ENEL d.o.o. Beograd

DMG1 US

PRECISION MULTIFUNCTION TRANSFORMER COUPLED METER
WITH SWITCH CLOCK

DMG1 US is a multifunction meter placed in one plastic case. Functions of next instruments are included:

- two-tariff three-phase active energy meter of accuracy class 1 or 0.2 including two maximum demand indicators of class 1 or 0.2, MAX-P1 for first and MAX-P2 for second tariff;
- two-tariff three-phase reactive energy meter of class 2 or 0.5;
- switch clock for control of tariff and maximum demand indicator.

Meter can be used in three-system/four-wire or two-system/three-wire connections, one or two directions on 58V/100V or 230V/400V.

Digital meter **DMG1 US** is intended for transformer coupling on 5A or 1A.

Measured values of active and reactive energy, maximums of power, active tariff, phase powers, voltages and currents, time and date are shown on LCD indicator cyclically. Reset of maximum demand indicator is made by push-button placed on mains connector.

Meter **DMG1 US** can be equipped by:

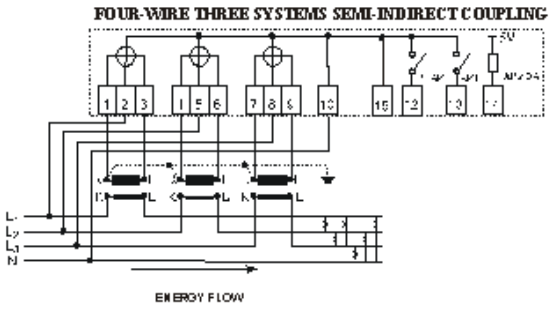
- ripple control receiver for control of tariff and maximum demand indicator;
- 40 days load profile registration of active, reactive and apparent 15-minutes mean power, RMS values of phase currents and RMS value of one phase voltage;
- optical infrared port, which provides meter reading and programming by Psion (software PsiENEL) or by PC (software ENELreg);
- external inputs for control of up to four tariffs.

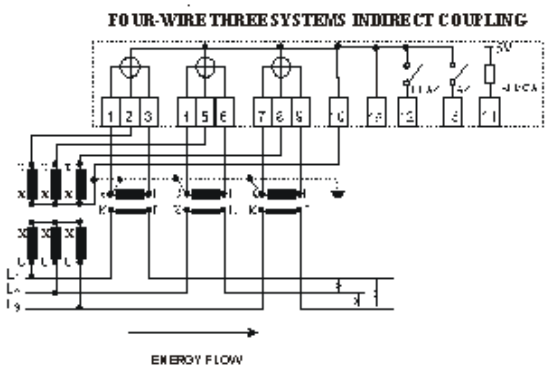
Based on digital multifunction meter **DMG1 US**, we offer systems for:

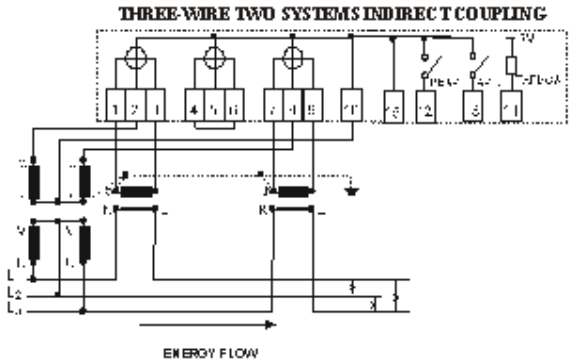
- integrated energy measurement with remote control;
- calculation of united power maximum if energy is delivered from different points.

Application

DMG1 US is measurement group for energy consumption control. Device **DMG1 US** is intended for transformer 5A or 1A current coupling and three-wire or four-wire 58V/100V or 230V/400V voltage coupling. Examples of mains connection are shown in Figure.







Design

Meter **DMG1 US** is a multiprocessor system for measurement, control and communication.

Measurements are based on digital processing of input currents and voltages. Power of microcomputers provides application of complex algorithms for tariff, load management, data processing, tests and communications.

Device **DMG1 US** is realized in CMOS technology having reliability, low power consumption and operation in wide range of ambient temperatures.

Meter **DMG1 US** is placed in one case having one mains connector.

Technical characteristics

Type	Digital watt-hour meter DMG1
Rated voltage V_n	58V/100V or 230V/400V
Rated frequency f_n	50 Hz
Maximum current I_M	/5A or 1A indirect connection
Starting current threshold	4mA/phase indirect connection
Power consumption:	
voltage circuit at V_n	< 1W/phase
current circuit	< 0.1W/phase
Pulse out:	
duration	70ms
voltage	5V
current (max)	5mA
Optical infrared port	IEC 61107, Mode C
Ambient operating temperature	-25°C, +60°C
Ambient relative humidity	<90%
AC voltage withstand	2kV, 50Hz, 1 minute
Impulse voltage withstand	7kV, 1.2/50μs
Weight	2000 g

Function of two-tariff three-phase active energy meter of class 1 or 0.2

Class of accuracy	IEC 1036 class 1 or 0.2
Constant of meter	1000 impulses/kWh or 10000 impulses/kWh
Impulse output of meter	1Wh/impulse
Error limits	
$0.1I_B \div I_M$ cosφ=1	±1%, ±0.2
$0.2I_B \div I_M$ cosφ=0.5	±1%, ±0.2

Function of maximum demand indicator of class 1 or 0.2

Class of accuracy	IEC 211 class 1 or 0.2
Measurement period for mean power measurement	15 minute
Reset time	9s
Measurement range I_M	/5A indirect connection
Error limits	
$0.2I_M \div I_M$	±1%, ±0.2%

Function of two-tariff three-phase reactive energy meter of class 2 or 0.5

Class of accuracy	IEC 1268, class 2 or 0.5
Constant of meter	1000 impulses/ kvarh or 10000 impulses/ kvarh
Impulse output of meter	1 varh/impulse
Error limits	
$0.1I_B \div I_M$ sinφ=1	±2%, ±0.5%
$0.2I_B \div I_M$ sinφ=0.5	±2%, ±0.5%

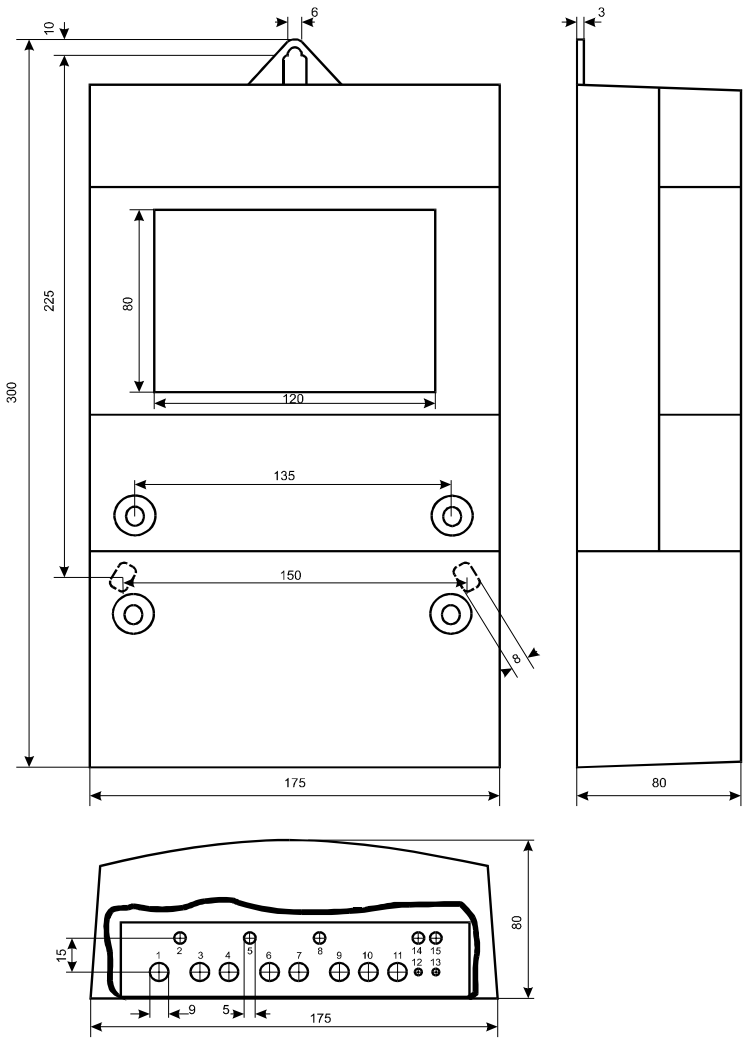
Function of ripple control receiver

Carrier frequency f_o	(110Hz ÷ 500 Hz)
Operating voltage V_o	$1.1V_{eff}$ (S version $0.2V_{eff}$)
Impulse telegram	on request

Function of switch clock

Real time clock long term stability	±1 minute/month
Expected battery life	> 10 years

Assembling data



Ordering information

DMG1	**US**	**230**	**5(5)A**	**1; 2; 1**	**1**	**OC**	**4T**
model	switch clock	voltage	max current	class	direction	optical port	four tariffs

option:	**MTK**	RCR receiver
	283,3	carrier frequency
	S	sensitive

Additional data and price list are available upon request.

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