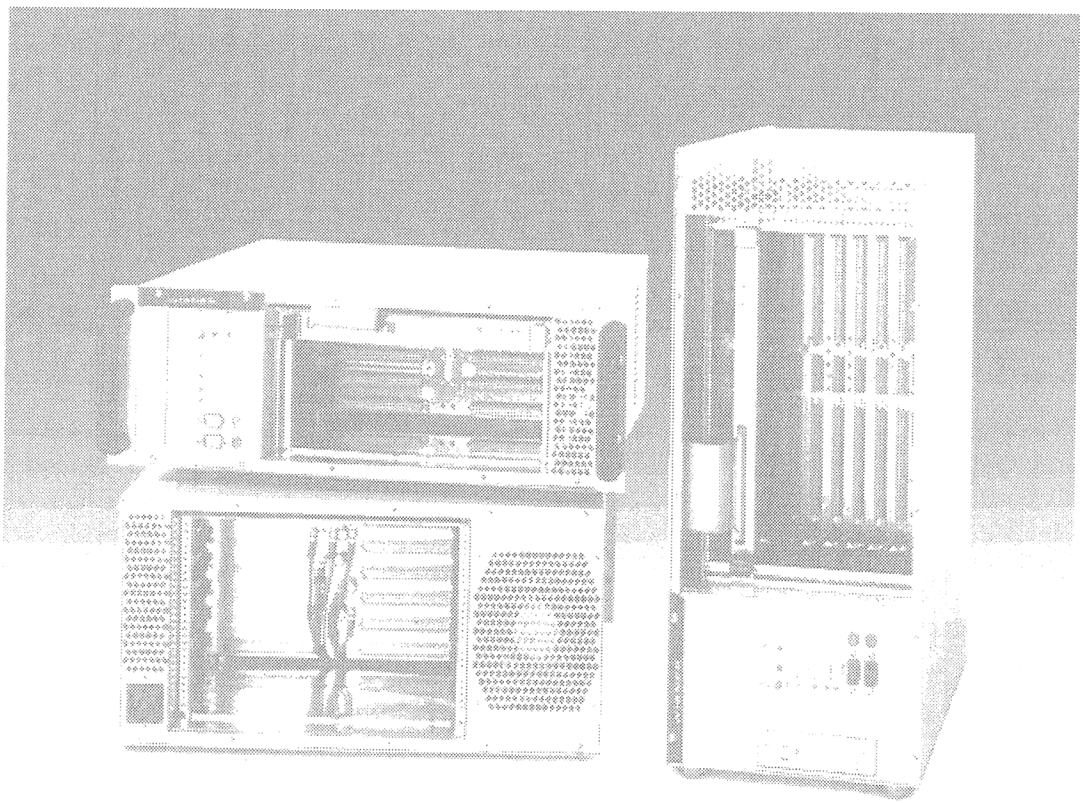


VME Minicrate Series 100

User's Manual

Plein & Baus GmbH
D-51399 Burscheid (Germany)
Müllersbaum 20
Tel.: (0 21 74) 6 78-0
Fax: (0 21 74) 67 85 55

*00457.A0

General Remarks

The only purpose of this manual is a description of the product. It must not be interpreted as a declaration of conformity for this product including the product and software.

W-IE-NE-R revises this product and manual without notice. Differences of the description in manual and product are possible.

W-IE-NE-R excludes completely any liability for loss of profits, loss of business, loss of use or data, interrupt of business, or for indirect, special incidental, or consequential damages of any kind, even if **W-IE-NE-R** has been advises of the possibility of such damages arising from any defect or error in this manual or product.

Any use of the product which may influence health of human beings requires the express written permission of **W-IE-NE-R**.

Products mentioned in this manual are mentioned for identification purposes only. Product names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies.

No part of this product, including the product and the software may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form by any means with the express written permission of **W-IE-NE-R**.

Packaging

To prevent transport damages, the front angels and rubber feet are normally unmounted and packed separately together with the power cord. Depending of the future usage either 19" angles or rubber feet (or both) has to be fixed to the given points by use of the delivered screws.

Mains Voltage

The VME Minicrates 174 and 195 are equipped with a "World"- mains input, which works properly form 94VAC up to 264VAC and within a frequency range of 47 to 63Hz.

Before connecting to the mains please double-check correspondence.

Safety

After connecting the Minicrate to the mains, the mains input module is permanent powered. Filter and storage capacitors of the power factor correction module are charged with more than **420VDC**. The power switch at frontpanel operates as a DC on/off switch only and not as a mains breaker. **Therefore it becomes dangerous if the box cover is open and the floppy cage has been removed. In this case a lot of components on high voltage potential get touchable!**

Before starting this kind of work remove the Minicrate from mains and wait a couple of minutes with your activities!

Declaration of Conformity

Declaration de Conformitè - Dichiarazione di Conformita – Konformitätserklärung

Art. 10.2 of 89/336 and 89/392 / ECC

W-IE-NE-R

Plein & Baus GmbH

---

declare under our own responsibility that the product

declarons sous notre seule responsabilité que le produit

dichiariamo sotto nostra exclusiva Responsabilita´che il Prodotto

erklärt in eigener Verantwortung, dass das Produkt

VME – Mini crate 174, 195 (A, C, D)

Item: 0300.x1xx, 0373.x1xx

to which this declaration relates, is in conformity with the following standards or normative documents :

auquel cette declaration se refait,est conforme aux normes ou aux autres documents normatifs:

al quale si riferisce la Dichiarazone, e´ in conformita´ alle Seguenti normative:

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt:

1.	EN 50 081 - 1
2.	EN 61 000 3 - 2
3.	EN 50 082 - 1
4.	EN 60 950
Conditions:	Use in conformity of the definition and equipped with fully closed slots by EMC front panels and cover sheets.
Bedingungen:	Bestimmungsgemäßer Gebrauch, bei dem alle Slots mit EMC Frontplatten bestückt und Abdeckbleche angebaut sind.

Name and signature of authorized person	Place and Date
Nome et signature du signataire autorisé	Lieu et date
Nome de Firma della Persona autorizzata	Luogo e Data
Name und Unterschrift des Befugten	Ort und Datum

Burscheid 22.12.1998

Dipl. Ing. Jürgen Baus
Director

Table of contents:

1 Device description

Two different dimensions are available: 19" wide 3U high box for 7 slots, Type 174
19" wide 4U high box for 9 slots, Type 195

Both can be equipped with either VME-, VME 430 or 64x backplanes, also VME64xP is possible.

The module cage mechanics are made alternatively with:

1. Transversal bars and Cern spec. front members for standard and Cern spec. VME modules.
2. IEEE front members and ESD module guides according to IEEE 1101.10/11

The "front members" are of same type not only for the VME cage but also for the transition cage

The versions of the 100- types are fit for front side modules of 6U x 160mm and for transition modules at rear side with the same format.

For special request the 200- types are available with a front cage extended to 220mm depth instead of 160mm while the transition depth has been reduced to 100mm.

A frame for installation of two disc drives, hard- and floppy disc, is accessible after removing of the box cover. Different chassis holes makes the wiring connections easy inside the VME Minicrate. Between front and transition modules a screened wiring channel exists, large enough to take also voluminous cabling.

Both, the front and the transition cage are outfitted with a removable coverplate to keep on a certain airflow through the modules, if only a few modules are inserted. In that case the coverplates prevents frontal air inlet (air by pass). For optimized cooling the top cover should be closed, too.

The whole box is sufficient cooled by 150mm diameter blower with 340m³ /h air flow. When the used module power allows, the fan speed may be reduced to lower RPM. A "fan speed" LED will be flashing proportional to the turns of the fan. An integrated temperature sensor prevents overheating. In case of high temperature the fan will speed up to the maximum turns immediately. If over temperature level exceed the power supply will trip off.

The EN 50 081 for generic emissions as well as the EN 50 082 for immunity standards, in particular EN 55 011 RFI rejection (incl. VDE 0871 class B) and EN 55 022 electromagnetic compatibility is accomplished. The insulation performs the EN 60 950, ISO 380, VDE 0805 (SELV)! Furthermore are considered UL 1950, UL 1012, UL 478, C22.2.950, C22.2.220/234.

Therefore the power supply of the VME Minicrate can fulfil the CE rules comprehensively and will CE marked for use for all power nets.

1.1 Technical Data

Module cage formats

	Types 1xx	6U×160mm, VME,	Transition 6U × 160mm
	Types 2xx	6U×220mm, VME,	Transition 6U × 100mm
	Types 1xx / 2xx	Suffix VSB	Transition 3U to J2
Crate Size	Type 174 / 274	7 Slot	19" or 435mm × 4U (177mm), 430mm depth
	Type 195 / 295	9 Slot	19" or 435mm × 5U (222mm), 430mm depth
		Tower: 435mm height,	Desktop: 435mm width,
Mains input	wide range:	94...264VAC, 47-63Hz, 400Hz on request	
	inrush current:	limited by cold-start-circuit, max. 20A	
	input current:	**CE** according to EN 61000-3-2, IEC 555	
		power. fact. 0,99 (230VAC),	
Isolation	Inp.-outp.	**CE** acc. to EN 60950, ISO 380, VDE 0805, UL 1950, C22.2.950	
Regulation	static:	< 25mV	(0%↔100% load, ±15% mains)
	dynamic :	< 100mV	(±25% load)
	recovery time:	within ±1%	within ±0,1%
		0,2ms	1,0ms (±25% load)

Noise and ripple: <15mV$_{pp}$, typical <10mV$_{pp}$ (0-20MHz), 3mV$_{rms}$ (0-2MHz)

RFI-rejection: **CE** EN 50081-1, FCC (emission), EN 50082-1 or 2 (immunity)

Operation: 0...40°C without derating, rel. humidity 30...80%, non condensing
atmospheric pressure 70...110kPa, for 600W continuos power >85kPa

Storage: -30°C up to 85°C

Temp.-coefficient: < 0,2% / 10K

Stability: 10mV or 0,1% within 24 hours 25mV or 0,5% within 6 months

Current limits: 115% of rated current values!

Overvoltage protection: trip off, protection against broken sense lines

DC Off (trip off): within 5ms if +5%, -2,5% deviation from adjusted nominal values, afteroverload, overheat, overvoltage, undervoltage (bad status) and fan fail
trip off voltages and currents adjustable, processor controlled.

Internal temperature limits: Cut off: 110°C heat sink, 70°C ambient, >45°C module exhaust accelerates fan speed to 100%

Cooling air flow: 340m^{3}h (at max. fan speed)

Efficiency: ca. 80%

M T B F at full load:

	Fan	>25 000 h (40°C), >65 000 h (25°C) ambient temperature
	Electronics	>85 000 h (40°C)

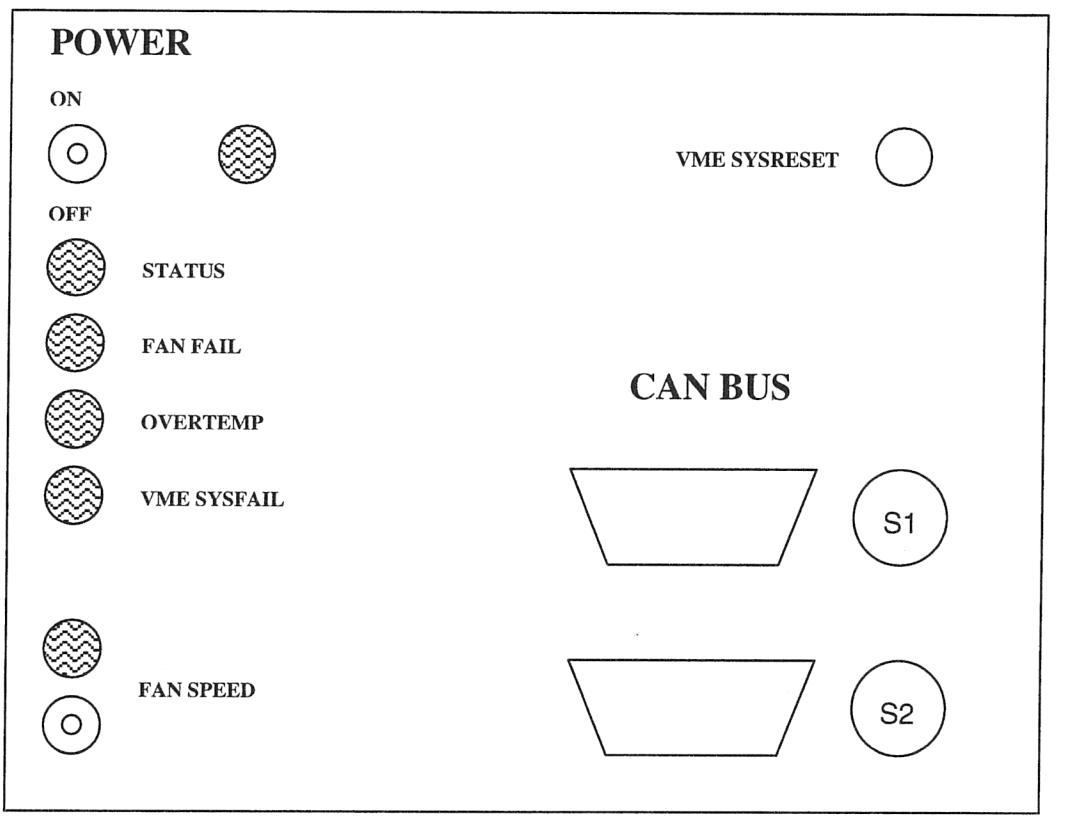
Outputs Type	+5V	+12V	-12V	-5,2V	-2V	+15V	-15V	3,3V	48V	Mains 94V	Mains >186V
174, 195	45A	6,8A	6,8A					*	*	390W	390W
174C, 195C	45A	6,8A	6,8A	45A	22A			*	*	650W	675W
174C15, 195C15	45A	6,8A	6,8A	45A	22A	5,5A	5,5A	*	*	650W	835W

* on request

Option: CANbus interface for Crate remote control. **W-IE-NE-R** CAN*trol* Protocol
Additional temperature sensors for airflow control

1.2 MINICRATE Operating Elements

Frontpanel



1.3 Switches

POWER	push up: switch device on push down: switch device off
FAN SPEED	push up: increase fan speed push down: decrease fan speed
VME SYSRESET	generate a VME bus system reset
S1, S2	CAN bus control (see below)

1.4 LED's

POWER (green, 5 mm)	Lighting: The power supply is switched on
STATUS (green, 3 mm)	Lighting: All voltages are within limit Blinking: Mains ac failure
OVERTEMP (yellow, 3 mm)	Blinking: Temperature has reached the warning level. The fan is switched to full speed. Lighting: Temperature has reached failure level. The power supply has switched off.
VME SYSFAIL (red, 3 mm)	Lighting: A VME module pulls the VME bus sysfail line to low level
FAN SPEED (red, 3 mm)	Lighting relative to the fan speed. (off: full speed, blinking: slower, continuos lighting: slowest)

2 CAN bus interface (optional)

By use of an **optionally** possible interface inside the VME Minicrate all important crate parameters can be monitored and the fan can be single controlled. The *CANbus* is designed to control up to 126 Crates (if 127 is reserved for common call).

Depending from the distance between the Minicrate and the host the transmission rate can be selected up to 1,6Mbit/s by use of a simple flat cable.

2.1 Technical details of W-IE-NE-R - CANbus

CAN controller type:	P80C592 (CAN 2.0A protocol)
Physical Layer:	differential according to ISO 11898
Transceiver:	PCA82C250, opto-isolated, rise and fall slope control
CAN connector:	Two 9-pin DSUB (male, female) according to CiA DS 102-1
Protocol:	CAN-Bus Interface for **W-IE-NE-R** Crate Remote Control This protocol is described in a separate document (Part No. *00183.A0)

Pin	Line	Comment
1	-	reserved by CiA
2	CAN_L	CAN_L bus line (dominant low)
3	GND	Ground
4	-	reserved by CiA
5	-	reserved by CiA
6	-	
7	CAN_H	CAN_H bus line (dominant high)
8	-	reserved by CiA (failure signal)
9	-	

Can Bus Node Address:

Selectable with the 2 hex-switches S1 (high) and S2 (low). Valid addresses are hex 00 (can bus disabled) to hex 7F (127).

Factory default address: 01

Baudrate:

The baudrate is selectable with the two switches S1 and S2:

1. Switch the high one (S1) to hex C (for config).
2. Then select the baud rate index with the low switch (S2)
3. Wait at least 5 seconds
4. Select your preferred can bus node address with the two switches.

Factory default baudrate: 1 Mbit/s

Index	Max. Distance	Bit Rate	Type
0	10 m	1.6 Mbit/s	high- speed (needs termination)
1	40 m	1.0 Mbit/s	
2	130 m	500 kbit/s	
3	270 m	250 kit/s	
4	530 m	125 kbit/s	
5	620 m	100 kbit/s	low-speed
6	1300 m	50 kbit/s	
7	3300 m	20 kbit/s	
8	6700 m	10 kbit/s	
9	10.000 m	5kbit/s	