

## PRODUCT SHEET

### Product image



### Product Identification

Table 1. Product designation, Part Number and E-Number

| Product designation          | Item No.          | E-number (SE) (sv) |
|------------------------------|-------------------|--------------------|
| Voltage Converter 24V-12V 1A | A-VC002401A01LM01 | 52 137 54          |

### Technical description

Compact DC/DC converter that converts 24 V DC to 12 V DC with up to 1 A output current. Low self-consumption and easy installation as an option in an existing power supply. Recommended continuous load up to about 0.8 A.

Table 2. Quick Facts

| Quick Facts                                  |                      |
|----------------------------------------------|----------------------|
| Supply voltage (V)                           | 27.3 V DC (24 V DC)  |
| Voltage out (V)                              | 13.6 V DC, (12 V DC) |
| Current output (A), max load current output. | 0.8 A, peak 1 A      |
| Accessories for                              | Outdoor Enclosures.  |

### Areas of application

Table 3. Areas of application

| Areas of application                                                                                                             | Yes | No |
|----------------------------------------------------------------------------------------------------------------------------------|-----|----|
| Used where a different, lower voltage level is required to operate, for example, door readers, locks and other connected devices | ✓   |    |

### Electrical data

Table 4. Electrical data

| Electrical data          |                      |
|--------------------------|----------------------|
| Supply voltage           | 27.3 V DC (24 V DC)  |
| Standby consumption      | 0.01 W               |
| Voltage out              | 13.6 V DC, (12 V DC) |
| Current (A) <sup>a</sup> | 0.8 A, peak 1 A      |

<sup>a</sup>Power outlet/load is specified as max, normal current output should be 80% of max.

Table 5. Printed circuit boards and Internal power consumption

| Circuit Boards              | Internal power consumption | Other. info |
|-----------------------------|----------------------------|-------------|
| Voltage-converter 24-12V 1A | 0.08 mA                    |             |

### Load outputs

Table 6. Load outputs

| Load outputs           |     |
|------------------------|-----|
| Number of load outputs | ! 1 |

Table 7. Total maximum load and recommended load.

| Model | Recommended total load (80%) <sup>a</sup> |
|-------|-------------------------------------------|
| 1 A   | 0.8 A                                     |

<sup>a</sup>Typically, 70-80% of the maximum load is recommended in continuous operation, depending on the thermal margins of the product.

### Alarm and protection

Table 8. Alarm and protection

| Alarm and protection                     | Yes | No |
|------------------------------------------|-----|----|
| Electronic current limiting <sup>a</sup> | ✓   |    |

<sup>a</sup>Output is electronically limited, so additional load securing is not required.

### Communication and Indications

Table 9. Communication and Indications

| Communication and Indications | Yes | No | Other. info.          |
|-------------------------------|-----|----|-----------------------|
| Communication                 |     | ✗  |                       |
| Indicators/LEDs               | X   | ✗  | LED on circuit board. |

### Enclosure and Mechanics

Table 10. Enclosure and Mechanics

| Enclosure and Mechanics |                                                        |
|-------------------------|--------------------------------------------------------|
| Type                    | Printed circuit board, product does not have enclosure |

### Assembly, installation and eligibility requirements

Table 11. Fitting

| Fitting                                               | Yes | No |
|-------------------------------------------------------|-----|----|
| In product (optionally fitted in compatible product). | ✓   |    |

Table 12. Installation

| Installation          | Yes | No |
|-----------------------|-----|----|
| Installed in product. | ✓   |    |

### Dimensions, weight and packaging information

Table 13. Dimensions

| Dimensions, (WxHxD). | Dimensions with packaging <sup>a</sup> . |
|----------------------|------------------------------------------|
| 11 x 16 x 127mm      | 100 x 210 x 155 mm                       |

<sup>a</sup>Dimensions (WxHxD) of product and packaging may differ, this is because the product may be oriented differently in the package.

Table 14. Weight

| Net weight         | Weight with packaging |
|--------------------|-----------------------|
| 0.09 kg, (9 grams) | 0.1 kg                |

Table 15. Packaging

| Packaging                               |                                                                                                                    |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Packaging                               | Cardboard and impact protection in cardboard.                                                                      |
| Quantity in pack                        | 1 pc.                                                                                                              |
| Packaging Type (GS1 T0137)              | BX box.                                                                                                            |
| Conditions EUR pallet                   | EUR pallets may not be stacked during transport or storage. Stacking may result in damage to product and packaging |
| Transport environment                   | The product must be protected from condensation and direct precipitation during transportation.                    |
| Transport temperature (without battery) | -30 °C to +70 °C                                                                                                   |
| Storage environment                     | Dry indoor environment, protected from condensation. Relative humidity: max 95%, non-condensing                    |
| Storage temperature without batteries   | -20 °C to +60 °C                                                                                                   |

**The accessories fits in**

24 V power supply from Milleteknik with at least one free (24 V) load output.

**Contact**

Table 16. Contact

| Department                   |                                  |
|------------------------------|----------------------------------|
| Switchboard                  | 031-340 02 30                    |
| Support and technical issues | support@milleteknik.se           |
| Sales                        | sales@milleteknik.se             |
| WWW                          | www.milleteknik.se               |
| Address                      | Ögärdesvägen 8B, 433 30 Partille |

**About this information**

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Publication date 2026-07-09

## COMPLIANCE AND REGULATORY COMPLIANCE

### Delivery time, warranty and terms

Table 17. Delivery time, warranty and terms

| Delivery time, warranty and terms |                                                                                                                                                        |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warranty period <sup>a</sup> .    | The product has a two (2) year warranty against manufacturing defects.                                                                                 |
| Special warranty conditions       | See also general terms and conditions.                                                                                                                 |
| General Terms and Conditions      | ALEM09 with exceptions, see: <a href="http://www.milleteknik.se/conditions/">www.milleteknik.se/conditions/</a>                                        |
| Support                           | Telephone support and email support during the warranty period are free of charge. For spare parts that are not covered by warranty, there is a charge |
| Delivery and stock                |                                                                                                                                                        |
| Delivery time <sup>b</sup> .      | 2 working days. Or as per agreement. Delivery from factory, transportation time is added.                                                              |

<sup>a</sup>If the device is purchased through a wholesaler or other supplier, other warranty conditions may apply.

<sup>b</sup>In the case of larger orders, delivery time increases, acc. to agreement.

### Operation and maintenance

Table 18. Operation

| Operation                                          | Data                          | Other. info                                 |
|----------------------------------------------------|-------------------------------|---------------------------------------------|
| Environment                                        | Indoor environmental class 1. |                                             |
| Operating temperature (recommended)                | +15°C to +25°C                |                                             |
| Operating temperature (permissible) <sup>a</sup> . | +5°C to +40°C                 | Class 1 according to EN 50131-6/EN 60839-11 |

<sup>a</sup>Specifies the permissible ambient temperature range in which the product can operate without damage. See also table on battery life.

Table 19. Maintenance

| Yes | No | Interval | Other. info       |
|-----|----|----------|-------------------|
|     | ✓  |          | Maintenance-free. |

### Certifications and approvals

Table 20. Approved according to

| Complies with  | Directives                                                   |
|----------------|--------------------------------------------------------------|
| C.E.           | CE marking according to Regulation (EC) No 765/2008          |
| RoHS           | RoHS Directive 2011/65/EU, including amendment (EU) 2015/863 |
| EMC            | EMC Directive 2014/30/EU                                     |
| Electric (LVD) | Low Voltage Directive 2014/35/EU                             |

### Environmental data

Table 21. Environmental data

| Environmental data                 | J/N | Informație                                                                    | Other. info. |
|------------------------------------|-----|-------------------------------------------------------------------------------|--------------|
| Building Product Declaration (BPD) | ✓   | Yes, see iBvd at <a href="http://www.milleteknik.se">www.milleteknik.se</a> . | -            |

| Environmental data                             | J/N                       | Informație                                                                                                                                                                                                                                                                                                              | Other. info.                                                                                                       |
|------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| REACH Information Obligation (EC) No 1907/2006 | ✓                         | Yes, see the DoC at <a href="http://www.milleteknik.se">www.milleteknik.se</a><br>The product complies with REACH Regulation (EC) No 1907/2006.                                                                                                                                                                         | If empty, the product is not covered.                                                                              |
| SVHC substances, CAS/EC                        | ✓                         | Yes, lead, 7439-92-1/231-100-4                                                                                                                                                                                                                                                                                          | For text, see iBvd at <a href="http://www.milleteknik.se">www.milleteknik.se</a> . If blank, substance is missing. |
| Subject to the RoHS Directive, (EU) 2015/863   | ✓                         | Yes, see the DoC at <a href="http://www.milleteknik.se">www.milleteknik.se</a>                                                                                                                                                                                                                                          |                                                                                                                    |
| WEEE 2012/19/EU                                | ✓                         | The product contains electrical components or wiring and is covered by the WEEE Directive (2012/19/EU).                                                                                                                                                                                                                 | If empty, the product is not covered. End-of-life products must be returned to a recycling centre                  |
| Battery Regulation (EU) 2023/1542              | X                         |                                                                                                                                                                                                                                                                                                                         |                                                                                                                    |
| SCIP No 2008/98/EC                             | ✓                         | Yes, registered under the EU Waste Directive where applicable, (2008/98/EC).                                                                                                                                                                                                                                            | If empty, no SCIP number is needed.                                                                                |
| Conflict minerals (EU) 2017/821                | X/<br>X/<br>X/<br>X/<br>✓ | No=Gold, Tungsten, Tantalum, Cobalt.<br>Yes=Tin                                                                                                                                                                                                                                                                         | Tin in solders in printed circuit boards purchased through a Swedish supplier.                                     |
| Contains nanomaterials: EC 1272/2008           | X                         | The product does not contain nanomaterials.                                                                                                                                                                                                                                                                             |                                                                                                                    |
| Ecodesign 2009/125/EC                          |                           | Milleteknik's products are intended for professional use and are therefore not directly covered by the Ecodesign Regulation (EU 2019/1782). As some components may be covered, we nevertheless disclose relevant information <sup>a</sup> , where applicable, to provide our customers with confidence in their choice. |                                                                                                                    |

| Environ-mental da-ta                                                                                                                                           | J/N | Informație                                                                                                                                                                                                                                                                | Other. in-fo. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Machine Directive<br><br>2006/42/E<br>C                                                                                                                        |     | The product is part of electrical systems, is sub-ject to the relevant electrical and safety directives and is not a machine according to the Machinery Directive (2006/42/EC).<br><br>Will be replaced by Machinery Regulation (EU) 2023/1230, which will apply in 2027. |               |
| The product is designed for a long service life, which reduces the environmental impact. End-of-life products are handed over to the nearest recycling centre. |     |                                                                                                                                                                                                                                                                           |               |

<sup>a</sup>Standby consumption and power.



**Manufacturer and country of origin**

Table 22. Manufacturer and country of origin

|                           |                       |
|---------------------------|-----------------------|
| Manufacturer <sup>a</sup> | Milleteknik AB        |
| Customs State. Nos.       | 85044095 <sup>b</sup> |
| Country of origin         | Sweden                |

<sup>a</sup>Manufacturer is the trademark indicated on the product, regardless of what is stated in this product sheet.  
<sup>b</sup>Verify with the Customs Ombud/Customs Service for export/import; alternative classifica-tion 85044055 may become applicable if the product is assessed as a battery charger.

## APPENDIX

### Eligibility requirements, installation

Eligibility requirements vary between countries. The table summarizes national requirements for fixed installation and connection of equipment with a plug socket, respectively.

Options on the secondary side of the product, such as 12 V, 24 V or 48 V DC, are connected according to the respective instructions. Work on the network connection of the product shall be carried out in accordance with national eligibility requirements

Table 23. Eligibility requirements by country. Applies only to the installation of this product in a fixed network connection

| Permis-<br>sion Re-<br>quire-<br>ments<br>for In-<br>stalla-<br>tion | Fixed<br>instal-<br>lation<br>(230<br>V) | Plug | Other. info                                                                                                                                                                                                                     |
|----------------------------------------------------------------------|------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sweden                                                               | ✓                                        | X    | Fixed installation may be performed by technicians but shall be under the responsibility of a qualified installer. (Electrical Safety Act, SS 436 40 00) Plug may be connected without authorization.                           |
| Norway                                                               | ✓                                        | ✓    | Requirements for qualified electricians also for equipment with a plug socket in fixed installations. (NEK 400, DSB)                                                                                                            |
| Finland                                                              | ✓                                        | X    | Plug may be connected without authorization. (Tukes, SFS 6000)                                                                                                                                                                  |
| Denmark                                                              | ✓                                        | X    | Plug may be connected without authorization. (Safety Board)                                                                                                                                                                     |
| Germany                                                              | ✓                                        | X    | All fixed installations require a qualified electrician according to VDE 0100. Plug sockets may be connected without authorization, but only by person with basic electrical knowledge ("Elektrotechnisch unterwiesene Person") |

### Reference table: environmental classes according to EN 50130-5 (referred to in EN 50131-6)

Table 24. Reference table: environmental classes according to EN 50130-5 (referred to in EN 50131-6)

| Class                 | Type                                                                        | Temperature range |
|-----------------------|-----------------------------------------------------------------------------|-------------------|
| Environmental Class 1 | Heated indoors (type of office/residence).                                  | +5°C to +40°C     |
| Environmental Class 2 | Generally indoors (type warehouses/stairwells, not temperature controlled). | -10°C to +40°C    |
| Environmental class 3 | Protected outdoors.                                                         | -25°C to +50°C    |
| Environmental class 4 | Generally outdoors.                                                         | -25°C to +60°C    |

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Publication date 2026-07-09