MERKUR®
METERING

Electronic Prepaid Meters

MERKUR®
GERMAN TECHNOLOGY

Content

Digital Meters

MERKUR®
METERING

► **www.merkur-hamburg.de**
► **mail@merkur-hamburg.de**

MERKUR – German Technology

Ulrich Scheller
Export Manager

For over 100 years – since the time of Werner von Siemens – German Technology is renown for outstanding innovation and technical leadership. **MERKUR**® Ueberseehandel GmbH is committed to this long tradition.

Under **MERKUR**® German Technology we develop and produce warranted , durable high quality products in the following segments:

- Electrotechnology
- **DUPROLUX**® Lighting
- Metering
- Power Distribution
- Climatisation
- Renewable Energy

MERKUR® clients worldwide can rely on our vast experience. We offer authorised distributors competitive prices better allowing them to compete in the market. We also successfully cooperate with contractors who are bidding for public utility tenders.

MERKUR® is a reliable partner with a tradition of providing individually tailored products and solutions in accordance with customers' needs. Contact us and we gladly assist you with more details about our products and services. Get in touch with us!

Export Manager

MERKUR®
METERING

Split Single-Phase Split Prepaid Electricity Meter

Split Single-Phase Prepaid Electicity Meter

MERTRONIC Split Single-Phase Prepaid Electicity Meter range features DIN rail mounted prepayment meters. Its comprises Measurement and Control Unit (MCU) and the User Interface Unit (UIU). The units are simple yet stylish, small yet secure.

The MCU and UIU can be connected either wired or wirelessly. The wireless version uses open band of radio frequency, making installation quick, simple and cost saving.

- STS compliant
- Easy to inslall and low installation cost
- Keypad with audible and text feedback
- Adjustable visual low credit warning leveis
- Adjustable power limit
- Adjustable emergency credit allowance
- Automatic diagnosis of various faults includes contactor fault, memory devise fault etc
- Significant Reverse Energy (SRE) measurement
- Advanced tamperRING detection
- Options of AC power or alkaline or lithium batteries for UIU

- User friendly enclosure design
- Language independent user interface
- Multiple UIU location: free standing or wall-mounted
- Easy switch between prepayment and post-payment options

Product spezifications

VOLTAGE & POWER SUPPLY
- Nominal Valtage : 220v/230v/240v
- Operating Range: 80% tc 120% of Un
- Frequency Range: 50Hz/60Hz

CURRENT RATINGS
- Base Current (Ib): SA
- Max Current (Imax): 80A
- Minimum Class Rating   Class 1: 20mA
                            Class 2: 25mA

ACCURACY
- Class 1 and Class 2

MAX WITHSTAND VOLTAGE
- 420V (48hr)

Insulation Class
- Insulation System Classitication: Double Insulation

Double insulation
- Insulation Level: 4kV rms for 1 minute

Supply Burden
- Valtage Circuit: ≤ 2W/10VA
- Current Circuit: ≤ 1.0VA@Ib=5A

MERKUR®
METERING

www.merkur-hamburg.de

Split Single-Phase Split Prepaid Electricity Meter

PROTECTION
- Power Ovarload
- Over/Under Valtage
- Line/Load Reversal

OPERATING ENVIRONMENT
- Operating Temperature: -30"C - 60"C
- Storage Temperature:-40"C-70"C
- Relative Humidity: 95%; annual average 75%
- IP Rating: IP54

STATUS INDICATORS
- Load/Power Status
- MCU/UIU Communication Status
- Rate LED (1600 pulses I kWh)
- UIU: Low credit, power status

TERMINAL
- Type: Moving cage
- Maximum Cable Size: 56mm2

EXTERNALINTERFACE
- Optical Port
- MC171 Type B OMMUICATION PORT
- Wired: Non-polarized 2 wire low valtage or RS485 or PLC
- Wireless: RF 433.05MHz, 100m line of sight

STANDARDS
- IEC62055-31, IEC62055-51, IEC62055-41
- IEC62052-11,1EC62053-21,1EC62056-21
- SCSSCAAA9(MC171)

SURGE IMMUNITY
- In excess of 4 kV, 1.2150 J.l s Electromagnetlc Compatlblllty (EMC)
- Electrostatic Discharge: 15kV air discharge
- Immunity to Fast Transient Burst: 4kV

INSTALLATION
- MCU: DIN rail mounted
- UIU: Free standing or wall mounted

USER INTERFACE
- 12 key, international outlay standard keypad with audio and text feedback
- 8 character , 7 segment LCD

DISPLAYS
- Current credit
- Total units counter
- Meter state register
- Instantaneous currentlvoltage
- Low credit levei
- Maximum demand
- Hours left
- Previously entered STS tokens

BUZZER
- Feedback on key press, token accept and reject
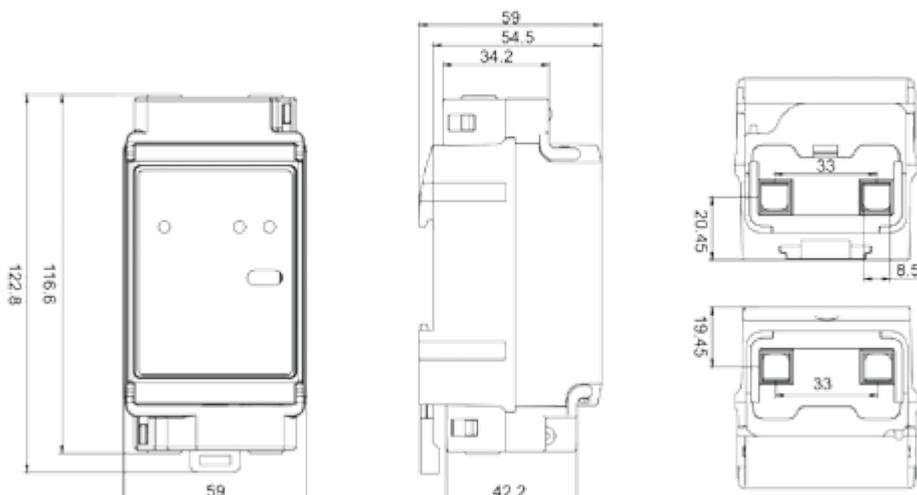
WIRELESS UIU POWER OPTIONS
- 2M Lithium battery, 3.6V, 5-year life
- 4 MAikaline batteries, 1.5V each, 1-year life
- AC Power

PRODUCT LIFE
- 15 years
- Data retained for 20 years

PACKAGING
- Units per Carton: MCU 30 PCs, UIU 16 Purehase
- Unit Package Size (h:w:d): MCU 343*285*223mm, UIU 341*210*199mm
- Weight : MCU 0.3 kg, UIU 0.4kg

Integrated Single-Phase Prepaid Electricity Meter

Integrated Single-Phase Prepaid Electicity Meter

MERTRONIC Integrated Single-Phase Prepaid Electricity Meter provides an integrated solution for kWh measurement and prepayment. Credit and management data is transferred from a point of sales (POS) to the meter via a 20-digit numeric token that is generated using the Standard Transfer Specification (STS) encryption protocol. The token is entered into the meter via a keypad.

MERTRONIC is an upgrade of **MERKUR**'s highly successful DDSY range Single Phase keypad electricity meter. It is tailored to meet the international demand for STS protocol. Feed-back received from customers for DDSY range over the last 1 0 years has been reflected on the design of this unit, making **MERTRONIC** Integrated Single-Phase Prepaid Electricity Meter a reliable and robust product that exceeds customer requirements and expectations.

Main Features

- STS compliant
- Single-Phase, 2 wire, prepayment meter
- Keypad with audible and text feedback
- Adjustable audio and visual low credit waming
- Adjustable power limit
- Tarnper detection
- Improved sealing against ingress of insects
- Adjustable emergency credit allowance
- Enlarged LCD
- Language independent user interface
- Significant Reverse Energy (SRE) measurement
- Terminal in BS5685 formal
- Provision for AMR module
- IP54 Rated
- Easy switch between prepayment and post-payment option

MERKUR®
METERING

www.merkur-hamburg.de

Integrated Single-Phase Prepaid Electricity Meter

Product spezifications

VOLTAGE
- Nominal Valtage : 220v/230v/240v
- Operating Range:80% to 120% of U_n
- Frequency Range: 50Hz/60Hz

CURRENT RATINGS
- Base Current (Ib): 10A
- Max Current (Imax): 80A/100A

STARTING CURRENT
- 20mA

ACCURACY
- Class 1 (Ciass 2 optional)

MAX WITHSTAND VOLTAGE
- 420V (48hr)

INSULATION CLASS
- Insulation System Classification: Double insulat1on
- Insulation Level: 4kV rrns for 1 minute

SUPPLY BURDEN
- Valtage Circuit: ≤ 2W/10VA
- Current Circuit: ≤ 1.0VA@Ib=5A

PROTECTION
- Over/Under Valtage Protection
- Tarnper Protection
- Theft Protection

OPERATING ENVIRONMENT
- Operating Temperature: -25"C-55"C
- Storage Temperature:-40"C-70"C
- Relative Humidity: ≤ 95%; annual average75%
- IP Rating: Ip54

LED INDICATOR
- Rate of Consumption 1600/kWh

DISCONNECTION DEVICE
- Contactor

EXTERNALINTERFACE
- Optical port
- MC171 Type B

INSTALLATION
- Indoor or outdoor wall-mounted

STANDARDS
- IEC 62056-21 IEC62055-31
- IEC 62055-41 IEC62055-51
- DISSCAM9 (Mc171)

LIQUID CRYSTAL DISPLAY (LCD)
- Size: 70mm x 30mm
- 8 digits + icons + 2 digits (index)

DISPLAYS
- Current credit
- Total units counter
- Meter state register
- Instantaneous currentlvoltage
- Low credit level
- Maximum demand
- Hours left
- Previously entered STS tokens

BUZZER
- Feedback on key press, token accept and reject melodies, low credit alarms
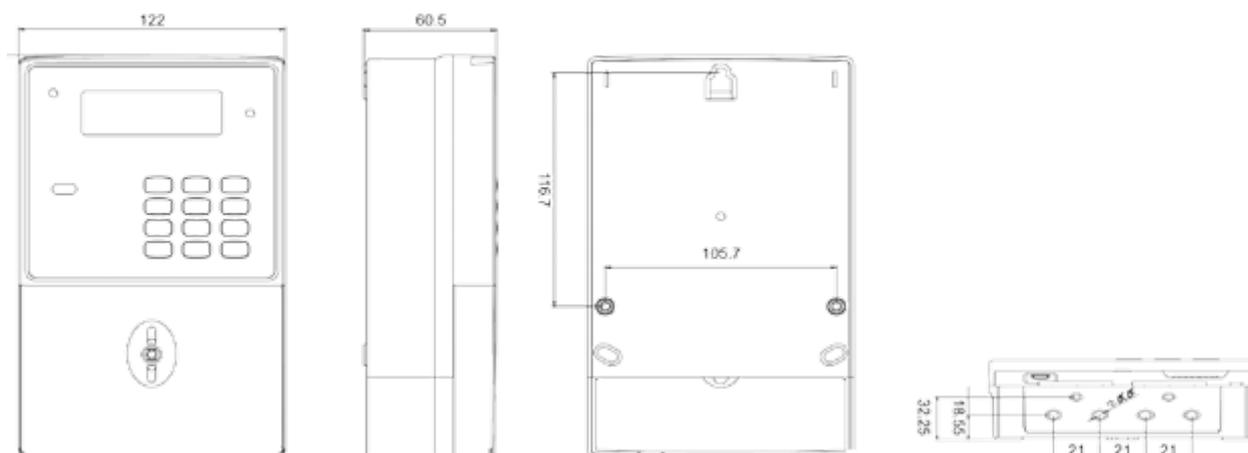
USER INTERFACE
- 12 keys, international standard with 0 - 9 numeric keys, backspace and information key

PRODUCT LIFE
- 15 Years

WEIGHT & DIMENSIONS
- Weight: 1.2 kg
- Dimensions: 202 mm x 122mm x 61mm

Integrated Triple-Phase Prepaid Electricity Meter

Integrated Three-Phase Prepaid Electricity Meter

MERTRONIC Integrated Tripie-Phase Prepaid Electricity Meter provides an integrated solution for kWh measurement and prepayment. Credit and management data is transferred from a point of sales (POS) to the meter via a 20-digit numeric token that is generated using the Standard Transfer Specification (STS encryption protocol. The token is entered to the metervia a keypad. The meter is ideal for large residential home and small commercial application.

Both intemal and extemal designs of **MERTRO-NIC** Integrated Tripie-Phase Prepaid Electricity Meter are large improvements over our previous DDSY range triple-phase keypad electricity meter. **MERKUR** is proud to present the new three-phase meters as a reliable and robust product that exoeeds customer require-ments and expectations.

Main Features

- 20 digit STS encryption
- Triple-phase, four wire, keypad prepayment meter
- Meterfitted with enlarged LCD and keypad
- Maximum current of BOA with Class 1 accuracy
- Keypad with audible and text feedback
- Adjustable audio and visual low credit warning
- Adjustable power limit
- Tarnper detection
- Improved sealing against ingress of insects
- Adjustable emergency credit allowance
- Language independent user interface
- Significant Reverse Energy (SRE) measurement
- Terminal in BS5685 formal
- User friendly enclosure design

- Provision for AMR module
- Provision for backup battery
- IP54 Rated
- Easy switch between prepayment and post-payment option

![MERKUR Three Phase Prepayment Meter]

MERKUR®
METERING

www.merkur-hamburg.de

Integrated Triple-Phase Prepaid Electricity Meter

Product spezifications

VOLTAGE
- Nominal Valtage : 220v/230v/240v
- Operating Range: 80% to 120% of U_n
- Frequency Range: 50Hz/60Hz

CURRENT RATINGS
- Base Current (Ib): 10A
- Max Current (Imax): 80A/100A

STARTING CURRENT
- 20mA

ACCURACY
- Class 1 (Ciass 2 optional)

PROTECTION
- Over/Under Voltage Protection
- Tarninh Protection
- Theft Protection

OPERATING ENVIRONMENT
- Operating Temperature: -25°C - 55°C
- Storage Temperature: -40°C - 70°C
- Relative Humidity: ≤ 95%; annual average 75%
- IP Rating: IP54

LED INDICATORS
- Rate of consumption 400 pushes/kWh

DISCONNECTION DEVICE
- Contactor in each phase

MAX WITHSTAND VOLTAGE
- 450V (48hr)

INSULATION CLASS
- Insulation System Classification: Double insulation
- Insulation Level: 4kV rms for 1 minute

SUPPLY BURDEN
- Voltage Circuit: ~ 2W/10VA
- Current Circuit: ~ 1.0VA@Ib=5A

EXTERNALINTERFACE
- Optical port
- MC171 Type B

STANDARDS
- IEC 62056-21 IEC62055-31
- IEC 62055-41 IEC62055-51
- DISSCAM9 (Mc171)

LIQUID CRYSTAL DISPLAY (LCD)
- 1 0 digits + icons

DISPLAYS
- Current credit
- Total units counter
- Meter state register
- Instantaneous currentlvoltage
- Low credit level
- Maximum demand
- Hours left
- Previously entered STS tokens

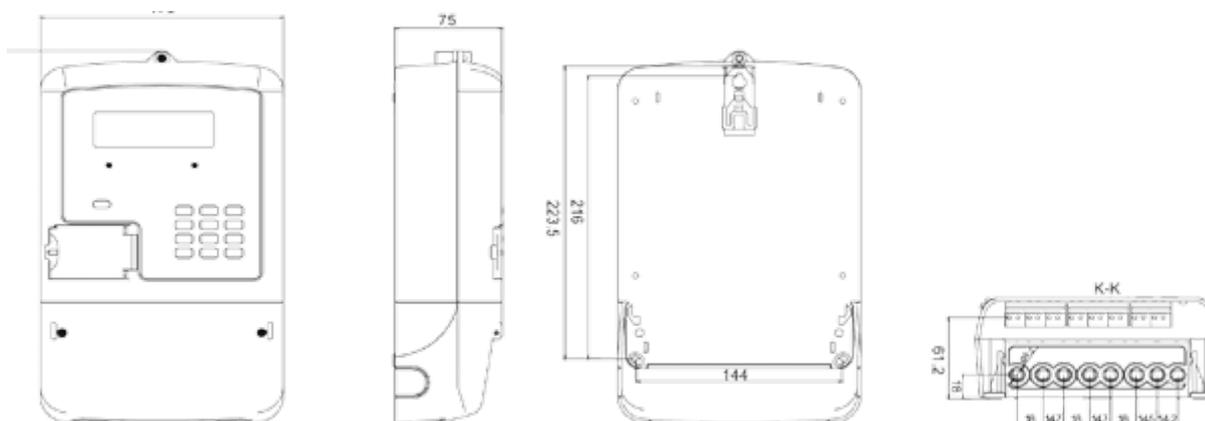### BUZZER
- Feedback on key press, token accept and reject melodies, low cred1t alarms

USER INTERFACE
- 12 keys, international outlay standard with 0-9 numeric key, backspace and information key

WEIGHT & DIMENSIONS
- Weight: 2.6kg
- Dimension: 287mm x 170mm x 75mm

Ultrasonic Heat Meter
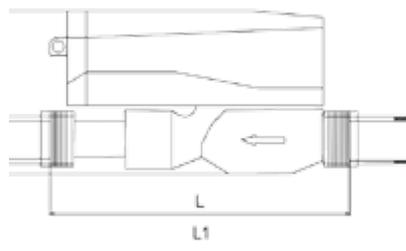
Ultrasonic Heat Meter

MERTRONIC Prepaid Water Meter provides an integrated solution of water volume measurement and prepayment. The rneter is recharged via a STS compliant 20-digit numeric token that may be generated by any STS compliant vending system.

It is an upgrade of **MERUR** highly successful DYS series keypad water meter which uses proprietary encryption protocol. Its underlying technology has been proven to be reliable and robust over the last 10 years.

Main Features

- STS compliant
- Adjustable low credit level warning
- Adjustable water Iimit
- Theft shutdown protection
- Adjustable emergency credit allowance
- Valve Protection
- Two Ieveis of low battery warning

Ultrasonic Heat Meter

Product spezifications

WORKING CONDITIONS
• Normal clear water 0.1°C - 40°C

POWER SUPPLY
• 3.6v Lithum Battary

AVERAGE STATIC ELECTRIC CURRENT CONSUMPTION
• ≤ 10 11 A

DISCONNECTION DEVICE
• Motor Valve

PROTECTION
• Theft Protection
• Tarning Protection
• Battery Protection
• Valve Cleanness Protection

WORKING PRESSURE
• 0.03 MPa~ 1MPa

LIFE OF BATTERY
• 6 years

FLOW PROFILE SENSITIIVTY LEVELS
• U10,D5

ELECTROMAGNETIC COMPATIBILITY LEVEL
• E1

AUTOMATIC SHUTDOWN(1st time)
• Low Credit/Low Battery Waming, resumes normal operation after a few minutes

AUTOMATIC SHUTDOWN(2nd time)
• Exhausted Credit/Exhausted battery, resumes normal operation after recharge or after battery being replaced

DISPLAY
• Last Purchase, Balance, Cumulative Consumption, Meter No. Last Credit Token, etc.

KEYPAD
• 12 keys, international outlay standard with 0-9 numeric keys, backspace and information key

Diameter Nominal	Measurement Ac-curacy	Maximum Flow Rate	Nominal Flow Rate	Transitional Flow Rate	Minimum Flow Rate	Minimum Reading	Maximum Reading
mm	M³/h						M³
15	Grade B	3.125	2.5	0.05	0.0313	0.0001	99999
20	Grade B	5	4	0.08	0.050	0.0001	99999
25	Grade B	7.875	6.3	0.126	0.0788	0.0001	99999

MERKUR ®
METERING

www.merkur-hamburg.de

Prepaid Gas Meter

Prepaid Gas Meter

MERTRONIC Prepaid Gas Meter is an unique residential gas meter designed to accurately measure volumes of natural gas. Its stringent components selection meets highest international standards.

It is designed to increase customer satisfaction and save costs by providing reliable performance and long-term measurement accuracy for residential applications.

Main Features

- ■ Proprietary encryption
- ■ Easy to install and low installation cost
- ■ Keypad with text feedback
- ■ Low credit waming
- ■ Low battery detection and waming
- ■ Advanced tampering detection

Prepaid Gas Meter

Product spezifications

POWER SUPPLY
• 3.6V Uthium Battery

AVERAGE STATIC ELECTRIC CURRENT CONSUMPTION
• Less than 18 PA

PROTECTION
• Theft Protection
• Tarning Protection
• Battery Protection

DISCONNECTION DEVICE
• Motor Valve

DISPLAY
• Current credit
• Total units counter
• Meter state register
• Low credit levei
• Meter Number
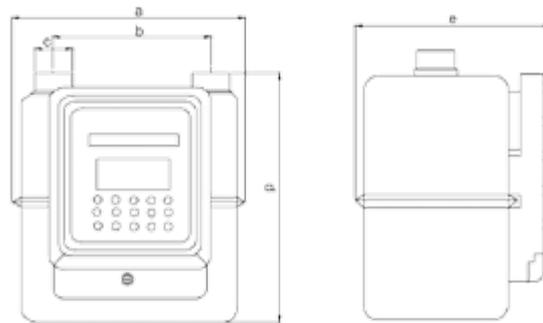• Units recharge record

OPERATING ENVIRONMENT
• Operating Temperature: -10°C - 40°C
• Relative Humidity: ≤ 85%

MEASURING ACCURACY
• Class B

Type	G 1.6	G 2.5	G 4
a	168	200	200
b	130	130	130
c	M30X2	M30X2	M30X2
d	215	230	230
e	115	170.5	170.5
Weight (kg)	1.6	2.3	2.3

Model No.	DYQ-2-1.6	DYQ-2-2.5	DYQ-2-4
Nominal Flow Rate m^3/h	1.6	2.5	4
Maximum Flow Rate m^3/h	2.5	4	6
Minimum Flow Rate m^3/h	0.016	0.025	0.040
Working Pressure Pa	0.5		
Basic Error %	$Qmin \leq Q \leq 0.1Qmax: \pm 3 ; 0.1Qmin \leq Q \leq 0.1Qmax: \pm 1.5$		
Leak-Provenance kPa	No leakage below 15kPa		
Pressure Loss kPa	≤250		
Maximum Reading m^3	99999.9		
Minimum Reading m^3	0.2		
Working Temperature	-10℃- 40℃		

MERKUR ®
METERING

Ultrasonic Heat Meter

Ultrasonic Heat Meter

MERTRONIC UltrasoniC Heat Meter is an innovative heat meter with static flow sensor based on the ultrasonic measuring principle. **MERTRONIC** Ultrasonic Heat Meter is designed for measuring the use of heating in which water is the heat-bearing medium.

MERTRONIC Ultrasonic Heat Meter utilises ultrasonic measuring methodology and microprocessor technology. All calculation and flow measuring circuits are designed on one single board, thus offering exceptional accuracy and reliability.

Main Features

- Little pressure loss
- Compact design
- Static meter, no moving parts
- High accuracy
- Digital part able to be installed separate from mechanism part via wire (<50cm)
- Reliable metering of heat consumption
- Long product life

Ultrasonic Heat Meter

Product spezifications

STANDARD
• EN1434-2007
• CJ128-2007

FLOW MAXIMUM INDICATION
• 999999.99 m3

HEAT MAXIMUM INDICATION
• 99999999 MJ

METROLOGICAL CLASS
• Class 2 or Class 3

PRESSURE LOSS
• <25kPa/qp

MAXIMUM OPERATION PRESSURE
• 1.6 Mpa

HEAT(COOL) CONSUMPTION CALCULATION
• From 0.25k

TEMPERATURE OF MEDIUM
• +4°C - +95°C

WATER TEMPERATURE DIFFERENTIATION
• 3°C - 60°C

TEMPERATURE RESOLUTION
• 0.01°C

AMBIENT TEMPERATURE
• +5°C - +55°C

BATTERY LIFE
• >6 years (lithium battery)

INSTALLATION METHOD
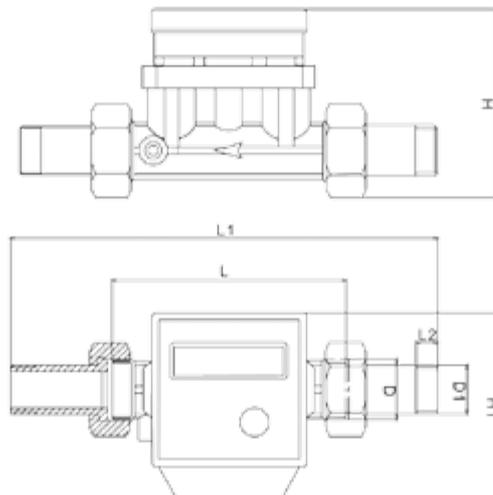• Horizontal or Vertical

HEAT MEDIUM
• Water

TEMPERATURE SENSOR
• PT1 000 platinum resistor

DISPLAY
• 8 digits

Type	Norminal Caliber (mm)	Maximum Flowrate	Permanent Flowrate	Minimum Flowrate	Installation Size		
	DN	qs (m³/h)	qp (m³/h)	qi (m³/h)	Meter Length L (mm)	Total Length L1	Hight H (mm)
DN20	20	5	2.5	0.05	130	235	150
DN25	25	7	3.5	0.07	160	280	160

Vending & Management System

Vending & Management System for Prepaid Meters

MERKUR has developed the **e-MERKUR** Technology, a resource vending and managament system,in order to address the neads of utilities for a robust, secure, flexible, user-friendly, and scalable system. **e-MERKUR** system is backed up by **MERKUR**' s over 1 0 years experience in prepayment and a team of IT and oommunication engineers with cutling - edge technologies.

The system is dMded into 5 major functional areas including registration of information, reports, system, tokens, tariff rates. The user interface design is intuitive and user friendly. Users may simply drag and drop icons to form individualizad home page, making browsing quick and efficient.

1. Registration of Information:
Supports registration of locations, customers, agents, meters, stores. Each may be registered independently or registered from data base. Meters may be moved from one store to another, from one location to another, or from one customer to another.

2. Reports:
Supports all types af reports including customer reports, vending reports, cash reports etc. Also supports end of shift report to allow for early fraud prevention. Raports may also be customised using a easy report design tool.

3. System:
Supports all system related activities such as setting up new operators etc.

4. Tokens:
Generates vending tokens or management specific tokens.

5. Tarlff Rates:
Allows to add consumption based rates, step levels, periodic fixed rates, periodic FBE etc. The rates can be grouped to form different tables that are applicable to different group of customers.

More advanced functions include remote reading at meters, time based tarif rates, meter order tracking, advanced reports af comparing consumption data with prepayment data etc.

MERKUR
METERING

www.merkur-hamburg.de

Vending & Management System

Main Features

- Supporting multiple utilities
- Supporting STS vending and management protocol
- Client and Server Architecture
- Online or offlinevending
- Scalable - Allowing multiple vending clients and online vending
- Support SQL2005 or above
- Flexible unlimited tariff tables supporting free basic electricity, tax, fixed rates, variable rates, step rates etc.
- Customisable home page

- Reports automatically emailed to authorized managers
- Support switch from post-payment to prepayment
- Multiple languages available
- Database and Server support GSM vending, prepaid card vending etc.
- Different leveis of user access privileges
- An underlying API that allows quick integration with financial systems, banking systems, POS etc.

MERKUR ®
METERING

www.merkur-hamburg.de

MERKUR Ueberseehandel GmbH

Headquarter Germany

Mattentwiete 5
20457 Hamburg
Germany

☎ +49 - 40 32 08 27 3
🖨 +49 - 40 32 08 27 59

✉ mail@merkur-hamburg.de

Office United Arab Emirates

Level 41, Emirates Towers
Sheikh Zayed Road
P.O. Box: 31 303
Dubai - U.A.E.

☎ +971 - 43 13 28 92
🖨 +971 - 43 13 27 53

Office Hongkong

Unit 1202, Level 12,
   One Peking Building
1 Peking Road, Tsim Sha Tsui
Hongkong

☎ +852 - 39 80 92 25
🖨 +852 - 39 80 92 34

Distributors

Afghanisatan

Liberty Corporation Co.
64m Street, Herat City
Afghanistan
☎ +937 - 99 69 44 81

Bahrain

Shaheen Group
P.O.Box 405
Manama
Kingdom of Bahrain
☎ +973 -17 81 35 35z

Cameroon

CALICO Sarl
BP 15566
Douala
Cameroon
☎ +237- 22 43 80 44

Ghana

Luminant Electricals
P.O. Box CT5204
Cantonment-Accra
Ghana
☎ +233 - 27 52 29 62 2

Lebanon

Tele Project
P.O. Box 55268
Sin el Fil
Lebanon
☎ +961 - 16 87 900

Oman

Trade Links and Services Co. LLC
P.O.Box 2901
Ruwi 112
Sultanate of Oman
☎ +968 - 24 70 67 75

Saudi Arabia

Ahmed Omer Bagazy Est.
P.O. Box 16367
Jeddah 21464
Saudi Arabia
☎ +966 - 26 47 29 28

Sri Lanka

Rotax Limited
332 Galle Road
Colombo 04
Sri Lanka
☎ +94 - 11 55 74 07 0

United Arab Emirates

Gilco Trading LLC
P.O. Box 4916
Daira, Dubai
United Arab Emirates
☎ +971 - 43 96 15 25

Yemen

Al Ashwal for Elecrical Trade &
   Agencies
Shoub Street
Sana'a
Yemen Republic
☎ +967 - 12 82 43 2

MERKUR®
GERMAN TECHNOLOGY