

Operator's manual

Converter
FUE-M

Model	FUE-M
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Language	en

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The machine on the cover may have special equipment (options).

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Wied Dokument 154529

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Translation of the original operator's manual



CALIFORNIA Proposition 65 Warning



WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.



WARNING

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.



WARNING

Cancer and Reproductive Harm -
www.P65Warnings.ca.gov.



WARNING

Batteries, battery posts, terminals and related accessories contain lead and lead compounds, and other chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. WASH HANDS AFTER HANDLING.



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1 Preface

This operator's manual contains important information and procedures for the safe, proper and economic operation of this e-control. Carefully reading, understanding and observing is an aid to avoiding hazards, repair costs and downtime, and therefore to increasing the availability and service life of the e-control.

This operator's manual is not a manual for extensive maintenance or repair work. Such work should be carried out by the Wacker Neuson service or by technically trained personnel. The e-control should be operated and maintained in accordance with this operator's manual. An improper operation or improper maintenance can pose dangers. Therefore, the operator's manual should be constantly available at the location of the e-control.

Defective machine parts must be exchanged immediately!

If you have any questions concerning operation or maintenance, a Wacker Neuson contact person is always available.

2 General

2.1 About this operator's manual

2.1.1 Prerequisites for operating the e-control

The following prerequisites must be met:

- operating personnel must have received training so that they know how to operate the e-control safely, and must have read and understood this operator's manual in its entirety;
- maintenance personnel must maintain and repair the e-control in such a way that there is no danger posed to people, environment and property.

2.1.2 Availability of the operator's manual

The operator's manual must be available to everyone working with or on the e-control at all times.

2.1.3 Accident prevention regulations

In addition to the notes and safety instructions in this manual, the local accident prevention regulations as well as the national health and safety regulations apply.

2.1.4 More information

This manual applies to different models of e-control. For this reason, some figures may vary slightly in appearance from the e-control purchased. Depending on the model, there may be descriptions of components that are not included in the standard package.

The information contained in this manual is based on e-controls manufactured up to the time of printing. The manufacturer reserves the right to change this information without prior warning. The manufacturer shall immediately include any modifications or additions in this manual.

2.2 Figures used in this operator's manual

2.2.1 Instructions for actions and results

Instructions for actions are labeled with triangles in the order in which they must be carried out. The results of the actions taken are labeled with ticks.

Example:

- ▶ Turn the main switch to the "I/ON" position.
- √ The switching cabinet is now energized

2.2.2 Safety instructions

Safety instructions are always labeled with a signal word, and sometimes also with a hazard-specific symbol (see Chapter 2.2.3 Symbols used). The following signal words and hazard levels are used:

 DANGER!	
Immediate danger!	Failure to observe the safety instructions will result in serious injury or death.
 WARNING!	
Potentially dangerous situation!	Failure to observe the safety instructions could result in serious injury or death.
 CAUTION!	
Potentially dangerous situation!	Failure to observe the safety instructions could result in minor to moderate injury.
CAUTION!	
Potentially dangerous situation!	Failure to observe the safety instructions could result in damage to property or environmental pollution.

2.2.3 Symbols used

The following symbols may be used in this operator's manual and on this e-control:

Warning signs

	General warning
	Warning of hazardous electrical voltage
	Warning of corrosive substances
	Warning of flammable materials



	Warning of harmful or irritant surfaces
	Warning of hot surfaces
	Warning of laser beams
	Warning of automatic start-up
	Warning of moving rollers and becoming caught in these
	Environmentally hazardous substance

Tab. 1 Warning signs

Mandatory signs

	Observe the operator's manual
	Wear protective clothing
	Wear safety glasses
	Wear ear protection
	Wear protective gloves
	Wear safety shoes
	Release/activate before work

Tab. 2 Mandatory signs

Prohibition signs

	Do not enter the area
	Fire, naked flames and smoking are prohibited
	Do not place your hands inside
	Release/activation prohibited
	No access for unauthorized parties

Tab. 3 Prohibition signs

2.2.4 General information

	Note Describes general information and recommendations.
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2.3 EC Declaration of Conformity or Declaration of Incorporation

The EC Declaration of Conformity can be found at the end of this operator's manual.

2.4 Warranty and liability

The manufacturer's "General Terms of Sale and Delivery" apply.

2.5 Supplementary documents

	The safety instructions and instructions for actions in operator's manuals provided by component manufacturers remain relevant and are not replaced by this operator's manual. ▶ Please refer to these operator's manuals before any work on the components. ▶ These operator's manuals must be accessible to anyone working on the components.
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In certain cases, the following documents may also be relevant and need to form part of this operator's manual:

- operator's manuals for supply components
- electrical documentation plus parts list
- technical specifications, performance specifications
- safety data sheets for used media
- EC Declaration of Conformity

2.6 Product monitoring

Inform the manufacturer about any

- accidents
- potential sources of danger
- anything incomprehensible in this operator's manual

2.7 Proper use

The e-control may only be used in the application cases agreed in writing.

- The e-control may only be operated within the prescribed performance limits (see Technical Data).
- The e-control must only be operated in an industrial environment.
- The operator's manual and instructions for maintenance and repair must be observed in order to ensure proper use.

2.8 Power supply specifications

See Electrical documentation and Technical data (point 9).

2.9 Environmental conditions for operation and storage

See contract documentation and, where applicable, any other supplementary documents provided.

2.10 Safety information

2.10.1 Reasonably foreseeable misuse

Any alternative use or use that is not in accordance with the intended purpose will be considered misuse. The manufacturer shall not be held liable for damage resulting from this.

The manufacturer shall assume no liability for any modifications or incorrect assembly, installation, commissioning, operation, maintenance or repair.

Only genuine parts made by the manufacturer are permitted as genuine parts and accessories. Genuine parts and accessories not supplied by the manufacturer are not tested for operation and may have a detrimental effect on operational safety. The manufacturer shall assume no liability for damage caused by use of non-approved genuine parts and accessories.

2.10.2 Refurbishments or modifications by the user

Refurbishments or modifications of the e-control by the user are not permitted and may result in loss of EU conformity!

2.10.3 Residual dangers

Potential residual dangers during operation, maintenance or repair are outlined in the respective sections of this operator's manual.

2.10.4 Personnel requirements

Only authorized personnel may work on the e-control, and must be familiar with the relevant safety equipment, and rules and regulations before beginning work.

The following personnel are authorized:

Operating phase	Necessary competence
Regular operation	Instructed personnel
Service and maintenance	Qualified electricians
Repair	Qualified electricians

Tab. 4 Personnel requirements

2.11 Protective devices

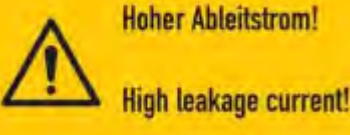
2.11.1 Position of control technology protective devices

See electrical documentation or supplementary documents

2.11.2 Position of warning and mandatory signs

⚠ WARNING!	
Risk of injury if warning and mandatory signs are missing ► Missing or damaged warning and mandatory signs must be replaced immediately.	

The warning and mandatory signs should be fixed in place close to the nameplate. The warning and mandatory signs are shown below.

Item	Label	Description
1		■ Attention: electric shock. ■ Do not open housing. ■ Read operator's manual.
2		■ High leakage current
3		■ Caution: residual voltage

3 Preparation for use

3.1 Delivery

3.1.1 Condition upon delivery

The e-control is delivered fully assembled, wired internally, and ready for connection, having undergone a functional check.

To prevent damage during transportation, individual components may need to be unscrewed and stored securely if they are protruding.

3.1.2 Standard package

For the standard package, see the contract documentation.

3.2 Installation location requirements

3.2.1 Ground lift capacity requirement

The ground must have a sufficient lift capacity.

Weight specifications can be found under Point 9, Technical data.

3.3 Transport and Storage

3.3.1 Transport

CAUTION!	
Damage caused by tipping or falling over If no securing devices are used during transportation, the e-control may tip or fall over. ► Secure the load before transportation to prevent this.	
CAUTION!	
Attachment damage Attachments may get damaged under the strain of a mechanical load. ► Only pick up and move the parts at the labeled lifting points.	

- Use suitable lifting gear to transport the e-control to the installation location.

3.3.2 Storage

See "Contract-related data"

3.4 Unpacking and set-up

⚠ WARNING!	
Sharp objects (e.g. nails, clamps) on wooden packaging pose a risk of injury ► Use a suitable tool. ► Use suitable personal protective equipment.	

	The e-control is designed for set-up on even ground. If the set-up is done differently (e.g. raised), the operator must ensure that • the main switch has unobstructed access at all times, and • that the operator's controls and maintenance points can be
---	--

- Remove the protective film and lashing straps.

If the packaging is made from wood:

- Take care when opening the wooden crate
- Detach the e-control from the wooden base.

3.5 Disposing of the packaging material

- Dispose of the packaging in an environmentally friendly way.

3.6 Preparations before installation, where applicable

See "Contract-related data"

3.7 Installation and assembly

3.7.1 Electrical connection

⚠ DANGER!	
	Danger posed by electrical voltage Elements carrying voltage are exposed when the switching cabinet is open. ▶ Work in the switching cabinet should be conducted by qualified electricians with the electrical power disconnected. ▶ Pull out the mains plug and disconnect the electrical power before working in the switching cabinet.

- ▶ Connect the electrical supply voltage, electrical signals and electrical consumers as outlined in the relevant electrical documentation.
- ▶ **No insulation tests (insulation resistance) should be conducted on the frequency inverter's control circuit using an insulation tester**

3.8 Prior to commissioning

- ▶ Check to ensure all contact screws are firmly seated.
- ▶ Test the grounded conductor.
- ▶ Test the input voltage.

4 Contract-related data

4.1 Environmental conditions for operation and storage

Permitted environmental conditions during operation	
Ambient temperature	0°C–40°C
Max. altitude above sea level	Installation location max. 1000 m The output performance will decrease by 3% for every 500 m above this, up to a maximum of 2500 m (91%).
Permitted air humidity	Max. 90% relative humidity (no condensate formation)
Environmental condition	No aggressive gases, no oil mist, set-up free of dust and grime
Vibration resistance	Max. 5.8 m/s ² (JIS 60068-2-6)

Permitted environmental conditions during storage	
Ambient temperature	-20°C – 50°C
Relative air humidity	Max. 90% relative humidity (no condensate formation)

Tab. 5 Environmental conditions for operation and storage

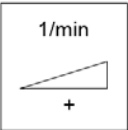
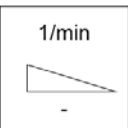
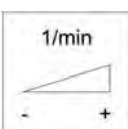
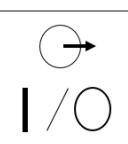
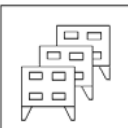
5 Functional characteristics

The e-control is designed for vibration motor rev. control and should only be used for these types of application. Operation in potentially explosive areas is prohibited.

6 Using the e-control

6.1 Using the operating elements (touch button, circuit breaker, etc.)

6.1.1 Function of operator's controls

Component/ control element	Type	Function/ display
	Illuminated push button	Switch e-control on/off
	Push button	Increase engine speed
	Push button	Decrease engine speed
	Hand-held potentiometer	Speed control for the engines
	Illuminated push button	Output performance on/off
	Selector switch or push button	Enables the control voltage for the preselected electrical distribution box
	Illuminated push button	Group of engines on/off
	Push button	Group forward
	Push button	Group backward

Tab. 6 Function of operator's controls



6.1.2 Status messages on the control

Display	Status
	Display with programming functions ► For the error code, see the frequency converter manual ► Read off output voltage, current and frequency
	Display of output frequency, output voltage and output current for the frequency converter.

Tab. 7 Status messages on the control

6.2 Signals and message requiring monitoring

Display	Significance
	Fault on frequency converter
	Fault with insulation monitoring/differential current monitoring
	Fault with engine protection
	Temperature of transformer OK
	Group #1 switched on
	Frequency converter output performance switched on

Tab. 8 Status messages on the control

6.3 Shutting down the e-control

6.3.1 Shutting down the e-control in an emergency

- ▶ Switch off the output performance with the illuminated push button.
 - All engines are switched off.
- ▶ In an emergency, turn the main switch to the "0/OFF" position immediately.

6.4 Equipment and function options

6.4.1 Radio system remote control option

A radio system remote control enables you to change the rpm of the vibration motors, to switch to groups and to switch the engines on and off completely.

- ▶ For the sending and receiving frequency of the radio system remote control, see the contract documentation.

6.4.2 Jumbo-sized digital display option

A jumbo-sized digital display enables you to visualize the vibration motors' rpm. Hz is the display unit.

- ▶ For how to connect the jumbo-sized digital display, see the electrical documentation.

6.4.3 Custom-made option

If the e-control is fitted with special functions, this will be described on a separate supplementary sheet or in the contract documentation.

7 Maintenance

7.1 Safety measures during repairs

⚠ WARNING!
Risk of injury during repair work ▶ Take the e-control out of operation before carrying out any repair work. ▶ Secure the e-control against unauthorized resetting. ▶ Always observe current accident prevention and safety rules and regulations. ▶ Use the prescribed personal protective equipment.



Fig. 1 Secure the e-control against unauthorized resetting

- ▶ Turn the main switch to the "0/OFF" position.
- ▶ Secure the main switch with (for example) the plate (Fig. 1).

7.2 Repairs and cleaning by qualified individuals

⚠ DANGER!

Immediate danger!

Failure to observe the safety instructions will result in serious injury or death.

- Observe the safety instructions in the operator's manual for the frequency converter.

CAUTION!

Potentially dangerous situation!

Failure to observe the safety instructions could result in damage to property or environmental pollution.

- No insulation tests (insulation resistance) should be conducted on the frequency inverter's control circuit using an insulation tester.
- ▶ All contact screws in the switching cabinet must be checked regularly.
 - There is a risk of fire if the contact screws are loose.
- ▶ The switching cabinet must be cleaned to remove grime and dust.
 - Contaminants on the elements in the switching cabinet may cause these to overheat and destruct.
- ▶ The filter mats on the ventilating fan with filter and the outlet filter on the switching cabinet must be cleaned regularly and, where necessary, replaced.
 - Contamination may lead to excessive temperatures in the switching cabinet and in turn to destruction of elements.

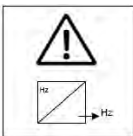
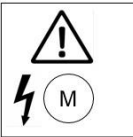
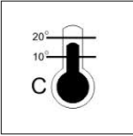


- ▶ The main switch, operator's controls and signal lights must be tested regularly.
 - Operating errors may occur if the operator's controls are defective.
- ▶ The cabling must be checked regularly.
 - Defects in utility lines could result in serious injury or death.



7.3 Troubleshooting and diagnosis of faults

7.3.1 Errors with signalization

Error message	Possible causes	Possible activities
		▶ Read off the error code on the frequency converter and look this up in the frequency converter manual's error description.
	Fault on frequency converter	▶ Read off the error code on the frequency converter and look this up in the frequency converter manual's error description.
	Fault with insulation monitoring	▶ Check the engines and engine leads.
	Fault with engine protection	▶ Check the input current from the engines. ▶ Check the cabling.
	The transformer's temperature is too high because the engines' input current is high.	▶ Check the installation and the motors.

Tab. 9 Faults and fault messages

7.3.2 Errors without signalization

Error	Possible causes	Possible activities
E-control does not start up	Electrical supply voltage interrupted	▶ Check the electrical supply voltage.
	Fuses in the switching cabinet have tripped or are defective.	▶ Check the safety fuses, protective motor switch or safety cutout and replace where necessary.
	No control voltage	▶ Check the protective motor switch or safety cutout

Tab. 10 Faults without fault messages

7.4 List of genuine parts

- ▶ See electrical documentation

8 De-commissioning and disposal of the machinery

8.1 Disposal of the e-control and its components

⚠ WARNING!

Risk of injury through unqualified disposal e.g. by/ due to

- personnel who do not have suitable training
 - stored energy
 - breakage during disassembly
- During disassembly and disposal, ensure the following:
- ▶ Arrange professional disposal with waste management companies and, where applicable, relevant authorities.

- ▶ Use technically trained personnel.
- ▶ Use personal protection equipment (PPE).
- ▶ Disconnect all power supplies.
- ▶ Release stored energy correctly, where applicable.
- ▶ Avoid potential breakages during disassembly.

E-control	
Switching cabinet, cabling, electrical components	to be disposed of as electrical waste
Mechanical components	to be sorted and disposed of

Tab. 11 Disposal

9 Technical data

FUE-M ...									
Model		17A	23A	31A	38A	43A	57A	71A	86A
Width x height x depth	mm	800 x 1200 x 400					800x1600x500		
Pedestal height	mm	200					200		
Operating weight (mass) approx.	kg	102	108	108	116	116	165	186	186
Mains rating (input)									
Input voltage	V	400-415, 3~							
Frequency	Hz	50 - 60							
Input current	A	24.5	28.9	40.5	49.0	59.0	75.0	95.0	115.0
Performance	KVA	17.0	20.0	28.0	34.0	41.0	52.0	66.0	80.0
Output									
Output voltage	V	250 3~							
Frequency	Hz	0 - 240							
Output current	A	17.0	23.0	31.0	38.0	43.0	57.0	71.0	86.0
Performance	KVA	8.8	11.9	16.1	19.7	22.3	29.6	36.8	59.5
Class rating		1							
Protection rating		IP 54							
Sound pressure level (LPA) at the operator's location	dB (A)	<70							



EU Declaration of Conformity

Manufacturer

Wied GmbH & Co. KG, Landerstall 4, D-74426 Bühlerzell

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Product	FUE-M 9A, 17A, FUE-M 23A, FUE-M 31A, FUE-M 43A, FUE-M 57A, FUE-M 71A
Product type	Converter
Function of product	Conversion of voltage and frequency
Item number	5000107984, 5000107985, 5000107986, 5000107987, 5000107988, 5000107989, 5000107990, 5000109051, 5000109053, 5000109062, 5000109064, 5000109073, 5000109075, 5000109084, 5000109086, 5000109095, 5000109097, 5000109106, 5000109108, 5000109117, 5000109119

Guidelines and standards

We hereby declare that this product complies with the relevant provisions and requirements of the following directives and standards:

2014/35/EU, 2014/30/EU, 2011/65/EU, EN 61000-6-4:2019, EN 60204-1:2018, EN 61439-1:2011

Person responsible for technical documents

Siegfried Wied

Wied GmbH & Co. KG, Landerstall 4, D-74426 Bühlerzell

Bühlerzell, 06.05.2021

Siegfried Wied

Managing Director

Translation of the original declaration of conformity

__FUE-M 9A, 17A, FUE-M 23A, FUE-M 31A, FUE-M 43A, FUE-M 57A, FUE-M 71A_CE_en

