Mobile Particle Counter

RE 51430/02.12 1/6

Type MPC4614

MPC4614

Nominal pressure max. 315 bar
Nominal flow 300 ml/min
Operating temperature max. 40 °C

Table of contents

Information on available spare parts:
www.boschrexroth.com/spc

Features

- Visual particle counter for non-continuous recording of the solid particle contamination in hydraulic and lubrication systems
- Light extinction method,
  for particles ≥ 4 µm(c) equivalent diameter.
- max. 40,000 particles/ml
- According to ISO 4406 and SAE AS4059
  for particles > 4 µm(c), 6 µm(c), 14 µm(c) and 21 µm(c).
- LC display with backlighting
- One switch, two menu buttons for changeover of the classification type.
- Printer and data interface RS 232 C
- Data memory non-volatile,
  sufficient for approx. 30 hours measuring time
- Installed battery for approx. 15 hours measuring time
- Charging device 230 V, 50 Hz / 12 V, 600 mA for charging socket
- Accuracy ±0.5 classes

Ordering code

MPC4614 – – –

mobile particle counter **= MPC4614**

no selection **= 0**
Transport case **= T**
Software (see page 6) **= S**

No selection **= 0**
Printer (see page 5) **= D**
Printer and transport case (see page 5) **= DT**

0 = No selection
P = Pump (see page 5)
PT = Pump and transport case (see page 5)

DE = German
EN = English
PT = Portuguese

Order example:

MPC4614-0-00-DE

Preferred types and accessories

	DE	EN	PT
MPC4614-0-00-	**R928019566**	**R928019611**	**R928019650**
MPC4614-T-00-	**R928019567**	**R928019612**	**R928019651**
MPC4614-S-00-	**R928019568**	**R928019613**	**R928019652**
MPC4614-TS-00-	**R928019569**	**R928019614**	**R928019653**
MPC4614-T-0PT-	**R928019570**	**R928019615**	**R928019654**
MPC4614-TS-0PT-	**R928019571**	**R928019616**	**R928019655**
MPC4614-0-DP-	**R928019572**	**R928019617**	**R928019656**
MPC4614-S-DP-	**R928019573**	**R928019618**	**R928019657**
MPC4614-0-DPT-	**R928019574**	**R928019619**	**R928019658**
MPC4614-S-DPT-	**R928019575**	**R928019620**	**R928019659**
MPC4614-T-DT0-	**R928019576**	**R928019621**	**R928019660**
MPC4614-TS-DT0-	**R928019577**	**R928019622**	**R928019661**
MPC4614-T-DTPT-	**R928019578**	**R928019623**	**R928019662**
MPC4614-TS-DTPT-	**R928019579**	**R928019624**	**R928019663**
ZMPC-D-	**R928019602**	**R928019647**	**R928019686**
ZMPC-P-	**R928019603**	**R928019648**	**R928019687**
ZMPC-S-	**R928019604**	**R928019649**	**R928019688**
ZMPC-VC		**R928019605**	
ZMPC-VD		**R928019606**	
ZMPC-VU		**R928019607**	
ZMPC-KM		**R928019608**	
ZMPC-KD		**R928019609**	
ZMPC-KP		**R928019610**	
ZMPC-PAP		**R928036934**	
ZMPC-FBD		**R928039830**	
ZMPC Minimess		**R928039909**	
ZMPC-SCHL		**R928039910**	
ZMPC-STOP6		**R928039911**	
ZMPC-STOP4		**R928039912**	

Function, view

The MPC4614 particle counter is a visual particle counter which is used for the non-continuous recording of the solid particle contamination in hydraulic and lubrication systems.

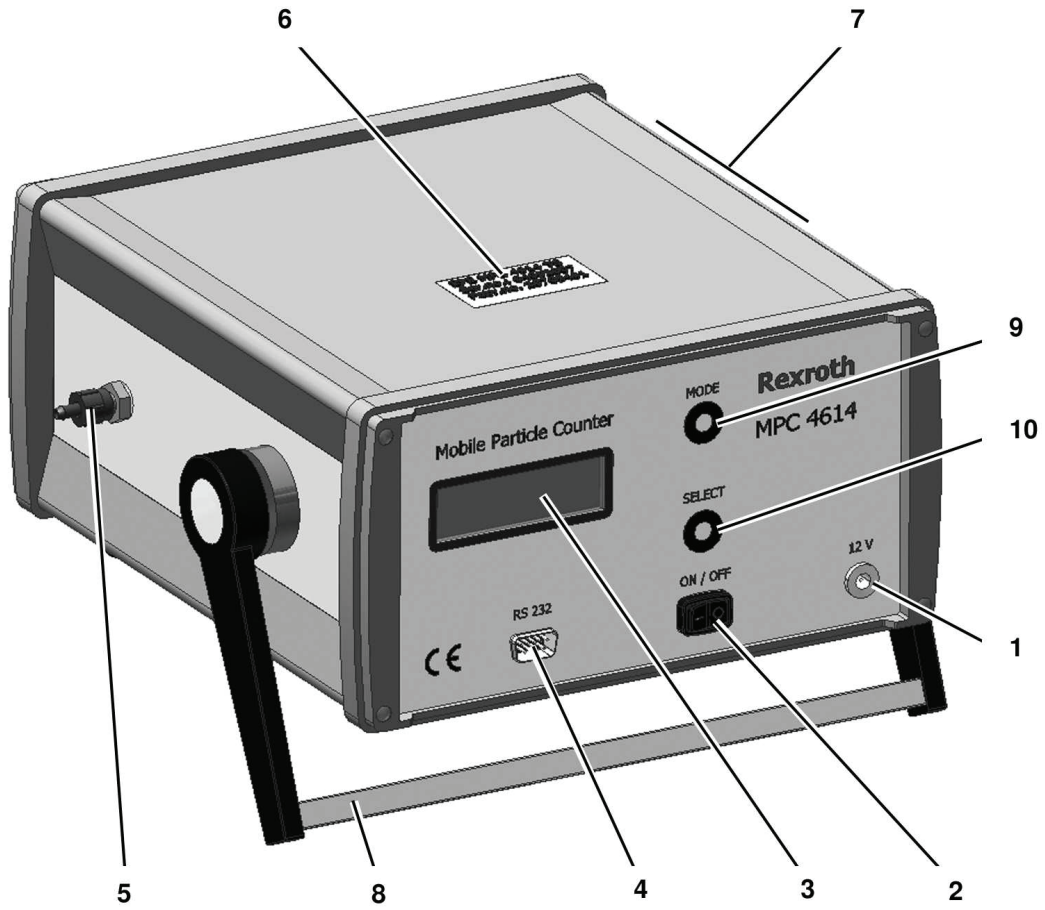
It works according to the light extinction principle. With the fluid flow, particles run through a miniature light barrier and interrupt the light beam. They cast a shadow. The particle size determines the size of the shadow. The particle size is defined as the diameter of a coextensive circle. From the number of shadows, one determines the number of particles.

The sensor detects particles the equivalent diameter of which is greater than / equal to four micrometer (4 µm(c)). By means of a flow conditioning unit, the sensor flow is kept constant within the application limits.

An individual measurement takes one minute. The progress of the measurement process is displayed in the two-digit LC display by means of a second counter running backwards. The degree of the solid particle contamination is calculated according to the classification types ISO 4406 and SAE AS4059 with regard to 4 µm(c), 6 µm(c), 14 µm(c) and 21 µm(c) equivalent diameter.

During the measurements, the results can be output on a printer. Irrespective of the measurement value output (on the display and/or the printer), the results are written to a non-volatile data memory in the device (data logger function).

After completion of all measurements, the results can be printed out or transferred to a PC.



1 Socket 12 V voltage supply
2 On/Off switch
3 LC display
4 RS232C plug-in connector
5 Media output (low-pressure connection DN4)
6 Name plate
7 Media input (Minimess M16 x 2)
8 Handle/base, rotatable
9 MODE button
10 SELECT button

Technical data (For applications outside these parameters, please consult us!)

Device data		
Measurement technology		Visual particle counter for non-continuous recording of the solid particle contamination in hydraulic and lubrication systems
Measuring principle		Light extinction method, for particles ≥ 4 µm(c) equivalent diameter.
Max. particle concentration	Particle/ml	40,000
Measurement results		According to ISO 4406 and SAE AS4059 for particles > 4 µm(c), 6 µm(c), 14 µm(c) and 21 µm(c).
Display		LC display with backlighting, 2*16 characters
Operating controls		On switch, two menu buttons for changeover of the classification type.
Printer and data interface		RS 232 C
Data memory		Non-volatile, sufficient for approx. 30 hours measuring time
Real-time clock		Recording of date and time at the beginning of the measurement
Auxiliary energy		Installed battery for approx. 15 hours measuring time
Charging device		230 V, 50 Hz / 12 V, 600 mA for charging socket
Calibration		Comparative measurement with test oil
Accuracy	Classes	±0.5
Hydraulic data		
Operating pressure	bar	12 to 315
Media temperature	°C	5 to 70
Temperature range for applications	°C	5 to 40 / non-condensing atmosphere
Temperature range for storage	°C	5 to 40
Nominal flow	ml/min	Approx. 300
Admissible medium		Hydraulic and lubricating oils on mineral base
Parts contacting the medium		Glass, brass, aluminum, steel, NBR
Considered standards and directives		
Directive 89/336 EEC		"Electromagnetic compatibility" (EMC directive)
DIN EN 61010-1		"Safety requirements for electrical equipment for measurement, control and laboratory use" part 1: General requirements

Accessories

Printer ZMPC-D-...

For recording the measuring values of the MPC4614 particle counter, the latter can be connected to a printer.

The printer is available with and without transport case.

Auxiliary pump ZMPC-P-...

The application range of the MPC is designed for measurements at high pressure hydraulic lines with 12 to 315 bar pressure (see "Hydraulic data" page 4).

If the pressure is higher, a pressure reducing valve must be installed upstream.

If the measurement is to be carried out at pressures ≤ 12 bar or from a tank (self-priming), a corresponding pump must be installed upstream. This pump is available as accessory.

The pump is available with and without transport case.

Connection cable

ZMPC-VC-...

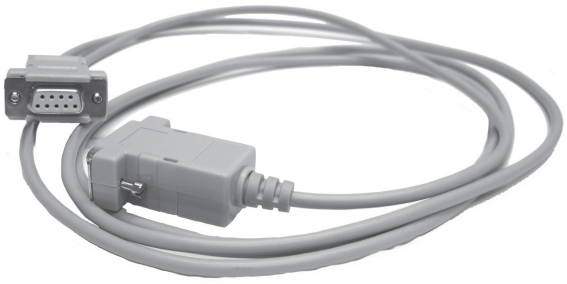
Connection cable serial PC
Connection cable RS232 to connect the MPC with the PC

ZMPC-VD-...

Connection cable printer
Connection cable to connect the MPC with the printer

ZMPC-VU-...

Connection cable USB PC
Connection cable for PC with USB connection



Software ZMPC-S-…

HyperTerminal

The data from the MPC4614 is transmitted into a text file on the PC using the "HyperTerminal" program.
This program is already pre-installed on most PCs with MS Windows®.

Chartmaker tool

The "Chartmaker tool" program is used to analyze and graphically present the data in MS Excel® from version 2000 (10.0).

Accessories

Case	
ZMPC-KM-… Transport case tailored to measuring device **ZMPC-KD-…** Transport case tailored to printer **ZMPC-KP-…** Transport case tailored to pump	
Paper rolls for printer	
ZMPC-PAP-… Replacement paper rolls for printer	
Color rolls for printer	
ZMPC-FBD-… Replacement ribbon for printer	
Minimess hose	
ZMPC Minimess-… Minimess hose for connecting the pressure port with the MPC	
Return flow hose	
ZMPC-SCHL-… Hose for return into the tank	
End cap	
ZMPC-STOP6 End cap for closing the hoses for transport **ZMPC-STOP4** End cap for closing the hose connection of the MPC	

Related documents

You can find these operating instructions as well as the related documentation in the media directory under

www.boschrexroth.com/various/utilities/mediadirectory/.

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