

EasyLogic™ DM6xx0H series

Technical Datasheet

DM6000H & DM6200H VAF PF digital panel meters in LED display

DM6220H VAF PF digital panel meters in LCD display

Introducing EasyLogic™ DM6xx0H meters that are ideal replacement for multiple analog meters for stand-alone metering in custom panels, switch boards, switch-gear, genset panels, motor control centres, power factor improvement panels and OEM panel board.

DM6xx0H series meters offer large 8-segment alpha-numeric LED display type, intuitive navigation with self-guided 4 buttons, bright LED's of 14.2 mm height with 12 LEDs for indicating percentage of load in the circuit.

DM6220H meter displays measured parameters and values in elegant single row, bright back lit graphical LCD display in 128 * 32 pixels size.

PB110316
PB120600



METSEDM6000HCL10NC



METSEDM6220HCL1

DM6xx0H



Front view DM6220H with LCD display



Front view DM6000H with LED display



Rear ISO DM6000H non comm

- Applications
 - Cost management
 - Electrical installation remote monitoring
 - Control panels
 - Motor control centres
 - Power distribution boards
 - Original equipment manufacturers (OEM's)
 - Building management system
 - Panel instrumentation
 - Energy management system
- Network management
 - Measurement of Power factor
 - % unbalance for voltage and current
 - Phase angle between the respective voltage and current phase
 - Modbus RTU protocol, RS-485 communication port for integration with energy management systems (DM6200H & DM6220H)
- Main characteristics
 - Easy to install: Mounts using two retainer clips, no tools required. Compact meter with 49 mm meter depth behind the panel, connectable up to 480 V +10 % AC volts L-L without voltage transformers for installation compliant with measurement category III, and double insulated
 - Easy to operate: Intuitive navigation with self-guided menus and Heartbeat LED indicates normal functioning of meters while it conveys the communication status when connected to RS-485 network
 - LED display: Intuitive navigation with self-guided, four buttons, 8 segment alphanumeric LEDs of height ~14.2mm (0.55 in) and three lines of concurrent values with Kilo & Mega value indicators
 - LCD display: Elegant single row, bright back lit graphical LCD display 128 * 32 pixels, Fast in-line view, three parameters name and value at one glance
 - Standard compliance:
 - EMI/ EMC tests as per IEC 61326-1
 - CE certification as per IEC 61010-1 Edition 3
 - cULus as per UL61010-1 and CAN/CSA-C22.2 IEC 61010-1 edition 3, for 480 V AC L-L
 - Accuracy class 1.0 for V AF PF metering
 - CT nominal: 5 A, I-nominal or 1 A, I-nominal (field settable)
 - Password: Field configurable password for securing set up information
 - Cyber security: Option for disabling RS-485 port through front panel keys against unauthorized access. This feature can also be used for maintenance and troubleshooting of complex communication network
 - Analog load bar in LED display: The colour-coded analog load bar at the front side indicates the percentage of load through 12 LED's with the option to select full scale based on connected load
 - Display: 4 digits for VAF PF parameters with auto scale and auto range features
 - Suppression current: To disregard the measurement of induced and panel auxiliary load current in the circuit (settable from 5 to 99 mA)
 - Protection cover to ensure that terminal screws do not detach from the housing and are touch proof against fingers
 - Smart line indicators in LCD display meter: Helps check the presence of input supply voltage (healthy phase)
 - Control power options: Universal range 44 to 300 V L-N AC/DC or low voltage DC control power of 9 to 36 V DC

DM6xx0H

DM6xx0H technical specifications

| General | |
|--|---|
| Use on LV & MV systems with Potential transformer (PT or VT)/ Current transformer (CT) ratio programmable at site | |
| Digital panel meters for measurement of basic electrical parameters | |
| Instantaneous rms values | |
| Current | Average line current of 3-phase, per-phase, and calculated neutral current |
| Voltage | Average voltage of L-L, L-N parameters, and per-phase |
| Frequency | Any available line |
| True power factor | Average and per-phase signed |
| Unbalance | Maximum % unbalance among phases for Volts & Amps |
| Revolution per minute (RPM) | RPM of alternator or generator when number of poles set for 2, 4, 6, 8, 12, 14 or 16 (any one pole) |
| Life timer stored in non-volatile memory | |
| Time counters for measuring meter ON Hrs and power interruptions | |
| Display | |
| LED display: Bright red colour, 8 segment alphanumeric LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row, auto range, auto scale | |
| LCD display: Elegant single row, bright back lit graphical LCD display 132 (Horizontal) * 32 (Vertical) pixels, 60 Degree angular view. Fast in-line view, three parameters name and value at one glance | |
| Communication | |
| RS-485 serial (DM6200H) | Channel connection Industry standard Modbus RTU protocol |
| Integration with software | Any Modbus compatible SCADA/ DCS/ PMS/ EMS/ BAS/ BMS software |
| Native Plug and Play support | Schneider Electric energy management system software - EcoStruxure™ Power Monitoring Expert, EcoStruxure™ Power SCADA Operation ION Setup utility software for set-up/programming of meters |
| Diagnostics | |
| Diagnostic page | Diagnostic page indicates the healthiness of communication system, device serial number, device model number OS & RS version, communication status. All LED segment check in LED display. In LCD display meter - alternate pixels ON/ OFF test. LCD contrast level, set back-lit time out in the range of 1 to 99 sec. |
| Lock/ Un-Lock | |
| Page lock and unlock features | Once the commonly referred page is enabled for lock feature, the display returns to locked page in 4 minutes of inactive time |
| Electrical characteristics | |
| Type of measurement | True RMS, 32 samples/cycle |
| Measurement accuracy (Class 1.0 meters) | |
| Current, per-phase & average | ± 0.5 % of reading |
| Voltage, L-N, L-L, per-phase & average | ± 0.5 % of reading |
| Power factor, per-phase & average | ± 0.01 of reading |
| Frequency | ± 0.05 % for F-nominal 50/60 Hz ± 2 ± 0.2 % for Frequency range from 30 to 48 Hz, 52 to 58 Hz and 62 to 70 Hz |
| Input-voltage | |
| VT (PT) connection | Selectable from No VT (direct), 1 VT, 2 VT to 3 VT |
| VT (PT) primary | 100 V L-L to 999 kV L-L max |
| U (V) nominal | Up to 277 V L-N/ 480 V L-L (selectable VT secondary from 100, 110, 115, 120 to 415 V L-L) |
| Operating voltage range with accuracy | 80-480 V L-L ± 10 % Category III |
| Measured Voltage with full range | 35 to 600 V L-L |
| Permanent overload (withstand) | 750 V L-L, continuous |
| Impedance | ≥ 5 MΩ |
| Frequency | 50/60 Hz ± 2 |
| VA burden | ≤ 0.2 VA at 240 V L-N at 50 Hz |
| Frequency – measurement | |
| Nominal operating range | 50/60 Hz ± 2 |
| Extended operating range | 30 to 48 Hz, 52 to 58 Hz and 62 to 70 Hz |
| Voltage input | 80 to 480 V L-L ± 10 % |

Comparisons

| Parameters / Model | DM6000H Class 1.0 44 to 300 V AC/DC control power | DM6200H Class 1.0 44 to 300 V AC/DC control power | DM6220H Class 1.0 44 to 300 V AC/DC control power | DM6220H Class 1.0 9 to 36 V LVDC control power |
|---|---|---|---|--|
| V A F – per ph & Avg | ■ | ■ | ■ | ■ |
| PF – per ph & Avg | ■ | ■ | ■ | ■ |
| % Load, % V & I Unbal, Ph-angle, RPM | ■ | ■ | ■ | ■ |
| Modbus RS-485 | | ■ | ■ | ■ |
| Commercial reference no. | METSEDM6000HCL10NC | METSEDM6200HCL10RS | METSEDM6220HCL1 | METSEDM6220HCL1LVD |

DM6xx0H

| Input-current | |
|--|--|
| CT connect | Solo or multi-phase current measurement by installing CT (s) in either of A1, A2, A3, A12, A23, A13, A123 phase(s) |
| CT primary | 1 A to 32767 A, programmable |
| CT secondary | 1 A or 5 A I-nominal (field settable) |
| Operating current range with accuracy | 10 mA to 6 A ⁺¹ |
| Measured Amps with over range & Crest Factor | 5 mA to 10 A |
| Suppression current | 5 to 99 mA (to disregard negligible load) |
| Impedance | < 0.3 mΩ |
| Permanent overload (withstand) | Continuous 10 A, 10 s/hr 50 A, 1 s/hr 500 A |
| Frequency | 50/60 Hz ± 2 |
| VA Burden | ≤0.1 V A at 5 A at 50 Hz |
| AC control power | |
| Operating range | 48 to 277 V L-N AC ± 10 % |
| Burden | ≤4 VA at 240 V L-N 50 Hz |
| Frequency | 50/60 Hz nominal (45 to 65 Hz operating range) |
| Ride-through time | 200 milliseconds at 240 V L-N, 50 Hz |
| DC control power | |
| Operating range | 48 to 277 V DC ± 10 % or LVDC option of 9 to 36 V DC |
| Burden | ≤2 W at 240 V DC |
| Ride-through time | 120 milliseconds at 240 V |
| Displays update | |
| Instantaneous/ RMS parameters | 1 s |
| Power system | |
| Phase labelling | Configurable to 123, ABC, rst, pqr or ryb |
| Wiring configuration | 13 wiring schemes (5 on front screen) 1ph, 2w, L-N 1ph, 2w, L-L 1ph, 3w, L-L with N (2-phase) 3ph, 3w, Delta, Ungrounded 3ph, 3w, Delta, Corner Grounded ⁺² 3ph, 3w, Wye, Ungrounded ⁺² 3ph, 3w, Wye Grounded ⁺² 3ph, 3w, Wye, Resistance Grounded ⁺² 3ph, 4w, Open Delta, Centre-Tapped ⁺² 3ph, 4w, Delta, Centre-Tapped ⁺² 3ph, 4w, Wye, Ungrounded ⁺² 3ph, 4w, Wye Grounded 3ph, 4w, Wye, Resistance Grounded ⁺² |

⁺¹ Additional error of ± 2 % between 10 mA to 50 mA, ± 1 % between 50 mA to 100 mA

⁺² Through communication

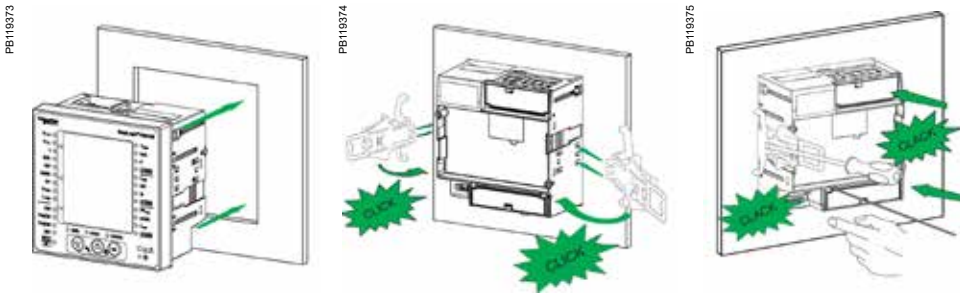
| Feature set summary | | | | |
|--|---|---|---|--|
| Parameter | DM6000H Class 1.0 44 to 300 V AC/DC control power | DM6200H Class 1.0 44 to 300 V AC/DC control power | DM6220H Class 1.0 44 to 300 V AC/DC control power | DM6220H Class 1.0 9 to 36 V LVDC control power |
| Sampling rate per cycle | 32 | 32 | 32 | 32 |
| Amps: average and per-phase, calculated neutral current | ■ | ■ | ■ | ■ |
| Voltage: V L-N, V L-L, average, per-phase | ■ | ■ | ■ | ■ |
| Power factor: average and per-phase | ■ | ■ | ■ | ■ |
| Frequency: any available phase | ■ | ■ | ■ | ■ |
| Revolutions per minute (RPM) | ■ | ■ | ■ | ■ |
| Phase angle : Amp Deg (V to Amps, per-phase) | ■ | ■ | ■ | ■ |
| % Unbalance: Maximum of 3-ph V and Amps | ■ | ■ | ■ | ■ |
| Life time counter - meter ON Hrs and number of power interruptions | ■ | ■ | ■ | ■ |
| Communication: RS-485, Modbus RTU protocol | | ■ | ■ | ■ |
| Commercial reference number | METSEDM6000HCL10NC | METSEDM6200HCL10RS | METSEDM6220HCL1 | METSEDM6220HCL1LVD |

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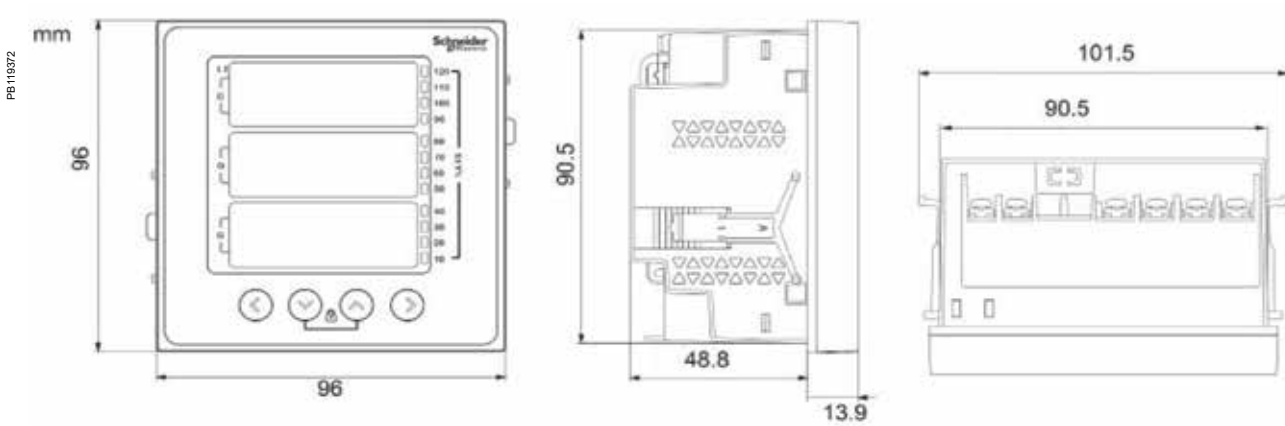
| DM6xx0H series | |
|--|--|
| Mechanical characteristics | |
| Weight | ~ 300 g (10.6 oz) |
| IP degree of protection | IP 51 front side, IP 54 with gasket (optional accessory), IP 30-meter body, tested as per IEC 60529 |
| Material | Polycarbonate meets UL 94V-0 flammability rating |
| Dimensions W x H x D | 96 x 96 x 49 mm (3.78 x 3.78 x 1.93 in) maximum depth of the meter from housing mounting flange and 13 mm (0.51 in) protrusion of meter from housing flange |
| Mounting position | Vertical |
| Panel thickness | 5 mm (0.196 in) maximum |
| Environmental characteristics | |
| Operating temperature | -10 to 60 °C (14 to 140 °F) |
| Storage temperature | -20 to 70 °C (-4 to 158 °F) |
| Humidity rating | 5 to 95 % RH non-condensing |
| Pollution degree | 2 |
| Altitude | ≤2000 m (6562 ft) Category III |
| Product life | >7 years |
| Insulation category | Double insulation for user accessible parts |
| Electromagnetic compatibility (tested as per IEC 61326-1) | |
| Electrostatic discharge | IEC 61000-4-2 |
| Immunity to radiated field | IEC 61000-4-3 |
| Immunity to fast transients | IEC 61000-4-4 |
| Immunity to impulse waves | IEC 61000-4-5 |
| Conducted immunity | IEC 61000-4-6 |
| Immunity to magnetic fields | IEC 61000-4-8 |
| Immunity to voltage dips | IEC 61000-4-11 |
| Emissions | Emissions FCC Part 15 Class A/CE |
| Safety | |
| Europe | CE, as per IEC 61010-1 edition 3 |
| US and Canada | cULus as per UL61010-1 and CAN/CSA-C22.2 IEC 61010-1 edition 3, for 480 V AC L-L |
| Measurement Category (Voltage inputs) | CAT III up to 480 V L-L |
| Overvoltage Category (Control power) | CAT III up to 300 V L-N |
| Dielectric | As per IEC/UL 61010-1 edition 3 |
| Protective Class | II, Double insulated for user accessible parts |
| Green premium | EOL, REACH , PEP, RoHS complied |
| Other certification | RCM & EAC for Russia |
| Communication | |
| RS-485 port | Modbus RTU: 2-Wires, with ground & shield, 4800, 9600, 19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity is Odd or Even, 2 stop bits if None DLF3000: Firmware update through communication port |
| Isolation | 2.5 kV RMS, double insulated |
| Protection features | User configurable password (selectable from 0000 to 9999) protected for set-up |
| Display language | English |
| Technical publication | Printed installation guide (QSG) supplied with meter in multi-language (EN, ES, FR, DE, PT, RU, TR, ZH) and user guide in soft format |
| Human machine interface | |
| Display type - LED | 8 segment Alpha-numeric LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row, 1 column of 12 LEDs to indicate percentage of load connected in system. 4 digits for VAF PF parameters with auto scrolling and auto range |
| Display type - LCD | Fast in-line view, three parameters name and value at one glance. 3+1 digits for instantaneous parameters and 5+3 digits for energy parameters with auto scale and auto range |
| Keypad | 4 buttons for navigation at the front, combination of 2 buttons for lock/unlocking of commonly viewed page |
| Communications activity | Green LED (for indicating RS-485 interface or heartbeat pulse) |

DM6xx0H

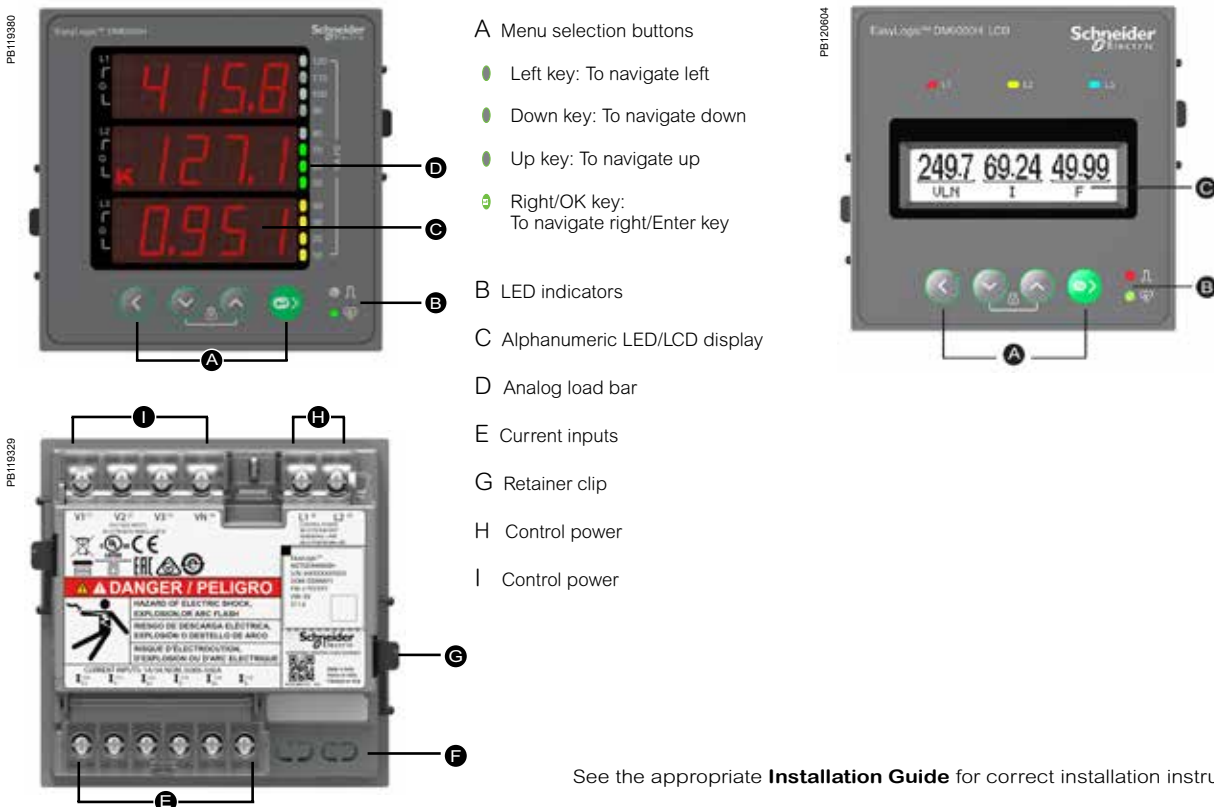
DM6xx0H VAF PF meter installation



DM6xx0H VAF PF meter mechanical dimensions



DM6xx0H series VAF PF meter display overview



See the appropriate **Installation Guide** for correct installation instructions.

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