

**MULTIMETER
EPM-07S**

MODBUS REGISTER MAP

| MODBUS REGISTER MAP | | | | | | | |
|---------------------|---------------|-------------------------------------|-----|------------------------|-------|------------|--------------|
| ADDRESS | ADDRESS (HEX) | REGISTER | R/W | RANGE | UNIT | MULTIPLIER | FORMAT |
| 0 | 0000 | L1 PHASE VOLTAGE | R | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 2 | 0002 | L2 PHASE VOLTAGE | R | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 4 | 0004 | L3 PHASE VOLTAGE | R | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 6 | 0006 | L1 PHASE CURRENT | R | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 8 | 0008 | L2 PHASE CURRENT | R | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 10 | 000A | L3 PHASE CURRENT | R | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 12 | 000C | NEUTRAL CURRENT | R | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 14 | 000E | L1-L2 PHASE-PHASE VOLTAGE | R | (0-5000)xUT | Volt | 0.1 | unsigned int |
| 16 | 0010 | L2-L3 PHASE-PHASE VOLTAGE | R | (0-5000)xUT | Volt | 0.1 | unsigned int |
| 18 | 0012 | L3-L1 PHASE-PHASE VOLTAGE | R | (0-5000)xUT | Volt | 0.1 | unsigned int |
| 20 | 0014 | L1 PHASE ACTIVE POWER | R | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 22 | 0016 | L2 PHASE ACTIVE POWER | R | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 24 | 0018 | L3 PHASE ACTIVE POWER | R | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 26 | 001A | L1 PHASE REACTIVE POWER | R | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 28 | 001C | L2 PHASE REACTIVE POWER | R | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 30 | 001E | L3 PHASE REACTIVE POWER | R | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 32 | 0020 | L1 PHASE APPARENT POWER | R | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 34 | 0022 | L2 PHASE APPARENT POWER | R | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 36 | 0024 | L3 PHASE APPARENT POWER | R | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 38 | 0026 | L1 PHASE COS _φ | R | (-1000 - 1000) | - | 0.001 | int |
| 40 | 0028 | L2 PHASE COS _φ | R | (-1000 - 1000) | - | 0.001 | int |
| 42 | 002A | L3 PHASE COS _φ | R | (-1000 - 1000) | - | 0.001 | int |
| 44 | 002C | TOTAL IMPORT ACTIVE POWER | R | (0 - 54000)xCTxVT | Watt | 0.1 | int |
| 46 | 002E | TOTAL EXPORT ACTIVE POWER | R | (0 - 54000)xCTxVT | Watt | 0.1 | int |
| 48 | 0030 | TOTAL INDUCTIVE REACTIVE POWER | R | (0 - 54000)xCTxVT | Var | 0.1 | int |
| 50 | 0032 | TOTAL CAPACITIVE REACTIVE POWER | R | (0 - 54000)xCTxVT | Var | 0.1 | int |
| 52 | 0034 | TOTAL APPARENT POWER | R | (0 - 54000)xCTxVT | VA | 0.1 | unsigned int |
| 54 | 0036 | AVERAGE INDUCTIVE COS _φ | R | (-1000 - 1000) | - | 0.001 | int |
| 56 | 0038 | AVERAGE CAPACITIVE COS _φ | R | (-1000 - 1000) | - | 0.001 | int |
| 58 | 003A | FREQUENCY | R | (4000 - 7000) | Hz | 0.01 | unsigned int |
| 60 | 003C | | | | | | |
| 62 | 003E | | | | | | |
| 64 | 0040 | | | | | | |
| 66 | 0042 | | | | | | |
| 68 | 0044 | | | | | | |
| 70 | 0046 | | | | | | |
| 72 | 0048 | | | | | | |
| 74 | 004A | | | | | | |
| 76 | 004C | | | | | | |
| 78 | 004E | | | | | | |
| 80 | 0050 | | | | | | |
| 82 | 0052 | | | | | | |
| 84 | 0054 | DIGITAL INPUT STATUS | R | - | - | - | - |
| 86 | 0056 | | R/W | 0-FFFFFFFFFFFFFF | Wh | 1 | long int |
| 88 | 0058 | IMPORT ACTIVE ENERGY-1 | R/W | 0-FFFFFFFFFFFFFF | Wh | 1 | long int |
| 90 | 005A | | R/W | 0-FFFFFFFFFFFFFF | Wh | 1 | long int |
| 92 | 005C | EXPORT ACTIVE ENERGY-1 | R/W | 0-FFFFFFFFFFFFFF | Wh | 1 | long int |
| 94 | 005E | | R/W | 0-FFFFFFFFFFFFFF | VArh | 1 | long int |
| 96 | 0060 | INDUCTIVE REACTIVE ENERGY-1 | R/W | 0-FFFFFFFFFFFFFF | VArh | 1 | long int |
| 98 | 0062 | | R/W | 0-FFFFFFFFFFFFFF | VArh | 1 | long int |
| 100 | 0064 | CAPACITIVE REACTIVE ENERGY-1 | R/W | 0-FFFFFFFFFFFFFF | VArh | 1 | long int |
| 102 | 0066 | | R/W | 0-FFFFFFFFFFFFFF | Wh | 1 | long int |
| 104 | 0068 | IMPORT ACTIVE ENERGY-2 | R/W | 0-FFFFFFFFFFFFFF | Wh | 1 | long int |
| 106 | 006A | | R/W | 0-FFFFFFFFFFFFFF | Wh | 1 | long int |
| 108 | 006C | EXPORT ACTIVE ENERGY-2 | R/W | 0-FFFFFFFFFFFFFF | Wh | 1 | long int |
| 110 | 006E | | R/W | 0-FFFFFFFFFFFFFF | VArh | 1 | long int |
| 112 | 0070 | INDUCTIVE REACTIVE ENERGY-2 | R/W | 0-FFFFFFFFFFFFFF | VArh | 1 | long int |
| 114 | 0072 | | R/W | 0-FFFFFFFFFFFFFF | VArh | 1 | long int |
| 116 | 0074 | CAPACITIVE REACTIVE ENERGY-2 | R/W | 0-FFFFFFFFFFFFFF | VArh | 1 | long int |
| 118 | 0076 | L1 PHASE MIN. VOLTAGE | R/W | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 120 | 0078 | L2 PHASE MIN. VOLTAGE | R/W | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 122 | 007A | L3 PHASE MIN. VOLTAGE | R/W | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 124 | 007C | L1-L2 PHASE-PHASE MIN. VOLTAGE | R/W | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 126 | 007E | L2-L3 PHASE-PHASE MIN. VOLTAGE | R/W | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 128 | 0080 | L3-L1 PHASE-PHASE MIN. VOLTAGE | R/W | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 130 | 0082 | L1 PHASE MIN. CURRENT | R/W | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 132 | 0084 | L2 PHASE MIN. CURRENT | R/W | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 134 | 0086 | L3 PHASE MIN. CURRENT | R/W | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 136 | 0088 | L1 PHASE MIN. ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 138 | 008A | L2 PHASE MIN. ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 140 | 008C | L3 PHASE MIN. ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 142 | 008E | L1 PHASE MIN. REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 144 | 0090 | L2 PHASE MIN. REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 146 | 0092 | L3 PHASE MIN. REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 148 | 0094 | L1 PHASE MIN. APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 150 | 0096 | L2 PHASE MIN. APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |

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|---------------------|---------------|--|-----|------------------------|-------|------------|--------------|
| ADDRESS | ADDRESS (HEX) | REGISTER | R/W | RANGE | UNIT | MULTIPLIER | FORMAT |
| 152 | 0098 | L3 PHASE MIN. APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 154 | 009A | TOTAL MIN. IMPORT ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 156 | 009C | TOTAL MIN. EXPORT ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 158 | 009E | TOTAL MIN. IMPORT REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 160 | 00A0 | TOTAL MIN. EXPORT REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 162 | 00A2 | TOTAL MIN. APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 164 | 00A4 | L1 PHASE MAX. VOLTAGE | R/W | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 166 | 00A6 | L2 PHASE MAX. VOLTAGE | R/W | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 168 | 00A8 | L3 PHASE MAX. VOLTAGE | R/W | (0-3000)xUT | Volt | 0.1 | unsigned int |
| 170 | 00AA | L1-L2 PHASE-PHASE MAX. VOLTAGE | R/W | (0-5000)xUT | Volt | 0.1 | unsigned int |
| 172 | 00AC | L2-L3 PHASE-PHASE MAX. VOLTAGE | R/W | (0-5000)xUT | Volt | 0.1 | unsigned int |
| 174 | 00AE | L3-L1 PHASE-PHASE MAX. VOLTAGE | R/W | (0-5000)xUT | Volt | 0.1 | unsigned int |
| 176 | 00B0 | L1 PHASE MAX. CURRENT | R/W | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 178 | 00B2 | L2 PHASE MAX. CURRENT | R/W | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 180 | 00B4 | L3 PHASE MAX. CURRENT | R/W | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 182 | 00B6 | L1 PHASE MAX. ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 184 | 00B8 | L2 PHASE MAX. ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 186 | 00BA | L3 PHASE MAX. ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 188 | 00BC | L1 PHASE MAX. REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 190 | 00BE | L2 PHASE MAX. REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 192 | 00C0 | L3 PHASE MAX. REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 194 | 00C2 | L1 PHASE MAX. APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 196 | 00C4 | L2 PHASE MAX. APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 198 | 00C6 | L3 PHASE MAX. APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 200 | 00C8 | TOTAL MAX. IMPORT ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 202 | 00CA | TOTAL MAX. EXPORT ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 204 | 00CC | TOTAL MAX. IMPORT REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 206 | 00CE | TOTAL MAX. EXPORT REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 208 | 00D0 | TOTAL MAX. APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 210 | 00D2 | L1 PHASE MAX. CURRENT DEMAND | R/W | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 212 | 00D4 | L2 PHASE MAX. CURRENT DEMAND | R/W | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 214 | 00D6 | L3 PHASE MAX. CURRENT DEMAND | R/W | (0-6000)xCT | Amper | 0.001 | unsigned int |
| 216 | 00D8 | L1 PHASE IMPORT MAX. DEMAND ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 218 | 00DA | L1 PHASE EXPORT MAX. DEMAND ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 220 | 00DC | L2 PHASE IMPORT MAX. DEMAND ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 222 | 00DE | L2 PHASE EXPORT MAX. DEMAND ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 224 | 00E0 | L3 PHASE IMPORT MAX. DEMAND ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 226 | 00E2 | L3 PHASE EXPORT MAX. DEMAND ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 228 | 00E4 | L1 PHASE IMPORT MAX. DEMAND REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 230 | 00E6 | L1 PHASE EXPORT MAX. DEMAND REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 232 | 00E8 | L2 PHASE IMPORT MAX. DEMAND REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 234 | 00EA | L2 PHASE EXPORT MAX. DEMAND REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 236 | 00EC | L3 PHASE IMPORT MAX. DEMAND REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 238 | 00EE | L3 PHASE EXPORT MAX. DEMAND REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 240 | 00F0 | L1 PHASE MAX. DEMAND APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 242 | 00F2 | L2 PHASE MAX. DEMAND APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 244 | 00F4 | L3 PHASE MAX. DEMAND APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |
| 246 | 00F6 | TOTAL IMPORT MAX. DEMAND ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 248 | 00F8 | TOTAL EXPORT MAX. DEMAND ACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Watt | 0.1 | int |
| 250 | 00FA | TOTAL IMPORT MAX. DEMAND REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 252 | 00FC | TOTAL EXPORT MAX. DEMAND REACTIVE POWER | R/W | (-18000 - 18000)xCTxVT | Var | 0.1 | int |
| 254 | 00FE | TOTAL MAX. DEMAND APPARENT POWER | R/W | (0 - 18000)xCTxVT | VA | 0.1 | unsigned int |

| ADDRESS | ADDRESS (HEX) | REGISTER | R/W | RANGE | UNIT | MULTIPLIER | FORMAT |
|---------|---------------|----------------------------------|-----|---------|--------|------------|-----------|
| 32768 | 8000 | VOLTAGE TRANSFORMER RATIO | R/W | 0-40000 | - | 0.1 | short-int |
| 32769 | 8001 | CURRENT TRANSFORMER RATIO | R/W | 0-2000 | - | 1 | short-int |
| 32770 | 8002 | CALCULATION METHOD | R/W | 0-5 | - | - | short-int |
| 32771 | 8003 | DEMAND TIME | R/W | 1-60 | minute | 1 | short-int |
| 32772 | 8004 | PULSE RATIO | R/W | 0-6 | - | - | short-int |
| 32773 | 8005 | PULSE OUTPUT 1 PARAMETER SETTING | R/W | 0-5 | - | - | short-int |
| 32774 | 8006 | PULSE OUTPUT 2 PARAMETER SETTING | R/W | 0-5 | - | - | short-int |
| 32775 | 8007 | ENERGY COUNTER 1 SELECTION | R/W | 0-3 | - | - | short-int |
| 32776 | 8008 | ENERGY COUNTER 2 SELECTION | R/W | 0-3 | - | - | short-int |
| 32777 | 8009 | COMMUNICATION ADDRESS | R/W | 0 - 247 | - | - | short-int |
| 32778 | 800A | BAUD RATE | R/W | 1 - 5 | - | - | short-int |
| 32779 | 800B | PARITY | R/W | 0 - 2 | - | - | short-int |
| 32780 | 800C | PASSWORD ENABLE | R/W | 0-1 | - | - | short-int |
| 32781 | 800D | PASSWORD | R/W | 0-9999 | - | - | short-int |

**PULSE OUTPUT 1-2
PARAMETER SETTING 0-5 :**
 0: Active
 1: Active Import
 2: Active Export
 3: Reactive
 4: Reactive Import
 5: Reactive Export

PULSE RATIO 0-6 :
 0: 1 Watt / Pulse
 1: 10 Watt / Pulse
 2: 100 Watt / Pulse
 3: 1 kW / Pulse
 4: 10 kW / Pulse
 5: 100 kW / Pulse
 6: 1 MW / Pulse

ENERGY COUNTER 1 SELECTION 0-3 :
 0: On (EC - Energy counter- will count on all conditions)
 1: EC will count when Digital Input1 is 1 (1=active)
 2: EC will count when Digital Input2 is 1 (1=active)
 3: Inverse Energy Counter 2 (It will count when EC2 is not counted)

ENERGY COUNTER 2 SELECTION 0-3 :
 0: On (EC - Energy counter- will count on all conditions)
 1: EC will count when Digital Input1 is 1 (1=active)
 2: EC will count when Digital Input2 is 1 (1=active)
 3: Inverse Energy Counter 1 (It will count when EC1 is not counted)

BAUD RATE 1-5 :
 1: 38400 bps
 2: 19200 bps
 3: 9600 bps
 4: 4800 bps
 5: 2400 bps

PARITY 0-2 :
 0: No
 1: Odd
 2: Even

PASSWORD ENABLE 0-1 :
 0: Disable
 1: Enable

CALCULATION 0-5 :
 Refer to "Reactive Energy Calculation Method Setting" on page 2.