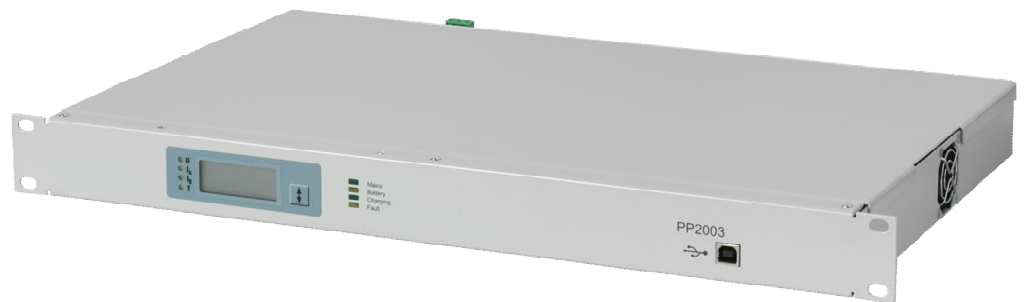


Novigo

## Power supply and battery

PP20xx-A1, PA20xx-A1, PHA2007-A1



### **EN 54-4-certified power supplies and batteries for the Novigo voice alarm system.**

- Power supply to all system components
- Charging and monitoring of emergency batteries
- Deep discharge protection for emergency batteries
- Overvoltage protection switch
- Optical fault message display on front

## Use

The power supply units provide DC 24 V to all system components.

The devices ensure that the Novigo voice alarm system continues to operate without interruption if the 'AC 230 V' line voltage fails by providing a DC 24 V from the emergency batteries.

The power supply units also charge, monitor, and protect all emergency batteries. The batteries are charged in accordance with the standard EN 54-4 based on their nominal capacity.

The power supply units are equipped with converters, overvoltage protection switches, and battery deep discharge protection. The deep discharge protection ensures that the batteries never fully discharge, in order to prevent battery damage.



The power supply units are suitable for use in a supply system with a nominal voltage of 230 V / 50 Hz.

Fault messages are displayed visually on the front of the unit.

## Features and Functions


### Preferred power supply

**NOTICE! These power supply units are to be preferably ordered.**

PP2003-A1	'Merawex ZDSO-400-DR2 320 Ah'
	<ul style="list-style-type: none"><li>• EN 54-4-certified</li><li>• Charging, monitoring, and protecting emergency power batteries</li><li>• Power supplied to all system components via DC 24 V</li><li>• Emergency power supply to all system components</li><li>• Input voltage 230 V / 50 Hz</li><li>• Max. capacity of emergency batteries: 320 Ah</li></ul>
PP2004-A1	'Merawex ZSP135 DR-7A-3 40 Ah'
	<ul style="list-style-type: none"><li>• EN 54-4-certified</li><li>• Metal wall cabinet</li><li>• Lockable</li><li>• LED indicator for operational readiness</li><li>• Internal temperature sensor</li><li>• Remotely monitoring power supply and batteries via contact</li><li>• Internal low-voltage fuse</li><li>• Charging, monitoring, and protecting emergency power batteries</li><li>• Power supplied to all system components via DC 24 V</li><li>• Emergency power supply to all system components</li><li>• Input voltage 230 V / 50 Hz</li><li>• Max. capacity of emergency batteries: 45 Ah</li></ul>


## Second source power supply


**NOTICE! Order alternatives only if the preference is not available.**


<b>PP2005-A1</b>	<b>'SLAT SON 24V 12A MS150'</b>
	<ul style="list-style-type: none"><li>• EN 54-4-certified</li><li>• Charging, monitoring, and protecting emergency power batteries</li><li>• Power supplied to all system components via DC 24 V</li><li>• Emergency power supply to all system components</li><li>• Input voltage 230 V / 50 Hz</li><li>• Max. capacity of emergency batteries: 225 Ah</li><li>• Second source for PP2003-A1</li></ul>


## Preferred batteries

**NOTICE! These batteries are to be preferably ordered.**

<b>PA2006-A1</b>	<b>'Merawex MXL 40-12 Battery'</b>
	<ul style="list-style-type: none"><li>• Maintenance-free lead battery</li><li>• Capacitance: 40 Ah</li><li>• Voltage: 12 V</li><li>• Rechargeable</li><li>• Gas-tight</li><li>• Acid-free</li></ul>

<b>PA2007-A1</b>	<b>'Merawex MXL 65-12 Battery'</b>
	<ul style="list-style-type: none"><li>• Maintenance-free lead battery</li><li>• Capacitance: 65 Ah</li><li>• Voltage: 12 V</li><li>• Rechargeable</li><li>• Gas-tight</li><li>• Acid-free</li></ul>


<b>PA2008-A1</b>	<b>'Merawex MXL 100-12 FT Battery'</b>
	<ul style="list-style-type: none"><li>• Maintenance-free lead battery</li><li>• Capacitance: 100 Ah</li><li>• Voltage: 12 V</li><li>• Rechargeable</li><li>• Front terminals</li><li>• Gas-tight</li><li>• Acid-free</li></ul>


<b>PA2009-A1</b>	<b>'Merawex MXL 150-12 FT Battery'</b>
	<ul style="list-style-type: none"> <li>● Maintenance-free lead battery</li> <li>● Capacitance: 150 Ah</li> <li>● Voltage: 12 V</li> <li>● Rechargeable</li> <li>● Front terminals</li> <li>● Gas-tight</li> <li>● Acid-free</li> </ul>


**Second source batteries**


**NOTICE! Order alternatives only if the preference is not available.**


<b>PA2010-A1</b>	<b>'PowerSonic PG-12V45 Battery'</b>
<p>No figure</p>	<ul style="list-style-type: none"> <li>● Maintenance-free lead battery</li> <li>● Capacitance: 45 Ah</li> <li>● Voltage: 12 V</li> <li>● Rechargeable</li> <li>● Gas-tight</li> <li>● Acid-free</li> <li>● Second source for PA2006-A1</li> </ul>


<b>PA2011-A1</b>	<b>'PowerSonic PG-12V65 Battery'</b>
	<ul style="list-style-type: none"> <li>● Maintenance-free lead battery</li> <li>● Capacitance: 65 Ah</li> <li>● Voltage: 12 V</li> <li>● Rechargeable</li> <li>● Gas-tight</li> <li>● Acid-free</li> <li>● Second source for PA2007-A1</li> </ul>

<b>PA2015-A1</b>	<b>'Marathon XL12V70 Battery'</b>
	<ul style="list-style-type: none"> <li>● Maintenance-free lead battery</li> <li>● Capacitance: 65 Ah</li> <li>● Voltage: 12 V</li> <li>● Rechargeable</li> <li>● Gas-tight</li> <li>● Acid-free</li> <li>● Second source for PA2007-A1</li> </ul>

<b>PA2012-A1</b>	<b>'Triathlon FT-12100H Battery'</b>
	<ul style="list-style-type: none"> <li>● Maintenance-free lead battery</li> <li>● Capacitance: 100 Ah</li> <li>● Voltage: 12 V</li> <li>● Rechargeable</li> <li>● Front terminals</li> <li>● Gas-tight</li> <li>● Acid-free</li> <li>● Second source for PA2008-A1</li> </ul>

<b>PA2016-A1</b>	<b>'SunBattery SB12-100HFT Battery'</b>
	<ul style="list-style-type: none"> <li>● Maintenance-free lead battery</li> <li>● Capacitance: 100 Ah</li> <li>● Voltage: 12 V</li> <li>● Rechargeable</li> <li>● Front terminals</li> <li>● Gas-tight</li> <li>● Acid-free</li> <li>● Second source for PA2008-A1</li> </ul>

<b>PA2013-A1</b>	<b>'Triathlon FT-12150 Battery'</b>
	<ul style="list-style-type: none"> <li>● Maintenance-free lead battery</li> <li>● Capacitance: 150 Ah</li> <li>● Voltage: 12 V</li> <li>● Rechargeable</li> <li>● Front terminals</li> <li>● Gas-tight</li> <li>● Acid-free</li> <li>● Second source for PA2009-A1</li> </ul>

<b>PA2017-A1</b>	<b>'SunBattery SB12-150AFT Battery'</b>
	<ul style="list-style-type: none"> <li>● Maintenance-free lead battery</li> <li>● Capacitance: 150 Ah</li> <li>● Voltage: 12 V</li> <li>● Rechargeable</li> <li>● Front terminals</li> <li>● Gas-tight</li> <li>● Acid-free</li> <li>● Second source for PA2009-A1</li> </ul>

## Type Overview

### Preferred power supply

Type	PP2003-A1	PP2004-A1
Designation	Merawex ZDSO-400-DR2 320 Ah	Merawex ZSP135 DR-7A-3 40 Ah
Order number	OFB:NOVIGO_2149	OFB:NOVIGO_2150
Max. battery capacity	320 Ah	45 Ah
Mode of mounting	Cabinet installation 19"	Wall mounting

### Second source power supply

Type	PP2005-A1
Designation	SLAT SON 24V 12A MS150
Order number	OFB:NOVIGO_2362
Max. battery capacity	225 Ah
Mode of mounting	Cabinet installation 19"

### Preferred batteries

Type	PA2006-A1	PA2007-A1	PA2008-A1	PA2009-A1
Designation	Merawex MXL 40-12 Battery	Merawex MXL 65-12 Battery	Merawex MXL 100-12 FT Battery	Merawex MXL 150-12 FT Battery
Order number	OFB:NOVIGO_2151	OFB:NOVIGO_2152	OFB:NOVIGO_2153	OFB:NOVIGO_2154
Power supply	DC 12 V			
Nominal capacity (Ah)	40	65	100	150

### Second source batteries

Type	PA2010-A1	PA2011-A1	PA2015-A1
Designation	PowerSonic PG-12V45 Battery	PowerSonic PG-12V65 Battery	Marathon XL12V70 Battery
Order number	OFB:NOVIGO_2363	OFB:NOVIGO_2364	OFB:NOVIGO_2365
Power supply	DC 12 V		
Nominal capacity (Ah)	45	65	65

Type	PA2012-A1	PA2016-A1	PA2013-A1	PA2017-A1
Designation	Triathlon FT-12100H Battery	SunBattery SB12-100HFT Battery	Triathlon FT-12150 Battery	SunBattery SB12-150AFT Battery
Order number	OFB:NOVIGO_2366	OFB:NOVIGO_2367	OFB:NOVIGO_2368	OFB:NOVIGO_2369
Power supply	DC 12 V			
Nominal capacity (Ah)	100	100	150	150

## Accessories

Type	Designation	Order number
<b>Accessories for power supply / batteries</b>		
PHA2007-A1	Battery tray (19")	OFB:NOVIGO_2155

## Device combinations

The Novigo system is only compatible with the power supply and battery types listed in this document. Equivalent or similar types not listed in this document must not be used.

Battery type	Power supply		
	PP2003-A1	PP2004-A1	PP2005-A1
PA2006-A1	–	●	–
PA2007-A1	●	–	●
PA2008-A1	●	–	●
PA2009-A1	●	–	●
PA2010-A1	–	●	–
PA2011-A1	●	–	●
PA2012-A1	●	–	●
PA2013-A1	●	–	●
PA2015-A1	●	–	●
PA2016-A1	●	–	●
PA2017-A1	●	–	●

- Compatible
- Not compatible

## Order numbers

Type	Designation	Order number
<b>Preferred power supply <sup>1</sup></b>		
PP2003-A1	Merawex ZDSO-400-DR2 320 Ah	OFB:NOVIGO_2149
PP2004-A1	Merawex ZSP135 DR-7A-3 40 Ah	OFB:NOVIGO_2150
<b>Second source power supply <sup>1</sup></b>		
PP2005-A1	SLAT SON 24V 12A MS150	OFB:NOVIGO_2362
<b>Preferred batteries <sup>1</sup></b>		
PA2006-A1	Merawex MXL 40-12 Battery	OFB:NOVIGO_2151
PA2007-A1	Merawex MXL 65-12 Battery	OFB:NOVIGO_2152
PA2008-A1	Merawex MXL 100-12 FT Batt.	OFB:NOVIGO_2153
PA2009-A1	Merawex MXL 150-12 FT Batt.	OFB:NOVIGO_2154
<b>Second source batteries <sup>1</sup></b>		
PA2010-A1	PowerSonic PG-12V45 Battery	OFB:NOVIGO_2363
PA2011-A1	PowerSonic PG-12V65 Battery	OFB:NOVIGO_2364
PA2012-A1	Triathlon FT-12100H Battery	OFB:NOVIGO_2366
PA2013-A1	Triathlon FT-12150 Battery	OFB:NOVIGO_2368
PA2015-A1	Marathon XL12V70 Battery	OFB:NOVIGO_2365
PA2016-A1	SunBattery SB12-100HFT Batt	OFB:NOVIGO_2367
PA2017-A1	SunBattery SB12-150AFT Batt	OFB:NOVIGO_2369
<b>Accessories for power supply / batteries</b>		
PHA2007-A1	Battery tray (19")	OFB:NOVIGO_2155

<sup>1</sup>

- The preferred components are to be ordered preferably.
- Order the alternative second source components only in case the preference is not available.



You will find more information on the Novigo system and its components in the following documents:


Title	Document ID
<b>IT security policies</b>	
Novigo – IT security policies	A6V11773711
<b>System documentation</b>	
Novigo – planning	A6V11467812
'PACE-Design' – configuration	A6V11474760
Novigo – mounting / installation	A6V11467817
Novigo – operation	A6V11467803
<b>Data sheets</b>	
System data sheet	A6V11467196
19" cabinets	A6V11467209
Digital audio matrix	A6V11467202
Power amplifier	A6V11467204
Operating terminals	A6V11467198
Call stations and extensions	A6V11467200
Power supply and batteries	A6V11467207
Accessories and options	A6V11467211
<b>Loop isolator (100V)</b>	
Loop isolator (100V) - technical manual	A6V11571319
<b>Environmental declaration</b>	
Novigo – environmental declaration	A6V11948779

**Download center**

Related documents such as environmental declarations, CE declarations, etc., can be downloaded at the following Internet address:

<http://siemens.com/bt/download>


## Safety

	<p><b>⚠ CAUTION</b></p>
	<p><b>National safety regulations</b></p> <p>Failure to comply with national safety regulations may result in personal injury and property damage.</p> <ul style="list-style-type: none"> <li>• Observe national provisions and comply with the appropriate safety regulations.</li> </ul>


## Planning


Ensure that all used batteries connected to a power supply are of the same type.  
The system has a system voltage of 24 V. The emergency power supply therefore requires two 12 V batteries for each power supply.

## Installation

	<p><b>⚠ WARNING</b></p>
	<p><b>No internal automatic cutout for supply lines to consumers</b></p> <p>Risk of fire and injury due to short-circuit!</p> <ul style="list-style-type: none"> <li>• Adjust the cable cross-sections used to the rated value of the upstream fuse in accordance with local guidelines.</li> </ul>

The power supplies are suitable for use in a mains network with a nominal voltage of 230 V / 50 Hz (± 15 %).

	<p><b>NOTICE</b></p>
	<p><b>Damage due to overvoltage</b></p> <p>When connecting the power supplies to the mains, install a double-pole preliminary fuse with a maximum rating of 16 A to protect the system.</p>

	<p><b>NOTICE</b></p>
	<p><b>150 Ah batteries can't be mounted in 600 x 600 mm cabinets</b></p>

## Maintenance

Type PA20xx-A1 batteries require no maintenance.

## Disposal



The device is considered an electronic device for disposal in accordance with the European Guidelines and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.
- Dispose of empty batteries in designated collection points.

## Environmental compatibility

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The Environmental Product Declaration (EPD) for 'Novigo VANSYS' contains data and information on the product's environmentally compatible design features and its ratings; for example, its RoHS conformity, composition, packaging, environmental benefits, and disposal information.

You can obtain the document A6V11948779 via the following Internet address:

<https://siemens.com/bt/download>

Enter the document ID in the search field.

## Guarantee

The application-specific technical data is guaranteed only in combination with the Siemens products listed in the 'Device combinations' section. If third-party products are used, any guarantee provided by Siemens will be invalidated.

## Technical data

### Power supply

	PP2003-A1	PP2004-A1	PP2005-A1
<b>Ordering</b>	Preferred		Second source
<b>Supply</b>			
Power supply	AC 230 V +10 %/-15 %	AC 230 V +10 %/-15 %	AC 230 V +15 %/-15 %
Current consumption	Max. 2.7 A	Max. 1.5 A	Max. 2.0 A
Frequency	47...53 Hz		
Internal fuse	None Fuse dependent on cabinet	1x 230 V fuse 1x 24 V fuse	1x 230 V 6.4 A T fuse 1x 24 V 12.5 A T fuse 6x 24 V 32 A G fuse 3x 24 V 5 A F fuse
<b>Output</b>			
Nominal output current	32 A	5 A	32 A
Nominal output voltage	DC 24 V		
Load capacity of outputs to amplifiers <sup>1</sup>	6x 30 A	-	6x 40 A
Load capacity of auxiliary outputs 24 V	1x 6...10 A	-	3x 5 A
<b>Interfaces</b>			
Relay outputs	Faults: mains, battery, general	Faults: mains, battery	Faults: mains, battery, general
Relay type	Changeover contacts 1 A @ DC 30 V		Changeover contacts 1 A @ DC 24 V
I max. for all outputs	-		150 A
<b>Battery management</b>			
Float voltage at 25 °C	27.1 V		27.2 V +/-0.5 %
Max. charging current	16 A	-	12 A
Max. capacity of battery bank <sup>2</sup>	320 Ah Max. 2 banks	45 Ah	225 Ah
Min. capacity of battery bank <sup>2</sup>	65 Ah	35 Ah	65 Ah
Low charge error voltage	21 V	21.6 V	21.6 V +/-3 %
Permissible increase in resistance on each bank	50 mΩ	250 mΩ	16 mΩ
<b>Ambient conditions</b>			
Operating temperature	-5...+45 °C	-25...+55 °C +75 °C for max. 2 h	-5...+45 °C
Storage temperature	-25...+75 °C		-25...+85 °C
Operation in humid environments (without moisture condensation)	10...90 % rel.		20...90 % rel.
Storage in humid environments (without moisture condensation)	5...90 % rel.		10...90 % rel.

	PP2003-A1	PP2004-A1	PP2005-A1
<b>Dimensions and weights</b>			
Housing type	19", 1 HU	Cabinet for wall mounting	19", 2 HU
W x H x D mm	483 x 45 x 283	450 x 350 x 180	483 x 89 x 399
Weight	5.2 kg	11 kg Max. 42 kg (with batteries)	5.4 kg
<b>Protection category and color</b>			
Protection category (IEC 60529)	Dependent on cabinet	IP44	Dependent on cabinet
Color	Light grey; ~RAL 7035		
<b>Standards</b>	EN 54-4 EN 54-16 EN 50130-4 EN 55022 EN 60950	EN 54-4 EN 54-16 EN 50130-4 EN 55022 EN 60950	EN 54-4 EN 54-16 EN 50130-4 EN 55022 EN 60950 EN 62368-1

<sup>1</sup> When using amplifiers with an output over 500 W, two parallel outputs must be connected.

<sup>2</sup> The indicated capacity can be distributed between the total number of banks.

#### Preferred batteries

	PA2006-A1	PA2007-A1	PA2008-A1	PA2009-A1
Nominal capacity (Ah)	40	65	100	150
Voltage	DC 12 V			
<b>Ambient conditions</b>				
Operating temperature	Charging: -15...50 °C Discharging: -20...60 °C			
Storage temperature	-20...+70 °C			
Operation in humid environments (without moisture condensation)	10...90 % rel.			
Storage in humid environments (without moisture condensation)	5...90 % rel.			
<b>Dimensions and weights</b>				
W x H x D mm	165 x 170 x 197	167 x 178 x 348	110 x 285 x 394	110 x 287 x 551
Weight	12.20 kg	21.30 kg	34.50 kg	46.40 kg

## Second source batteries

	PA2010-A1	PA2011-A1	PA2012-A1	PA2013-A1
Nominal capacity (Ah)	45	65	100	150
Voltage	DC 12 V			
<b>Ambient conditions</b>				
Operating temperature	Charging: -15...+50 °C Discharging: -20...+60 °C		Charging: 0...+40 °C Discharging: -15...+50 °C	
Storage temperature	-20...+70 °C		-15...+40 °C	
Operation in humid environments (without moisture condensation)	10...90 % rel.			
Storage in humid environments (without moisture condensation)	5...90 % rel.			
<b>Dimensions and weights</b>				
W x H x D mm	165 x 170 x 197	168 x 210 x 260	110 x 285 x 394	110 x 287 x 551
Weight	14.50 kg	21.00 kg	34.50 kg	46.40 kg

	PA2015-A1	PA2016-A1	PA2017-A1
Nominal capacity (Ah)	65	100	150
Voltage	DC 12 V		
<b>Ambient conditions</b>			
Operating temperature	Charging: 0...+40 °C Discharging: -15...+50 °C		
Storage temperature	-15...+40 °C		
Operation in humid environments (without moisture condensation)	10...90 % rel.		
Storage in humid environments (without moisture condensation)	5...90 % rel.		
<b>Dimensions and weights</b>			
W x H x D mm	172 x 223 x 262	110 x 285 x 394	110 x 288 x 552
Weight	23.60 kg	34.50 kg	46.60 kg