

Energy Monitoring Systems

1. Energy meters

1.1 Sommy ER9 multi-function power meter



- Enables measurement of a single three-phase load
- Measured quantities: phase and line voltages, phase currents, active, reactive and apparent power (per phase and total), power factor (per phase and total), total active and reactive energy, frequency.
- Accuracy class:
 - o Active power: 0,5
 - o Reactive power: 1
- Dimensions: 96×96×105mm
- 320×340 TFT LCD color display
- Input voltage range: 220/380 V
- Input current range: 5 A
- Frequency: 50/60 Hz
- Wiring: 3-phase, 3-wire OR 3-phase 4-wire
- Communication: Serial RS485, Modbus RTU protocol

1.2 Sommy ES-9L multi-function power meter



- Enables measurement of a single three-phase load
- Measured quantities: phase and line voltages, phase currents, active, reactive and apparent power (per phase and total), power factor (per phase and total), total active and reactive energy, frequency.
- Accuracy class:
 - o Active power: 0,5
 - o Reactive power: 1
- Dimensions: 96×96×105mm
- Black and white LCD display
- Input voltage range: 220/380 V
- Input current range: 5 A
- Frequency: 50/60 Hz
- Wiring: 3-phase, 3-wire OR 3-phase 4-wire
- Communication: Serial RS485, Modbus RTU protocol

1.3 Sommy GQ-12 multi-function power meter



- Enables measurement of up to 4 three-phase loads
- Measured quantities: phase and line voltages, phase currents, active, reactive and apparent power (per phase and total), power factor (per phase and total), total active and reactive energy, frequency.
- Accuracy class:
 - Active power: 0,5
 - Reactive power: 1
- Dimensions: 126×88×65mm
- Black and white LCD display
- Input voltage range: 220/380 V
- Input current range: 5 A
- Frequency: 50/60 Hz
- Wiring: 3-phase 4-wire
- Communication: Serial RS485, Modbus RTU protocol
- DIN-rail mounting

2. Data Concentrator



- Provides data readout for up to 32 energy meters via RS485 Modbus RTU
- Provides telemetry to a local or remote server via Ethernet, Wi-Fi or GSM Internet connection
- Possibility of local data storage and automatic data retrieval in case of connection loss
- Customizable data readout interval
- Power supply requirement: 5 VDC, 2 A
- DIN-rail mounting
- Can be reprogrammed to readout other energy meters via RS485 serial interface

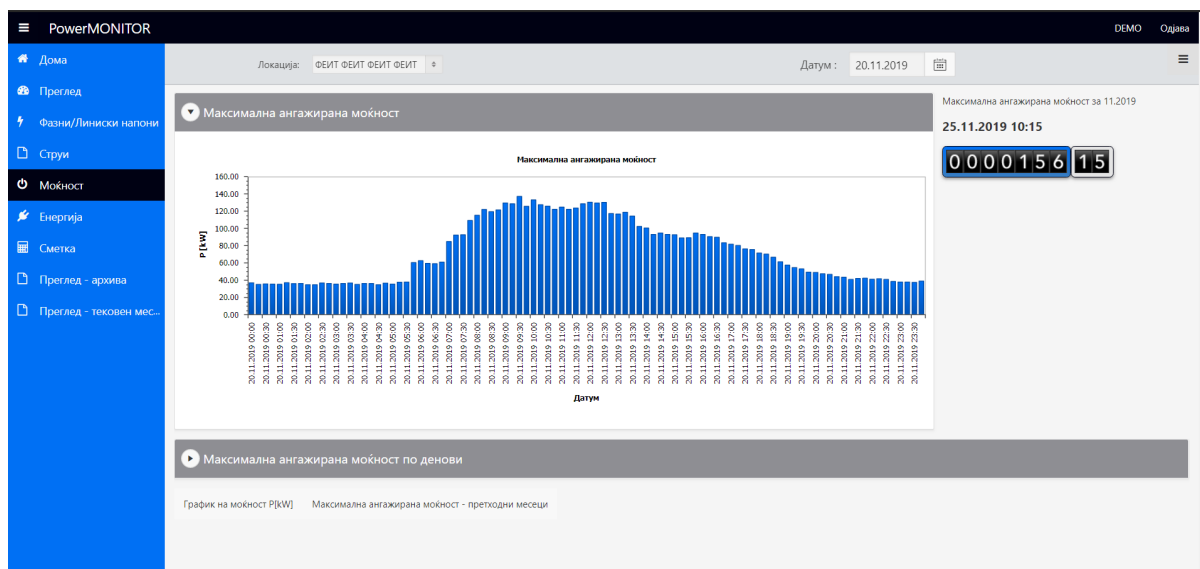
3. Energy Monitoring Software

- Web-based application for real time electricity consumption monitoring, as well as visualisation of historical data
- Possibility of hierarchical organization of measurement locations in 4 levels
- Customizable user privileges for access to selected locations
- On-demand consumption report generation (daily, weekly or monthly) for a single or a group of measurement locations
- Graphical display of active power demand [kW] and energy consumption [kWh] for different time intervals and monthly peak power demand display

- Raw data view, possibility of filtering and exporting data for further analysis
- Data visualization and histograms for voltages and currents
- Can be installed locally or in the cloud



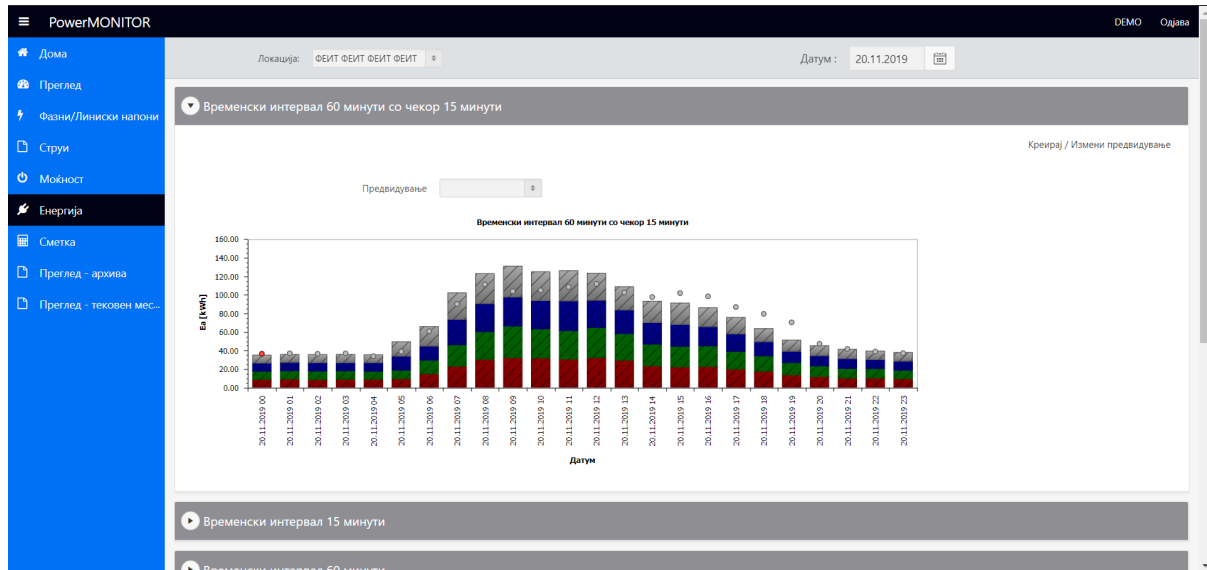
Real-time overview menu



Power demand menu for 15 minute intervals with peak power demand for the selected month in the upper right part of the menu



DTK Smart-tek DOO Skopje
ul. Mite Bogoevski 13 B, 1000 Skopje
Republic of North Macedonia
phone: +389 71 255 483
e-mail: contact@dtksmarttech.com.mk
web: www.dtksmarttech.com.mk



Energy consumption menu for 1 hour intervals, each one divided into 15 minutes vertically

Datum	U1	U2	U3	U12	U23	U31	I1	I2	I3	P1	P2	P3	P	Q1	Q2	Q3	Q	S1	S2
09.09.2019 03:26:05	233.6	232.81	234.33	404.6	403.25	405.87	42	55.05	67.7	9362.64	11421.25	15282.05	36007.33	1758.24	-4835.17	-439.56	-3523.81	9809.89	1307
09.09.2019 03:26:05	233.6	232.81	234.33	404.6	403.25	405.87	42	55.05	67.7	9362.64	11421.25	15282.05	36007.33	1758.24	-4835.17	-439.56	-3523.81	9809.89	1307
09.09.2019 03:26:05	233.6	232.81	234.33	404.6	403.25	405.87	42	55.05	67.7	9362.64	11421.25	15282.05	36007.33	1758.24	-4835.17	-439.56	-3523.81	9809.89	1307
09.09.2019 03:26:05	233.6	232.81	234.33	404.6	403.25	405.87	42	55.05	67.7	9362.64	11421.25	15282.05	36007.33	1758.24	-4835.17	-439.56	-3523.81	9809.89	1307
09.09.2019 03:26:05	233.6	232.81	234.33	404.6	403.25	405.87	42	55.05	67.7	9362.64	11421.25	15282.05	36007.33	1758.24	-4835.17	-439.56	-3523.81	9809.89	1307
09.09.2019 03:06:43	233.7	233.17	234.63	404.78	403.86	406.39	41.99	54.8	66.32	9347.99	11494.51	14981.68	35816.85	1663	-4747.25	-886.45	-3978.02	9813.82	1280
09.09.2019 03:06:13	233.7	233.17	234.63	404.78	403.86	406.39	42.67	53.36	66.32	9501.83	11025.64	14945.05	35472.53	1963.37	-4710.62	-783.88	-3531.14	10054.21	1252
09.09.2019 02:57:52	233.7	232.55	234.63	404.78	402.8	406.39	54.07	61.56	67.01	12337	13106.23	15084.25	40527.47	1164.84	-5003.66	-776.56	-4615.38	12635.69	1434
09.09.2019 02:54:58	233.7	232.55	234.63	404.78	402.8	406.39	41.73	55.44	67.51	9289.38	11560.44	15289.38	36139.2	1584.4	-4804.53	-396.1	-3616.24	9752.14	1297
09.09.2019 02:54:28	233.7	232.55	233.99	404.78	402.8	405.29	41.73	55.52	67.61	9304.03	11494.51	15289.38	36065.94	1589.74	-4996.34	-402.93	-3787.55	9752.14	1291

Raw data view menu