

# DB2 MG

## DIGITAL THREE-PHASE MULTIFUNCTION METER

**DB2 MG** is a three-phase four-tariffs multifunctional meter, which includes class 1 or 2 digital watt-hour meter and class 2 or 3 var-hour meter and class 1 maximum demand indicator. Meter is intended for four-wires direct connection in domestic and industrial applications. Meter **DB2 MG** is placed in polycarbonate case having mains connector with up to three modules: tariff module, switch clock and RCR module, and communication module.

Meter **DB2 MG** satisfies technical requirements of EPS.

Current and voltage operating ranges are 3x40A, 3x60A, 3x80A or 3x100A (base current 10A or 5A), and 3x230/400V.

Measured values of active and reactive energy and maximum demand indicator in different tariffs, date and time are shown on LCD indicator, cyclically. Besides standard measurement data, meter shows current values of active power, date and time, phase voltages, currents, maximums of power and active and reactive powers, meter status (open/close), number, date and time of reset of maximum demand indicators and number of power failures. Display content is changed by list push-button.

Meter **DB2 MG** is equipped by peripheral devices:

- optical infrared port for programming and reading meter, ripple control receiver and switch clock;
- serial RS232/485 port for programming and reading of meter, ripple control receiver and switch clock with pair to pair or with network connection;
- external inputs for control up to four tariffs;
- LED and wired S0 pulse outputs for energy;
- programmable S0 outputs for power relay control or tariff control or maximum demand indicator control.
- maximum demand indicators of 15-minute mean active power and time interval generator 900s/9s;
- switch clock, ripple control receiver or ripple control receiver with switch clock function for tariff control and for events registration.

Meter **DB2 MG** can register and record:

- values of all active and reactive energy counters and maximum demand indicator registers saved on the first day of month at 00.00h, for 12 months;
- values of counters of power failures by phase and number of reset of maximum demand indicator saved on the first day of month at 00.00h for 12 months;
- 40 days load profile of active power. Users have possibility to read profile for last 24h or for all 40 days.

Upon request, custom time schedules are available.

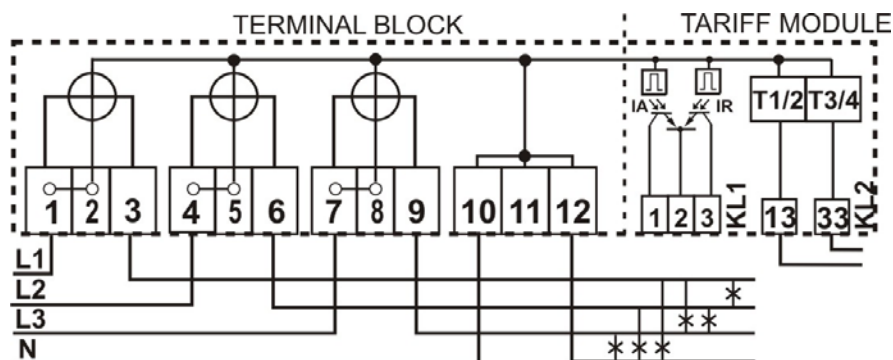
Registered and recorded data can be read on display or by meter communication port by PC software DB2FServis. Hand held unit PSION software DB2FPsi is available also.

Meter **DB2 MG** is a multiprocessor system based on digital processing of input currents and voltages obtained by A/D converters. Power of microcomputers provides application of complex algorithms for tariff, load management, data processing, tests and communications.

Device **DB2 MG** is realized in VLSI CMOS technology having reliability, low power consumption, operation in wide range of ambient temperatures, low aging and EMI immunity.

Detailed description of device is given in "User guide for DB2" witch is intended for managers and designers.

### Connection diagram



## Technical characteristics

Type	DB2
Rated voltage $V_n$	3x230/400V (+15%, -20%)
Rated frequency $f_n$	50 Hz
Base current $I_B$	10A or 5A
Maximum current $I_M$	40A, 60A, 80A ili 100A
Constant of meter	1000 impulses/kWh (kvarh)
Class of accuracy active	IEC 1036 class 1 or 2
Error limits:	
$0.05I_B \div I_M \cos\varphi=1$	$\pm 1\%$ , $\pm 2\%$
$0.2I_B \div I_M \cos\varphi=0.5$	$\pm 1\%$ , $\pm 2\%$
Class of accuracy reactive	IEC 1268 class 2 or 3
Error limits:	
$0.05I_B \div I_M \sin\varphi=1$	$\pm 2\%$ , $\pm 3\%$
$0.2I_B \div I_M \sin\varphi=0.5$	$\pm 2\%$ , $\pm 3\%$
Starting current threshold	< 20mA/phase
Pulse out:	optocoupled, S0, IEC 62053-31
	Class B, 1Wh (varh)/pulse
voltage (max)	15V
current (max)	15mA
duration	30ms
Optical infrared port	IEC 61107, Mode C
Power consumption:	
voltage circuit at $V_n$	< 1W (9VA)/phase
current circuit	< 0.5VA/phase

AC voltage withstand	4kV, 50Hz, 1 minute
Impulse voltage withstand	6kV, 1.2/50 $\mu$ s
Operating temperature range	-20°C, +70°C
Ambient relative humidity	<90%
Case dimensions	250.5x170.0x65.3 mm
Hole for wire	6.5 mm diameter
Weight	1.0 kg

### Function of maximum demand indicator of class 1

Class of accuracy	IEC 211 class 1
Measurement period for mean power measurement	15 minute
Reset time	9s

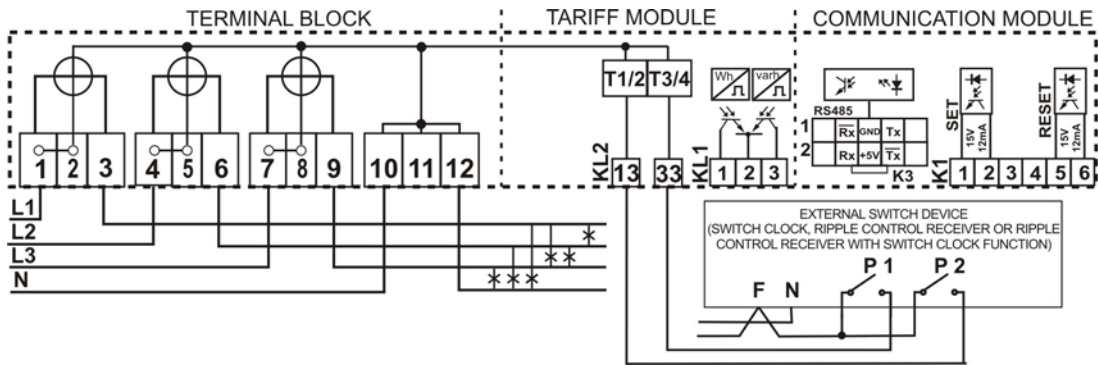
### Function of switch clock

Real time clock stability	$\pm 1$ minute/month
Expected battery life	> 15 years

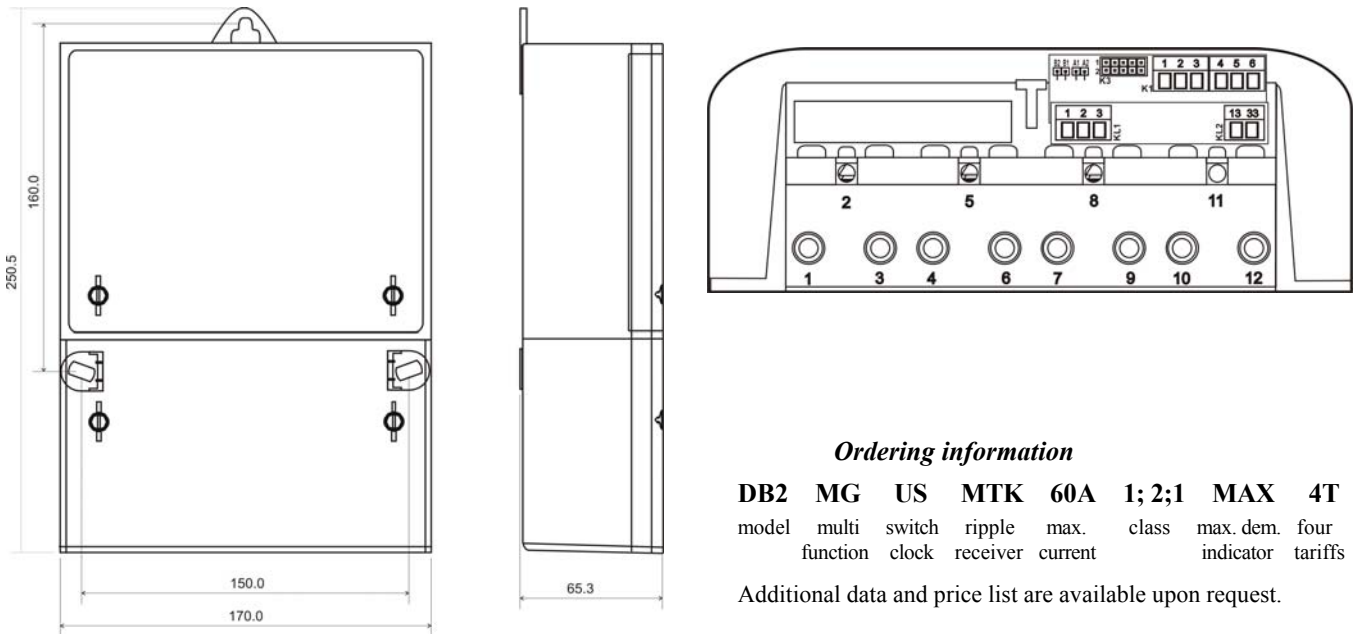
### Function of ripple receiver

Mains frequency $f_n$	50-60Hz
Carrier frequency $f_0$	on request
Filter Q factor	20
Threshold voltage $V_{op}$	$0.1 \div 4.5\% V_n$
Nonoperative threshold voltage $V_{on}$	$0.1 \div 4.5\% V_n$
Time delays	0s to 99999s

Connection diagram for connection meter with external switch clock or RCR device



## Assembling data



### Ordering information

**DB2 MG US MTK 60A 1; 2; 1 MAX 4T**  
 model multi switch ripple max. class max. dem. four  
 function clock receiver current indicator tariffs

Additional data and price list are available upon request.

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