambient temperature range	-20 to 55°C
Humidity	100%
Ingress protection of enclosures	IP54
Mounting location	indoor, outdoor

General data

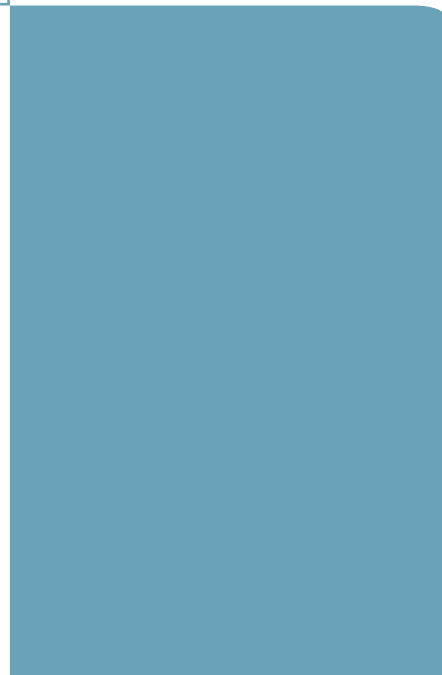
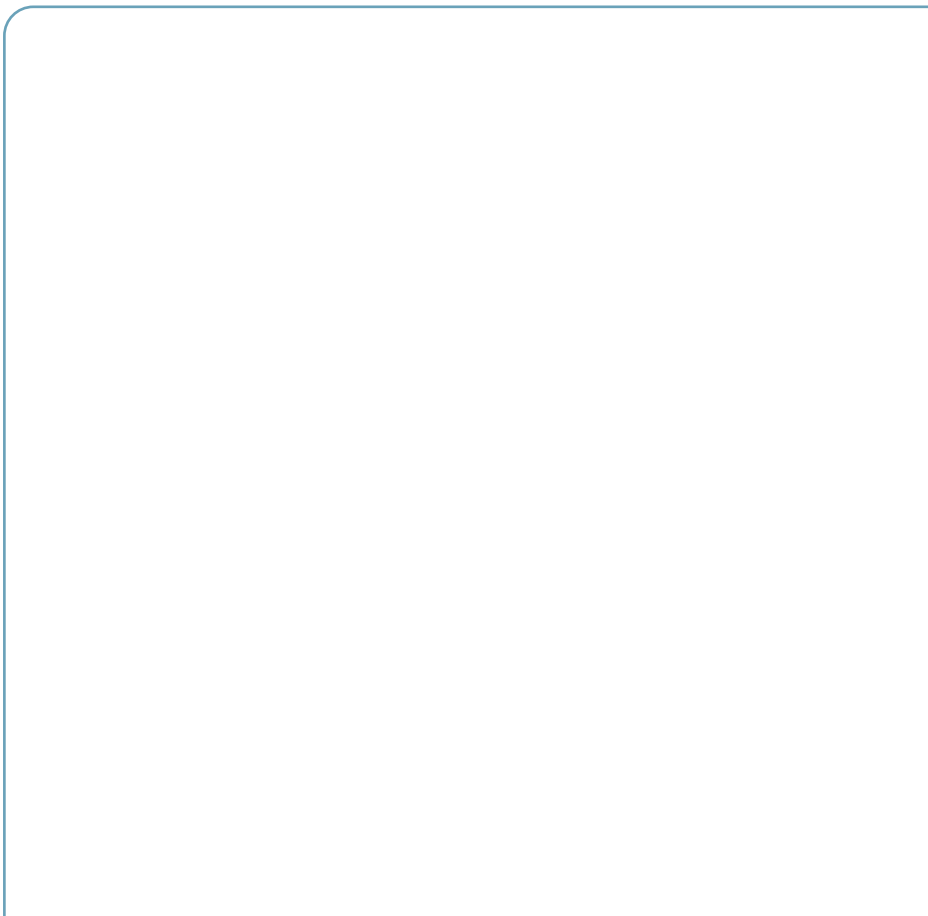
Weight	3.8 kg	5.2 kg
Dimensions h/w/l [mm]	120 / 220 / 310	
Parallel operation (separated PV arrays)	Up to 15 devices	
Max wire size	35 mm²	
Glands	M 20 × 1,5	

Communication

Network cabling	STUDER communication BUS (included)
Configuration	RCC-02/-03, Internal DIP switches for basic settings
Data logging	With RCC-02/03, Xcom-232i on SD card - One point every minute

Accordance to standards

Conformity	Low Voltage Directive (LVD) 2014/35/EU: EN/IEC 62109-1 Electromagnetic Compliance (EMC) Directive 2014/30/EU: EN/IEC 61000-6-2, 61000-6-4
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