ENDA EPC PID PROFILE CONROLLER SERIES MODBUS PROTOCOL ADDRESS MAP

1.1 Memory map for Holding Registers

| 000004 (0000h) | Holding Register addresses Desimal (Hex) | Data Type | Data Content | Parameter Name | Read / Write permission |
|--|--|-----------|---|----------------------|-------------------------|
| 10002d (0002h) 1002h 100 | 0000d (0000h) | Byte | Hysteresis of the control output (Adjustable between 1 and 50 °C/F) | C.H Y 5 | Readable / Writable |
| 0003d (0003h) | 0001d (0001h) | Byte | Hysteresis of the Alarm1 output (Adjustable between 1 and 50 °C/F) | A I.HY | Readable / Writable |
| 0004d (0004h) Byte | 0002d (0002h) | Byte | Hysteresis of the Alarm2 output (Adjustable between 1 and 50 °C/F) | 82.HY | Readable / Writable |
| 2005d (0005h) Byte Type of input (0 = PT100, 1 = PT100 decimal, 2 = J. 3 = K, 4 = T., 5 = S, 6 = R, 2 = O.20 = O.20 m/s, 8 + Δ.20 m/s | 0003d (0003h) | Byte | Proportional band set value (Adjustable between 0% and 100%) | РЬ. | Readable / Writable |
| 100666 00066h 10066 1 | 0004d (0004h) | Byte | Control period (Adjustable between 4 and 250) | EE. | Readable / Writable |
| Q00660 Q0066h Byte | 0005d (0005h) | Byte | | ınΡ. | Readable / Writable |
| 1 | 0006d (0006h) | Byte | Ratio of output power at the set point (Adjustable between 0% and 100%) | P.5E Ł. | Readable / Writable |
| 1000e0 1 | 0007d (0007h) | Byte | | A.Con. | Readable / Writable |
| 00094 (0009h) Byte Parameter's of PLC menu security level parameter (nonE Insibility PSE S-Modification can be done PnosChyl visible). R.L.Z. Readable / Writable 00104 (000Ah) Byte Configuration menu accesses level code (0 = Invisible, R.L.D. Readable / Writable 00114 (000Bh) Byte Self-tune menu accesses level code (0 = Invisible, R.L.D. Readable / Writable 00124 (000Ch) Byte Type of Alarm (0 = Independent; 1 = Deviation; 2 = Band) R.L.P. Readable / Writable 00134 (000Ch) Byte Type of Alarm (10 = Independent; 1 = Deviation; 2 = Band) R.L.P. Readable / Writable 00144 (000Ch) Byte Type of Alarm (10 = Independent; 1 = Deviation; 2 = Band) R.L.P. Readable / Writable 00154 (000Ch) Byte Device address for RS485 (Alguistable between 1 and 247) d.R.d.r. Readable / Writable 00164 (000Ch) Byte Device address for RS485 (Alguistable between 1 and 247) d.R.d.r. Readable / Writable 00164 (000Ch) Byte Baud rate (0 = None;1 = 1200bps; 2 = 2400bps; 3 = 4800bps; 3 = 4800bps; 4 = 49500bps; 5 = 19200bps; 5 = 19200bps; 5 = 19200bps; 6 = 19 | 0008d (0008h) | Byte | Invisible. P 4 E 5 = Modification can be done. P. a = Only visible.) | A.AL. I. | Readable / Writable |
| 0010d (000Ah) Byte Configuration menu accesses level code (0 = Invisible, 1-4 Modification can be done 2 or 3 = Only visible). R. L. n.F. Readable / Writable | 0009d (0009h) | Byte | Paramater's of R.Lc.2 menu security level parameter (nonE= | A.AL.2. | Readable / Writable |
| 1912 000Ch Byte Type of Alarm 1 (0= Independent; 1= Deviation; 2= Band) R L.P. Readable / Writable | 0010d (000Ah) | Byte | Configuration menu accsess level code (0 = Invisible, | A.E.n.F. | Readable / Writable |
| 0012d (000Ch) Byte Type of Alarm1 (0= Independent; 1= Deviation; 2= Band) R 1, L.P. Readable / Writable 0013d (000Dh) Byte Type of Alarm2 (0= Independent; 1= Deviation; 2= Band) R 2, L.P. Readable / Writable 0014d (000Eh) Byte SyValue for output during a sensor failure (Adjustable between 6 and 100%) P r, E r. Readable / Writable 0015d (000Fh) Byte Device address for RS485 (Adjustable between 1 and 247) d.Rdr. Readable / Writable 0016d (0010h) Byte Baud rate (0= None; 1=1200pps; 2=2400bps; 3=4800bps; bR u.d. Readable / Writable 0017d (0011h) Byte Filter coefficient (1 = Most quick response time F L.E.o. Readable / Writable 0018d (0012h) Byte Type of control output (0 = Out1;1 = SSr.; 2 = 0-20; 3 = 4-20) £ b.S. Readable / Writable 0019d (0013h) Byte Time base set parameter (0 = Second,1 = Minute) £ b.B.S. Readable / Writable 0020d (0014h) Byte Action of Parameter on parameter (0 = Stop,1 = Continue) P.o.p.b. Readable / Writable | 0011d (000Bh) | Byte | Self-tune menu accsess level code (0 = Invisible, | A.Lun. | Readable / Writable |
| 0014d (000Eh) Byte %Value for output during a sensor failure Pr.Er. Readable / Writable 0015d (000Fh) Byte Device address for RS485 (Adjustable between 1 and 247) d.Rdr. Readable / Writable 0016d (0010h) Byte Baud rate (0 = None, 1=1200bps; 2=2400bps; 3=4800bps; bR u.d. Readable / Writable 0017d (0011h) Byte Filter coefficient (1 = Nost quick response time £ L.C. Readable / Writable 0018d (0012h) Byte Type of control output (0 = Out1;1 = SSr.; 2 = 0-20; 3 = 4-20) £ .D.S. Readable / Writable 0019d (0013h) Byte Type of control output (0 = Out1;1 = SSr.; 2 = 0-20; 3 = 4-20) £ .D.S. Readable / Writable 0020d (0014h) Byte Action of Parameter (0 = Second, 1 = Minute) £ .B.S. Readable / Writable 0021d (0015h) Byte Action of Parameter on parameter (0 = Stop, 1 = Continue) \$.n.v.r. Readable / Writable 0022d (0016h) Byte Display selection parameter (Can be adjustable 0-8.) \$.n.v.r. \$.n.v.r. \$.n.v.r. Readable / Writable | 0012d (000Ch) | Byte | | A I.LP. | Readable / Writable |
| O15d (000Fh) | 0013d (000Dh) | Byte | Type of Alarm2 (0= Independent; 1= Deviation ; 2= Band) | A2.EP. | Readable / Writable |
| Dote | 0014d (000Eh) | Byte | | Pr.Er. | Readable / Writable |
| Dot27d Dot37d D | 0015d (000Fh) | Byte | Device address for RS485 (Adjustable between 1 and 247) | d.Adr. | Readable / Writable |
| 0017d (0011h) Byte 32 = Most slow response time F L L D. Readable / Writable 0018d (0012h) Byte Type of control output (0 = Out1;1 = SSr.; 2 = 0-20; 3 = 4-20) L D L D L D L D L D L D L D L D L D L | 0016d (0010h) | Byte | | bRud. | Readable / Writable |
| 0019d (0013h) Byte Time base set parameter (0 = Second,1 = Minute) £.b f.S. Readable / Writable 0020d (0014h) Byte Action of Parameter on parameter (0 = Stop,1 = Continue) P.an.Ł. Readable / Writable 0021d (0015h) Byte Maximum segment number (Can be adjustable 0-8.) 5.nuñ. Readable / Writable 0022d (0016h) Byte Display selection parameter (Can be adjustable 0-10.) d.5£ L. Readable / Writable 0023d (0017h) Byte Self tune control parameter (0 = Self tune stop,1 = Self tune start) 5.Ł u.E. Readable / Writable 0256d (0100h) Word The temperature set value will be done self tune. £.5£ E. Readable / Writable 0257d (0101h) Word Alarm1 set value R.l.5£. Readable / Writable 0258d (0102h) Word Alarm2 set value R.2.5£. Readable / Writable 0259d (0103h) Word Integral time (0.1 100.0 min) £ I. Readable / Writable 0260d (0104h) Word Derivative time (0.01-10.00 min) £ J. Readable / Writable 0261d (0105h) Word Set point lower limit £ L.b.L. Readable / Writable 0262d (0106h) | 0017d (0011h) | Byte | Filter coefficient (1 = Most quick response time | FL.Co. | Readable / Writable |
| 0020d (0014h) Byte Action of Parameter on parameter (0 = Stop,1 = Continue) P.D.R.L. Readable / Writable 0021d (0015h) Byte Maximum segment number (Can be adjustable 0-8.) 5.nuñ. Readable / Writable 0022d (0016h) Byte Display selection parameter (Can be adjustable 0-10.) d.5£L. Readable / Writable 0023d (0017h) Byte Self tune control parameter (0 = Self tune stop,1 = Self tune start) 5.Lu.E. Readable / Writable 0256d (0100h) Word The temperature set value will be done self tune. £.5£L Readable / Writable 0257d (0101h) Word Alarm1 set value R.1.5£. Readable / Writable 0258d (0102h) Word Alarm2 set value R.2.5£. Readable / Writable 0259d (0103h) Word Integral time (0.1 100.0 min) £ Readable / Writable 0260d (0104h) Word Derivative time (0.01-10.00 min) £.d. Readable / Writable 0261d (0105h) Word Set point lower limit £.Lo.L. Readable / Writable 0262d (0106h) Word Set point upper limit £.L.L. Readable / Writable 0263d (0107h) Word Alarm1 | 0018d (0012h) | Byte | Type of control output (0 = Out1;1 = SSr. ; 2 = 0-20 ; 3 = 4-20) | €.oŁ.5. | Readable / Writable |
| 0021d (0015h) Byte Maximum segment number (Can be adjustable 0-8.) \$5.000. Readable / Writable 0022d (0016h) Byte Display selection parameter (Can be adjustable 0-10.) \$d.5EL. Readable / Writable 0023d (0017h) Byte Self tune control parameter (0 = Self tune stop,1 = Self tune start) \$5.Eu.E. Readable / Writable 0256d (0100h) Word The temperature set value will be done self tune. \$5.Eu.E. Readable / Writable 0257d (0101h) Word Alarm1 set value \$7.5E. Readable / Writable 0258d (0102h) Word Alarm2 set value \$7.5E. Readable / Writable 0259d (0103h) Word Integral time (0.1 100.0 min) \$5.Eu.E. Readable / Writable 0260d (0104h) Word Derivative time (0.01 -10.00 min) \$5.Eu.E. Readable / Writable 0261d (0105h) Word Set point lower limit \$5.Eu.E. Readable / Writable 0262d (0106h) Word Set point upper limit \$5.Eu.E. Readable / Writable 0263d (0107h) Word Alarm1 value lower limit \$7.Eu.E. Readable / Writable 0264d (0108h) Word Alarm1 value upper lim | 0019d (0013h) | Byte | Time base set parameter (0 = Second,1 = Minute) | Ł.&R S. | Readable / Writable |
| 0022d (0016h) Byte Display selection parameter (Can be adjustable 0-10.) d.5EL. Readable / Writable 0023d (0017h) Byte Self tune control parameter (0 = Self tune stop,1 = Self tune start) 5.Eu.E. Readable / Writable 0256d (0100h) Word The temperature set value will be done self tune. E.5EE Readable / Writable 0257d (0101h) Word Alarm1 set value R 2.5E. Readable / Writable 0258d (0102h) Word Alarm2 set value R 2.5E. Readable / Writable 0259d (0103h) Word Integral time (0.1 100.0 min) E.i. Readable / Writable 0260d (0104h) Word Derivative time (0.01 -10.00 min) Ed. Readable / Writable 0261d (0105h) Word Set point lower limit E.L.o.L. Readable / Writable 0262d (0106h) Word Set point upper limit E.H.L. Readable / Writable 0263d (0107h) Word Alarm1 value lower limit R I.L.L. Readable / Writable 0263d (0109h) Word Alarm2 value lower limit R I.H.L. Readable / Writable 0266d (010Ah) Word Alarm2 value upper limit R 2.L.L. | 0020d (0014h) | Byte | Action of Parameter on parameter (0 = Stop,1 = Continue) | P.on.Ł. | Readable / Writable |
| Self tune control parameter (0 = Self tune stop,1 = Self tune start) S.E.u.E. Readable / Writable | 0021d (0015h) | Byte | Maximum segment number (Can be adjustable 0-8.) | 5.000. | Readable / Writable |
| 0256d (0100h) Word The temperature set value will be done self tune. £.5££ Readable / Writable 0257d (0101h) Word Alarm1 set value £ 1.5£. Readable / Writable 0258d (0102h) Word Alarm2 set value £ 2.5£. Readable / Writable 0259d (0103h) Word Integral time (0.1 100.0 min) £ 1. Readable / Writable 0260d (0104h) Word Derivative time (0.01 -10.00 min) £ d. Readable / Writable 0261d (0105h) Word Set point lower limit £ l. al. Readable / Writable 0262d (0106h) Word Set point upper limit £ l. l. Readable / Writable 0263d (0107h) Word Offset value (Adjustable between -99 C and +99 C) DFF5. Readable / Writable 0264d (0108h) Word Alarm1 value lower limit £ l.L. Readable / Writable 0265d (0109h) Word Alarm2 value lower limit £ l.H. Readable / Writable 0267d (0108h) Word Alarm2 value upper limit £ l.H. Readable / Writable 0268d (0100h) Word Alar | 0022d (0016h) | Byte | Display selection parameter (Can be adjustable 0-10.) | d.5EL. | Readable / Writable |
| 0257d (0101h) Word Alarm1 set value # 1.5£. Readable / Writable 0258d (0102h) Word Alarm2 set value # 2.5£. Readable / Writable 0259d (0103h) Word Integral time (0.1 100.0 min) £ i. Readable / Writable 0260d (0104h) Word Derivative time (0.01 -10.00 min) £ d. Readable / Writable 0261d (0105h) Word Set point lower limit £ l.L. Readable / Writable 0262d (0106h) Word Set point upper limit £ l.L. Readable / Writable 0263d (0107h) Word Offset value (Adjustable between -99 C and +99 C) DFF 5. Readable / Writable 0264d (0108h) Word Alarm1 value lower limit # 1.L.L. Readable / Writable 0265d (0109h) Word Alarm2 value lower limit # 2.L.L. Readable / Writable 0266d (010Ah) Word Alarm2 value upper limit # 2.H.L. Readable / Writable 0268d (010Ch) Word Alarm2 value upper limit # 2.H.L. Readable / Writable | 0023d (0017h) | Byte | Self tune control parameter (0 = Self tune stop,1 = Self tune start) | 5.Łu.E. | Readable / Writable |
| 0257d (0101h) Word Alarm1 set value # 1.5£. Readable / Writable 0258d (0102h) Word Alarm2 set value # 2.5£. Readable / Writable 0259d (0103h) Word Integral time (0.1 100.0 min) £ i. Readable / Writable 0260d (0104h) Word Derivative time (0.01 -10.00 min) £ d. Readable / Writable 0261d (0105h) Word Set point lower limit £ l.L. Readable / Writable 0262d (0106h) Word Set point upper limit £ l.L. Readable / Writable 0263d (0107h) Word Offset value (Adjustable between -99 C and +99 C) DFF 5. Readable / Writable 0264d (0108h) Word Alarm1 value lower limit # 1.L.L. Readable / Writable 0265d (0109h) Word Alarm2 value lower limit # 2.L.L. Readable / Writable 0266d (010Ah) Word Alarm2 value upper limit # 2.H.L. Readable / Writable 0268d (010Ch) Word Alarm2 value upper limit # 2.H.L. Readable / Writable | | | | | |
| 0258d (0102h) Word Alarm2 set value #2.5£. Readable / Writable 0259d (0103h) Word Integral time (0.1 100.0 min) £ i. Readable / Writable 0260d (0104h) Word Derivative time (0.01 -10.00 min) £ d. Readable / Writable 0261d (0105h) Word Set point lower limit £ l. a. L. Readable / Writable 0262d (0106h) Word Set point upper limit £ l. l. l. Readable / Writable 0263d (0107h) Word Offset value (Adjustable between -99 C and +99 C) DFF5. Readable / Writable 0264d (0108h) Word Alarm1 value lower limit # I.H.L. Readable / Writable 0265d (0109h) Word Alarm2 value lower limit # Z.L.L. Readable / Writable 0266d (0108h) Word Alarm2 value upper limit # Z.H.L. Readable / Writable 0268d (0100h) Word Alarm2 value upper limit # Z.H.L. Readable / Writable 0268d (0100h) Word Segment increment temperature band.(Can be adjustable between the 0 and 5 E . P Readable / Writable | 0256d (0100h) | Word | The temperature set value will be done self tune. | E.SEŁ | Readable / Writable |
| O259d (0103h) Word Integral time (0.1 100.0 min) E I. Readable / Writable | 0257d (0101h) | Word | Alarm1 set value | R 1.5E. | Readable / Writable |
| 0260d (0104h) Word Derivative time (0.01 - 10.00 min) Ed. Readable / Writable 0261d (0105h) Word Set point lower limit E.Lo.L. Readable / Writable 0262d (0106h) Word Set point upper limit E.H.L. Readable / Writable 0263d (0107h) Word Offset value (Adjustable between -99 C and +99 C) DFF5. Readable / Writable 0264d (0108h) Word Alarm1 value lower limit Readable / Writable 0265d (0109h) Word Alarm2 value lower limit Readable / Writable 0267d (0108h) Word Alarm2 value upper limit Readable / Writable 0268d (010Ch) Word Segment increment temperature band.(Can be adjustable between the 0 and Segment increment temperature band.(Can be adjustable between the 0 and Segment increment temperature band.(Can be adjustable between the 0 and | 0258d (0102h) | Word | Alarm2 set value | R2.5E. | Readable / Writable |
| 0261d (0105h) Word Set point lower limit | 0259d (0103h) | Word | Integral time (0.1 100.0 min) | Ł 1. | Readable / Writable |
| 0262d (0106h) Word Set point upper limit | 0260d (0104h) | Word | Derivative time (0.01 -10.00 min) | Ed. | Readable / Writable |
| 0263d (0107h) Word Offset value (Adjustable between -99 C and +99 C) DFF5. Readable / Writable 0264d (0108h) Word Alarm1 value lower limit Readable / Writable 0265d (0109h) Word Alarm1 value upper limit Readable / Writable 0266d (010Ah) Word Alarm2 value lower limit Readable / Writable 0267d (010Bh) Word Alarm2 value upper limit Readable / Writable 0268d (010Ch) Word Segment increment temperature band.(Can be adjustable between the 0 and Segment increment temperature band.(Can be adjustable between the 0 and Segment increment temperature band.(Can be adjustable between the 0 and Segment increment temperature band.(Can be adjustable between the 0 and | 0261d (0105h) | Word | Set point lower limit | C.Lo.L. | Readable / Writable |
| 0264d (0108h) Word Alarm1 value lower limit Readable / Writable 0265d (0109h) Word Alarm1 value upper limit Readable / Writable 0266d (010Ah) Word Alarm2 value lower limit Readable / Writable 0267d (010Bh) Word Alarm2 value upper limit Readable / Writable 0268d (010Ch) Word Segment increment temperature band.(Can be adjustable between the 0 and control of the property of t | 0262d (0106h) | Word | Set point upper limit | [.H _{i.L.} | Readable / Writable |
| 0265d (0109h) Word Alarm1 value upper limit Readable / Writable 0266d (010Ah) Word Alarm2 value lower limit Readable / Writable 0267d (010Bh) Word Alarm2 value upper limit Readable / Writable 0268d (010Ch) Word Segment increment temperature band.(Can be adjustable between the 0 and can be | 0263d (0107h) | Word | Offset value (Adjustable between -99 C and +99 C) | OFFS. | Readable / Writable |
| 0266d (010Ah) Word Alarm2 value lower limit ## 2.L.L. Readable / Writable 0267d (010Bh) Word Alarm2 value upper limit ## 2.H.L. Readable / Writable 0268d (010Ch) Word Segment increment temperature band.(Can be adjustable between the 0 and control of the property of the prope | 0264d (0108h) | Word | Alarm1 value lower limit | A I.L.L. | Readable / Writable |
| 0267d (010Bh) Word Alarm2 value upper limit #2.H.L. Readable / Writable 0268d (010Ch) Word Segment increment temperature band.(Can be adjustable between the 0 and 5.F. / P. Readable / Writable | 0265d (0109h) | Word | Alarm1 value upper limit | A I.H.L. | Readable / Writable |
| 0268d (010Ch) Word Segment increment temperature band.(Can be adjustable between the 0 and C.F., P. Readable / Writable | 0266d (010Ah) | Word | Alarm2 value lower limit | A 2.L.L. | Readable / Writable |
| 0268d (010Ch) Word Segment increment temperature band.(Can be adjustable between the 0 and 5 E. r.P. Readable / Writable | 0267d (010Bh) | Word | Alarm2 value upper limit | A 2.H.L. | Readable / Writable |
| | 0268d (010Ch) | Word | | 5E. ₁ .P. | Readable / Writable |

ENDA EPC PID PROFIL CONTROLLER SERIES MODBUS PROTOCOL ADDRESS MAP

1.1 Memory map for Holding Registers

| Holding Register addresses Desimal (Hex) | Data Type | Data Content | Parameter Name | Read / Write permission |
|--|-----------|--|-------------------|-------------------------|
| 0512d (0200h) | Word | 1.Segment target temperature value | Ł.ŁE. I | Readable / Writable |
| 0513d (0201h) | Word | 1.Segment time value | E 1. 1 | Readable / Writable |
| 0514d (0202h) | Word | 2.Segment target temperature value | Ł.ŁE.Z | Readable / Writable |
| 0515d (0203h) | Word | 2.Segment time value | Ŀ ı.2 | Readable / Writable |
| 0516d (0204h) | Word | 3.Segment target temperature value | Ł.Ł <i>E</i> .3 | Readable / Writable |
| 0517d (0205h) | Word | 3.Segment time value | £ 1.3 | Readable / Writable |
| 0518d (0206h) | Word | 4.Segment target temperature value | Ł.ŁE.Y | Readable / Writable |
| 0519d (0207h) | Word | 4.Segment time value | E 1.4 | Readable / Writable |
| 0520d (0208h) | Word | 5.Segment target temperature value | Ł.ŁE.S | Readable / Writable |
| 0521d (0209h) | Word | 5.Segment time value | Ŀ 1.5 | Readable / Writable |
| 0522d (020Ah) | Word | 6.Segment target temperature value | Ł.ŁE.6 | Readable / Writable |
| 0523d (020Bh) | Word | 6.Segment time value | Ł 1.5 | Readable / Writable |
| 0524d (020Ch) | Word | 7.Segment target temperature value | Ł.ŁE.7 | Readable / Writable |
| 0525d (020Dh) | Word | 7.Segment time value | Ŀ7 | Readable / Writable |
| 0526d (020Eh) | Word | 8.Segment target temperature value | Ł.ŁE.8 | Readable / Writable |
| 0527d (020Fh) | Word | 8.Segment time value | Ł 1.8 | Readable / Writable |
| 0528d (0210h) | Word | AL2 outputs set value MSB Seg8 Seg7 Seg6 Seg5 Seg4 Seg3 Seg2 Seg1 15 14 13 12 11 10 9 8 AL1 outputs set value LSB Seg8 Seg7 Seg6 Seg5 Seg4 Seg3 Seg2 Seg1 7 6 5 4 3 2 1 0 EXAMPLE: If MSB, Seg2=1, while the 2.segment working;AL2=0. If LSB, Seg5=1, while the 5.segment working;AL1=0. | | |

1.2 Memory map for Coils

| Coil addresses | Data type | Data content | Parameter Name | Read / Write permission |
|----------------|-----------|---|-------------------|-------------------------|
| (0000)h | Bit | Alarm2 Situation (0 = Active Low ,1 =Active High) | A2.5E. | Readable / Writable |
| (0001)h | Bit | In probe failure, Alarm2 output's position (0 = Low , 1 = High) | R 2.P.E. | Readable / Writable |
| (0002)h | Bit | Alarm1 Situation (0 = Active Low ,1 =Active High) | A 1.5Ł. | Readable / Writable |
| (0003)h | Bit | In probe failure,Alarm1 output's position (0 = Low , 1 = High) | A I.P.E. | Readable / Writable |
| (0004)h | Bit | The control output's configuration (0 = Heat; 1 = Cool) | E.SEA. | Readable / Writable |
| (0005)h | Bit | Temperature unit (0 = °C ; 1 = °F) | Un ıŁ. | Readable / Writable |
| (0007)h | Bit | Consistently control (If £.con= 0 is not consistently temperature) control,If £.con=1 has a consistently temperature control.) | E.con. | Readable / Writable |

1.3 Memory map for Function Coils (Only, It can write with 05 (Write Single Coil) function.

| Coil addresses | Data Type | Data Content | Parameter Name | Read / Write permission |
|----------------|-----------|--|-------------------|-------------------------|
| 0256d (0100h) | Bit | Start / Hold Function (1 = Start / Hold , 0 = Invalid data) | | Only Writable |
| 0257d (0101h) | Bit | Stop Function (1 = Stop, 0 = Invalid data) | | Only Writable |

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1.4 Memory Map for Input Registers

| Input register address | Data Type | Data Content | Parameter Name | Read / Write permission |
|------------------------|-----------|---|-------------------|-------------------------|
| (0000)h | Word | Process value(°C or °F) | | Only Readable |
| (0001)h | Word | Analog output percent (%).Between the 0-100. | | Only Readable |
| (0002)h | Word | Profile timer value (Second or minute) | | Only Readable |
| (0003)h | Word | Segment number value (Can be taked values between 0-7.) | | Only Readable |

1.5 Memory Map for Discrete Input

| Discrete input addresses | Data Type | Data content | Parameter Name | Read / Write permission |
|--------------------------|-----------|---|-------------------|-------------------------|
| (0000)h(0002)h | Bit | This addresses are not available | | Only Readable |
| (0003)h | Bit | Control/Alarm2 output situation (0 = OFF ,1 = ON) | | Only Readable |
| (0004)h | Bit | arm1 output situation (0 = OFF , 1 = ON) | | Only Readable |
| (0006)h(000B)h | Bit | This addresses are not available | | Only Readable |
| 0012d (000Ch) | Bit | SSR output situation (0 = OFF ,1 = ON) | | Only Readable |
| (000D)h(000F)h | Bit | This addresses are not available | | Only Readable |
| 0016d (0010h) | Bit | Run situation (0 = Run off ,1 = Run on) | | Only Readable |
| 0017d (0011h) | Bit | Hold situation (0 = Hold off ,1 = Hold on) | | Only Readable |

2. MODBUS ERROR MESSAGE

Modbus protocol has two types error, communication error and operating error. Reason of the communication error is data corruption in transmission. Parity and CRC control should be done to prevent communication error. Receiver side checks parity and CRC of the data. If they are wrong, the message will be ignored. If format of the data is true but function doesn't perform for any reason, operating error occurs. Slave realizes error and sends error message. Most significant bit of function is changed '1' to indicate error in error message by slave. Error code is sent in data section. Master realizes error type via this message.

Modbus Error Codes

| Error Code | Name | Explanation |
|------------|--------------------|---|
| {01} | Wrong function | When the function code which is not suppoted by slave is sent, this error code is sent. |
| {02} | Wrong data address | When the data which is required becomes outside of address map of slave, this error code is sent. |
| {03} | Wrong data value | When the data which is sent is outside the boundary of modbus protocol, this error code is sent. |

Message example Structure of command message (Byte Format)

| Device Addres | (0A)h | |
|---------------------|-------|-------|
| Function Code | | (01)h |
| Beginning address | MSB | (04)h |
| of coils. | LSB | (A1)h |
| Number of coils (N) | MSB | (00)h |
| | LSB | (01)h |
| 000 0474 | LSB | (AC)h |
| CRC DATA | MSB | (63)h |

Structure of response message (Byte Format)

| Device Addres | (0A)h |
|---------------|-------|
| Function Code | (81)h |
| Error Code | (02)h |
| CDC DATA | (B0)h |
| CRC DATA | (53)h |

As you see in command message, coil information of (4A1)h = 1185 is required but there isn't any coil with 1185 address. Therefore error code with number (02) (wrong data address) sends.

> 3/3 **EPCXXXX-MODBUS-E-01**