



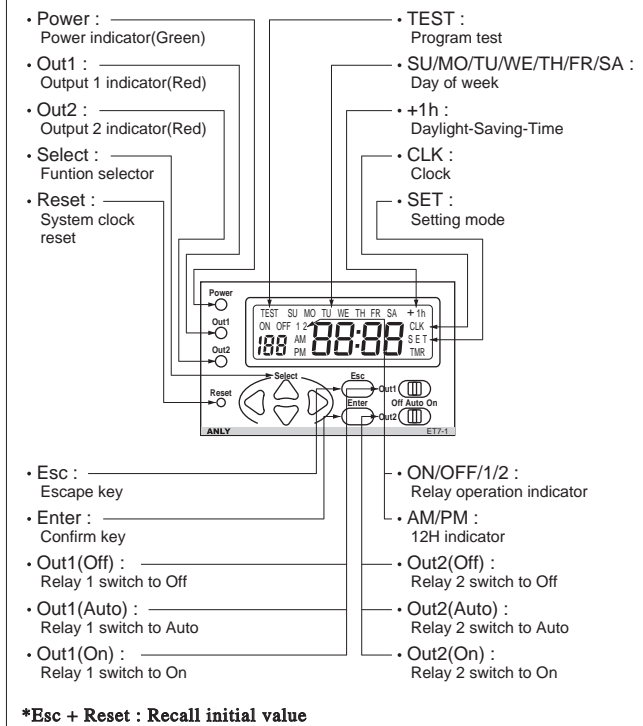
# ET7-1 TWIN OUTPUT WEEKLY PROGRAMMABLE TIMER User's Manual

## RESTRICTIONS ON USE

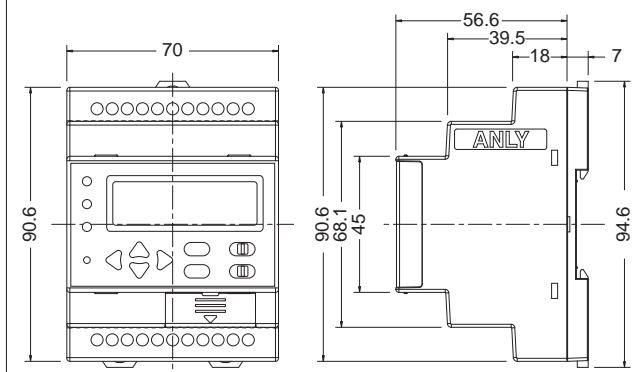
When using this product in applications that require particular safety or when using this product in important facilities, please pay attention to the safety of the overall system and equipment. Install fail-safe mechanisms, perform redundancy checks and periodic inspections and adopt other appropriate safety measures when it is necessary. This product is rated at Class II.

SPECIFICATIONS	
Operating voltage	AC/DC : 12 ~ 48V / AC/DC : 100 ~ 240V
Allowable operating voltage range	85 ~ 110% of rated operating voltage
Rated frequency	50 / 60 Hz
Contact rating	240VAC 7A(N.O.), 240VAC 5A(N.C.) Resistive load
Status Indicator	POWER - Green, Out1/Out2 - Green
Power consumption	Approx. 5.6VA (at 220VAC)
Life	Mechanical : 5,000,000 times / Electrical : 100,000 times
Ambient temperature	-10 ~ +50 °C
Ambient humidity	MAX 65% RH
Altitude	MAX 2000m
Weight	Approx. 200g

## BUTTON, SWITCH and LCD FUNCTIONS



## DIMENSION(mm)



## SAFETY PRECAUTION

- WARNING** Warnings are indicated when mishandling this controller might result in death or serious injury to user.
- CAUTION** Cautions are indicated when mishandling this controller might result in minor injury to the user, or only physical damage to the timer.

## WARNING

- Note this incorrect wiring of this controller can damage it and lead to other hazards. Make sure the controller has been correctly wired before turning the power ON.
- Before wiring, or removing / mounting the controller, be sure to turn the power OFF. Failure to do so might cause electric shock.
- Do not touch electrically charged parts such as the power terminals. Doing so might cause electric shock.
- Do not disassemble the controller. Doing so might cause electric shock or faulty operation.

## CAUTION

- Use the controller within the operating ranges recommended in the specification (temperature, humidity, voltage, shock, mounting direction, atmosphere and etc.). Failure to do so might cause fire or faulty operation.
- Firmly tighten the terminal screws. Insufficient tightening of terminal screws might cause electric shock or fire.
- Press reset before use after turning the battery on or replace the battery.

## OPERATING FLOWCHART

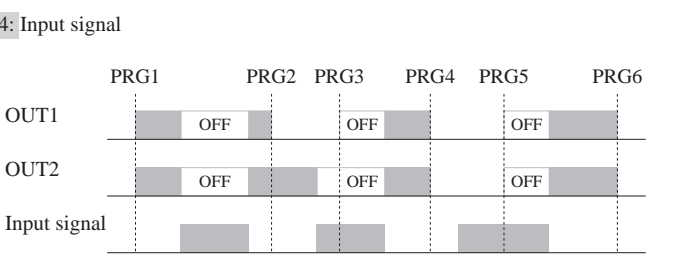
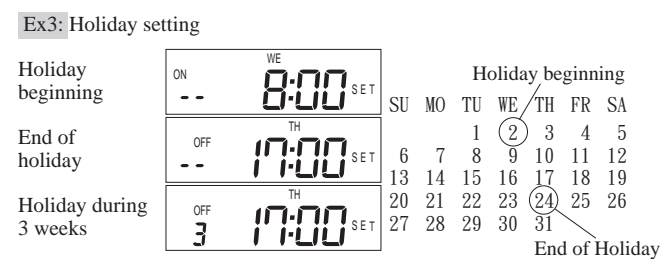
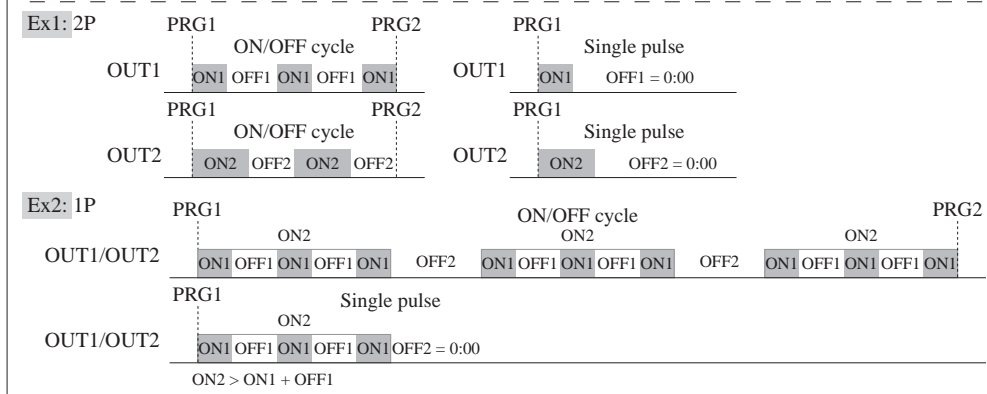
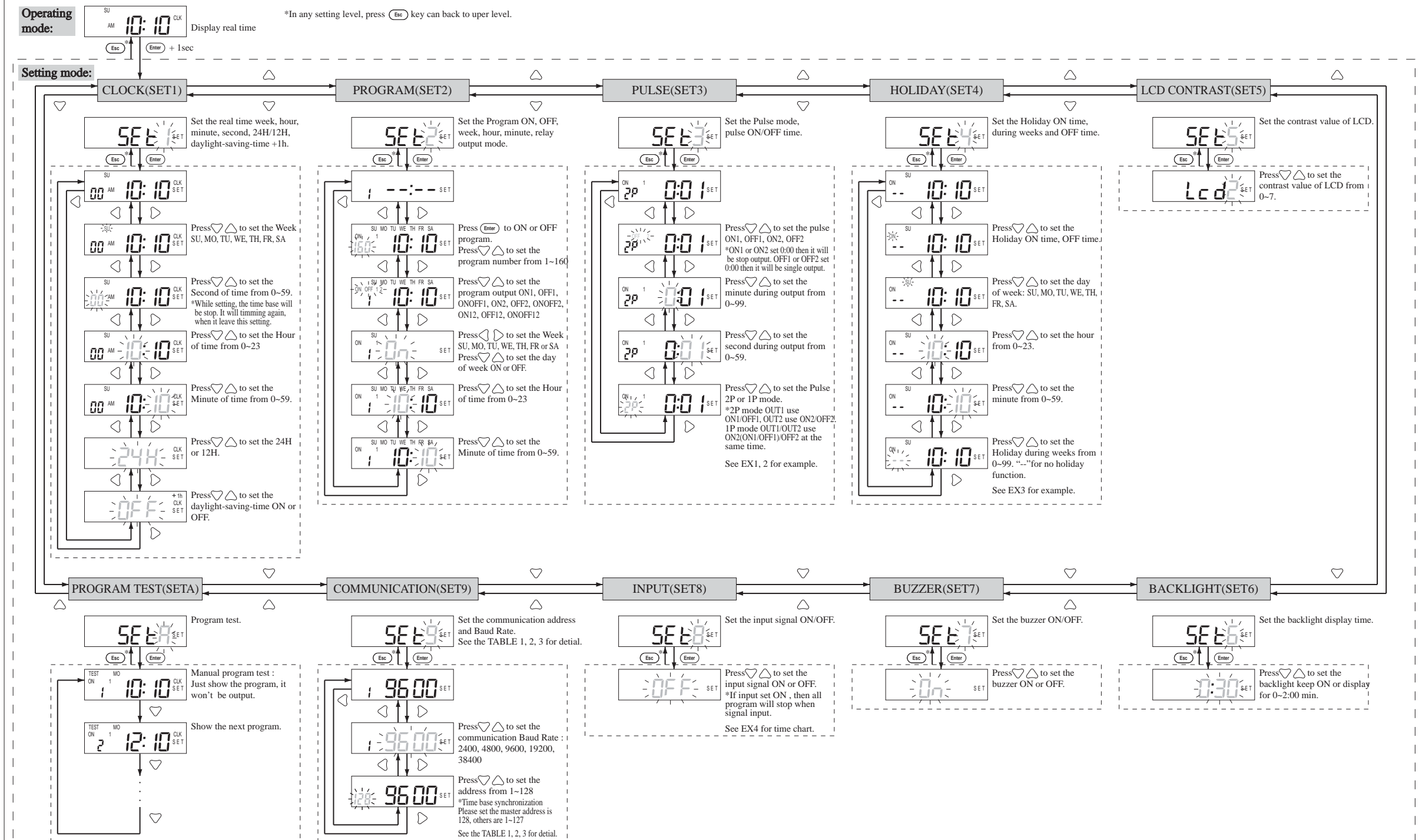
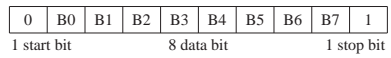


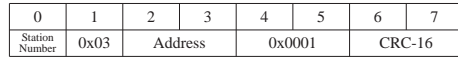
TABLE 1 COMMUNICATION INTERFACE AND DATA FORMAT

**\*Please back to Operating mode, before connect to PC**

Interface : RS485  
 Baud Rate : 2400, 4800, 9600, 19200, 38400  
 Data Format : ModBus protocol RTU mode (Table 2)  
 Data Frame:



RTU Request : Read command



RTU Response : Read command



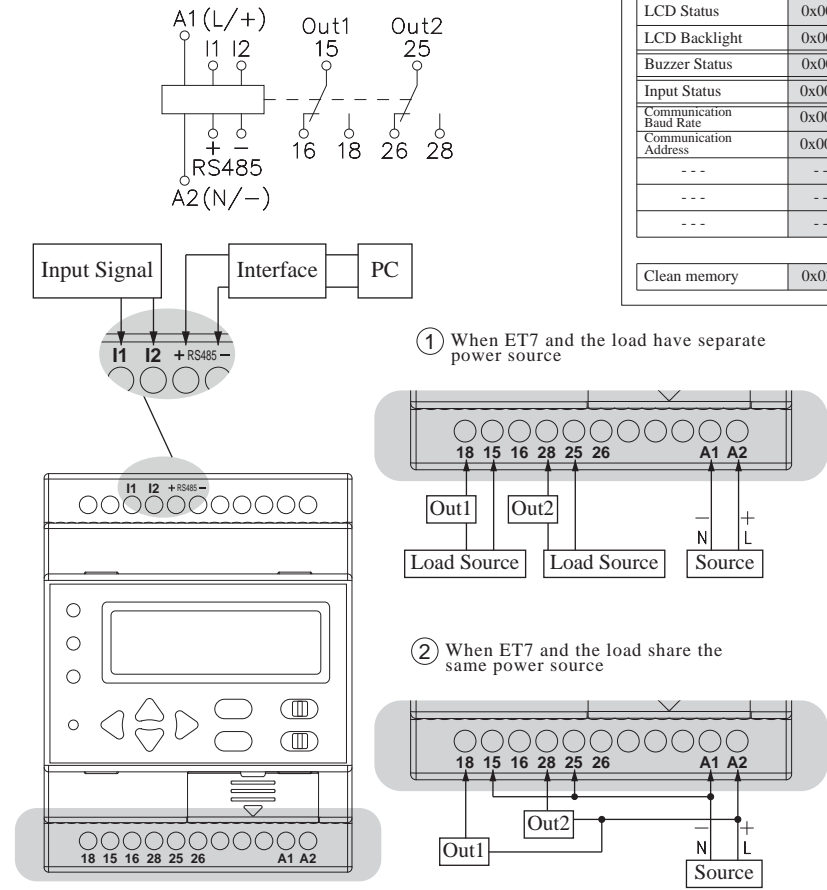
RTU Request : Write command



RTU Response : Write command



CONNECTION



① When ET7 and the load have separate power source

② When ET7 and the load share the same power source

BATTERY CHANGE

- ① Press and pull the battery cover.
- ② Press the hook of battery base by a flat head screwdriver. Then battery out of the battery base.
- ③ When battery out of the base by a screwdriver. Must to avoid the battery drop to other circuit, it might cause short circuit and cause fire.

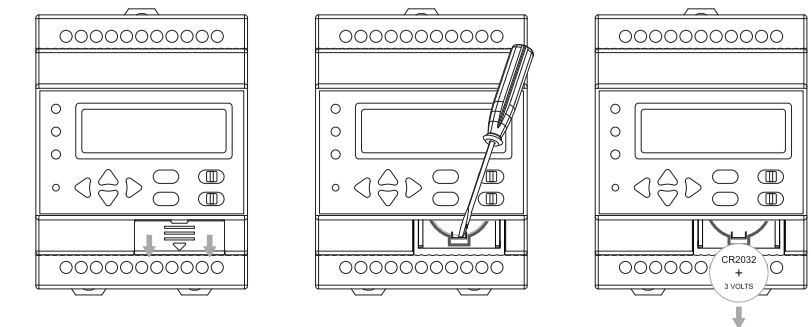


TABLE 2 PARAMETER ADDRES DEFINE

Time-Status	0x0000	PRG1-Status	0x0020	PRG21-Status	0x0070	PRG41-Status	0x00C0	PRG61-Status	0x0110	PRG81-Status	0x0160	PRG101-Status	0x01B0	PRG121-Status	0x0200	PRG141-Status	0x0250
Time-Week	0x0001	PRG1-Week	0x0021	PRG21-Week	0x0071	PRG41-Week	0x00C1	PRG61-Week	0x0111	PRG81-Week	0x0161	PRG101-Week	0x01B1	PRG121-Week	0x0201	PRG141-Week	0x0251
Time-Hour	0x0002	PRG1-Hour	0x0022	PRG21-Hour	0x0072	PRG41-Hour	0x00C2	PRG61-Hour	0x0112	PRG81-Hour	0x0162	PRG101-Hour	0x01B2	PRG121-Hour	0x0202	PRG141-Hour	0x0252
Time-Minute	0x0003	PRG1-Minute	0x0023	PRG21-Minute	0x0073	PRG41-Minute	0x00C3	PRG61-Minute	0x0113	PRG81-Minute	0x0163	PRG101-Minute	0x01B3	PRG121-Minute	0x0203	PRG141-Minute	0x0253
Time-Second	0x0004	PRG2-Status	0x0024	PRG22-Status	0x0074	PRG42-Status	0x00C4	PRG62-Status	0x0114	PRG82-Status	0x0164	PRG102-Status	0x01B4	PRG122-Status	0x0204	PRG142-Status	0x0254
Holiday-Status	0x0005	PRG2-Week	0x0025	PRG22-Week	0x0075	PRG42-Week	0x00C5	PRG62-Week	0x0115	PRG82-Week	0x0165	PRG102-Week	0x01B5	PRG122-Week	0x0205	PRG142-Week	0x0255
Holiday-Weeks	0x0006	PRG2-Hour	0x0026	PRG22-Hour	0x0076	PRG42-Hour	0x00C6	PRG62-Hour	0x0116	PRG82-Hour	0x0166	PRG102-Hour	0x01B6	PRG122-Hour	0x0206	PRG142-Hour	0x0256
Holiday ON-Week	0x0007	PRG2-Minute	0x0027	PRG22-Minute	0x0077	PRG42-Minute	0x00C7	PRG62-Minute	0x0117	PRG82-Minute	0x0167	PRG102-Minute	0x01B7	PRG122-Minute	0x0207	PRG142-Minute	0x0257
Holiday ON-Hour	0x0008	PRG3-Status	0x0028	PRG23-Status	0x0078	PRG43-Status	0x00C8	PRG63-Status	0x0118	PRG83-Status	0x0168	PRG103-Status	0x01B8	PRG123-Status	0x0208	PRG143-Status	0x0258
Holiday ON-Minute	0x0009	PRG3-Week	0x0029	PRG23-Week	0x0079	PRG43-Week	0x00C9	PRG63-Week	0x0119	PRG83-Week	0x0169	PRG103-Week	0x01B9	PRG123-Week	0x0209	PRG143-Week	0x0259
Holiday OFF-Week	0x000A	PRG3-Hour	0x002A	PRG23-Hour	0x007A	PRG43-Hour	0x00CA	PRG63-Hour	0x011A	PRG83-Hour	0x016A	PRG103-Hour	0x01BA	PRG123-Hour	0x020A	PRG143-Hour	0x025A
Holiday OFF-Hour	0x000B	PRG3-Minute	0x002B	PRG23-Minute	0x007B	PRG43-Minute	0x00CB	PRG63-Minute	0x011B	PRG83-Minute	0x016B	PRG103-Minute	0x01BB	PRG123-Minute	0x020B	PRG143-Minute	0x025B
Holiday OFF-Minute	0x000C	PRG4-Status	0x002C	PRG24-Status	0x007C	PRG44-Status	0x00CC	PRG64-Status	0x011C	PRG84-Status	0x016C	PRG104-Status	0x01BC	PRG124-Status	0x020C	PRG144-Status	0x025C
Pulse-Status	0x000D	PRG4-Week	0x002D	PRG24-Week	0x007D	PRG44-Week	0x00CD	PRG64-Week	0x011D	PRG84-Week	0x016D	PRG104-Week	0x01BD	PRG124-Week	0x020D	PRG144-Week	0x025D
Pulse ON1-Minute	0x000E	PRG4-Hour	0x002E	PRG24-Hour	0x007E	PRG44-Hour	0x00CE	PRG64-Hour	0x011E	PRG84-Hour	0x016E	PRG104-Hour	0x01BE	PRG124-Hour	0x020E	PRG144-Hour	0x025E
Pulse ON1-Second	0x000F	PRG4-Minute	0x002F	PRG24-Minute	0x007F	PRG44-Minute	0x00CF	PRG64-Minute	0x011F	PRG84-Minute	0x016F	PRG104-Minute	0x01BF	PRG124-Minute	0x020F	PRG144-Minute	0x025F
Pulse OFF1-Minute	0x0010	PRG5-Status	0x0030	PRG25-Status	0x0080	PRG45-Status	0x00D0	PRG65-Status	0x0120	PRG85-Status	0x0170	PRG105-Status	0x01C0	PRG125-Status	0x0210	PRG145-Status	0x0260
Pulse OFF1-Second	0x0011	PRG5-Week	0x0031	PRG25-Week	0x0081	PRG45-Week	0x00D1	PRG65-Week	0x0121	PRG85-Week	0x0171	PRG105-Week	0x01C1	PRG125-Week	0x0211	PRG145-Week	0x0261
Pulse ON2-Minute	0x0012	PRG5-Hour	0x0032	PRG25-Hour	0x0082	PRG45-Hour	0x00D2	PRG65-Hour	0x0122	PRG85-Hour	0x0172	PRG105-Hour	0x01C2	PRG125-Hour	0x0212	PRG145-Hour	0x0262
Pulse ON2-Second	0x0013	PRG5-Minute	0x0033	PRG25-Minute	0x0083	PRG45-Minute	0x00D3	PRG65-Minute	0x0123	PRG85-Minute	0x0173	PRG105-Minute	0x01C3	PRG125-Minute	0x0213	PRG145-Minute	0x0263
Pulse OFF2-Minute	0x0014	PRG6-Status	0x0034	PRG26-Status	0x0084	PRG46-Status	0x00D4	PRG66-Status	0x0124	PRG86-Status	0x0174	PRG106-Status	0x01C4	PRG126-Status	0x0214	PRG146-Status	0x0264
Pulse OFF2-Second	0x0015	PRG6-Week	0x0035	PRG26-Week	0x0085	PRG46-Week	0x00D5	PRG66-Week	0x0125	PRG86-Week	0x0175	PRG106-Week	0x01C5	PRG126-Week	0x0215	PRG146-Week	0x0265
LCD Contrast	0x0016	PRG6-Hour	0x0036	PRG26-Hour	0x0086	PRG46-Hour	0x00D6	PRG66-Hour	0x0126	PRG86-Hour	0x0176	PRG106-Hour	0x01C6	PRG126-Hour	0x0216	PRG146-Hour	0x0266
LCD Status	0x0017	PRG6-Minute	0x0037	PRG26-Minute	0x0087	PRG46-Minute	0x00D7	PRG66-Minute	0x0127	PRG86-Minute	0x0177	PRG106-Minute	0x01C7	PRG126-Minute	0x0217	PRG146-Minute	0x0267
LCD Backlight	0x0018	PRG7-Status	0x0038	PRG27-Status	0x0088	PRG47-Status	0x00D8	PRG67-Status	0x0128	PRG87-Status	0x0178	PRG107-Status	0x01C8	PRG127-Status	0x0218	PRG147-Status	0x0268
Buzzer Status	0x0019	PRG7-Week	0x0039	PRG27-Week	0x0089	PRG47-Week	0x00D9	PRG67-Week	0x0129	PRG87-Week	0x0179	PRG107-Week	0x01C9	PRG127-Week	0x0219	PRG147-Week	0x0269
Input Status	0x001A	PRG7-Hour	0x003A	PRG27-Hour	0x008A	PRG47-Hour	0x00DA	PRG67-Hour	0x012A	PRG87-Hour	0x017A	PRG107-Hour	0x01CA	PRG127-Hour	0x021A	PRG147-Hour	0x026A
Communication Band Rate	0x001B	PRG7-Minute	0x003B	PRG27-Minute	0x008B	PRG47-Minute	0x00DB	PRG67-Minute	0x012B	PRG87-Minute	0x017B	PRG107-Minute	0x01CB	PRG127-Minute	0x021B	PRG147-Minute	0x026B
Communication Address	0x001C	PRG8-Status	0x003C	PRG28-Status	0x008C	PRG48-Status	0x00DC	PRG68-Status	0x012C	PRG88-Status	0x017C	PRG108-Status	0x01CC	PRG128-Status	0x021C	PRG148-Status	0x026C
---	---	PRG8-Week	0x003D	PRG28-Week	0x008D	PRG48-Week	0x00DD	PRG68-Week	0x012D	PRG88-Week	0x017D	PRG108-Week	0x01CD	PRG128-Week	0x021D	PRG148-Week	0x026D
---	---	PRG8-Hour	0x003E	PRG28-Hour	0x008E	PRG48-Hour	0x00DE	PRG68-Hour	0x012E	PRG88-Hour	0x017E	PRG108-Hour	0x01CE	PRG128-Hour	0x021E	PRG148-Hour	0x026E
---	---	PRG8-Minute	0x003F	PRG28-Minute	0x008F	PRG48-Minute	0x00DF	PRG68-Minute	0x012F	PRG88-Minute	0x017F	PRG108-Minute	0x01CF	PRG128-Minute	0x021F	PRG148-Minute	0x026F
Clean memory	0x0300	PRG9-Status	0x0040	PRG29-Status	0x0090	PRG49-Status	0x00E0	PRG69-Status	0x0130	PRG89-Status	0x0180	PRG109-Status	0x01D0	PRG129-Status	0x0220	PRG149-Status	0x0270
		PRG9-Week	0x0041	PRG29-Week	0x0091	PRG49-Week	0x00E1	PRG69-Week	0x0131	PRG89-Week	0x0181	PRG109-Week	0x01D1	PRG129-Week	0x0221	PRG149-Week	0x0271
		PRG9-Hour	0x0042	PRG29-Hour	0x0092	PRG49-Hour	0x00E2	PRG69-Hour	0x0132	PRG89-Hour	0x0182	PRG109-Hour	0x01D2	PRG129-Hour	0x0222	PRG149-Hour	0x0272
		PRG9-Minute	0x0043	PRG29-Minute	0x0093	PRG49-Minute	0x00E3	PRG69-Minute	0x0133	PRG89-Minute	0x0183	PRG109-Minute	0x01D3	PRG129-Minute	0x0223	PRG149-Minute	0x0273
		PRG10-Status	0x0044	PRG30-Status	0x0094	PRG50-Status	0x00E4	PRG70-Status	0x0134	PRG90-Status	0x0184	PRG110-Status	0x01D4	PRG130-Status	0x0224	PRG150-Status	0x0274
		PRG10-Week	0x0045	PRG30-Week	0x0095	PRG50-Week	0x00E5	PRG70-Week	0x0135	PRG90-Week	0x0185	PRG110-Week	0x01D5	PRG130-Week	0x0225	PRG150-Week	0x0275
		PRG10-Hour	0x0046	PRG30-Hour	0x0096	PRG50-Hour	0x00E6	PRG70-Hour	0x0136	PRG90-Hour	0x0186	PRG110-Hour	0x01D6	PRG130-Hour	0x0226	PRG150-Hour	0x0276
		PRG10-Minute	0x0047	PRG30-Minute	0x0097	PRG50-Minute	0x00E7	PRG70-Minute	0x0137	PRG90-Minute	0x0187	PRG110-Minute	0x01D7	PRG130-Minute	0x0227	PRG150-Minute	0x0277
		PRG11-Status	0x0048	PRG31-Status	0x0098	PRG51-Status	0x00E8	PRG71-Status	0x0138	PRG91-Status	0x0188	PRG111-Status	0x01D8	PRG131-Status	0x0228	PRG151-Status	0x0278
		PRG11-Week	0x0049	PRG31-Week	0x0099	PRG51-Week	0x00E9	PRG71-Week	0x0139	PRG91-Week	0x0189	PRG111-Week	0x01D9	PRG131-Week	0x0229	PRG151-Week	0x0279
		PRG11-Hour	0x004A	PRG31-Hour	0x009A	PRG51-Hour	0x00EA	PRG71-Hour	0x013A	PRG91-Hour	0x018A	PRG111-Hour	0x01DA	PRG131-Hour	0x022A	PRG151-Hour	0x027A
		PRG11-Minute	0x004B	PRG31-Minute	0x009B	PRG51-Minute	0x00EB	PRG71-Minute	0x013B	PRG91-Minute	0x018B	PRG111-Minute	0x01DB	PRG131-Minute	0x022B	PRG151-Minute	0x027B
		PRG12-Status	0x004C	PRG32-Status	0x009C	PRG52-Status	0x00EC	PRG72-Status	0x013C	PRG92-Status	0x018C	PRG112-Status	0x01DC	PRG132-Status	0x022C	PRG152-Status	0x027C
		PRG12-Week	0x004D	PRG32-Week	0x009D	PRG52-Week	0x00ED	PRG72-Week	0x013D	PRG92-Week	0x018D	PRG112-Week	0x01DD	PRG132-Week	0x022D	PRG152-Week	0x027D
		PRG12-Hour	0x004E	PRG32-Hour	0x009E	PRG52-Hour	0x00EE	PRG72-Hour	0x013E	PRG92-Hour	0x018E	PRG112-Hour	0x01DE	PRG132-Hour	0x022E	PRG152-Hour	0x027E
		PRG12-Minute	0x004F	PRG32-Minute	0x009F	PRG52-Minute	0x00EF	PRG72-Minute	0x013F	PRG92-Minute	0x018F	PRG112-Minute	0x01DF	PRG132-Minute	0x022F	PRG152-Minute	0x027F
		PRG13-Status	0x0050	PRG33-Status	0x00A0	PRG53-Status	0x00F0	PRG73-Status	0x0140	PRG93-Status	0x0190	PRG113-Status	0x01E0	PRG133-Status	0x0230	PRG153-Status	0x0280
		PRG13-Week	0x0051	PRG33-Week	0x00A1	PRG53-Week	0x00F1	PRG73-Week	0x0141	PRG93-Week	0x0191	PRG113-Week	0x01E1	PRG133-Week	0x0231	PRG153-Week	0x0281
		PRG13-Hour	0x0052	PRG33-Hour	0x00A2	PRG53-Hour	0x00F2	PRG73-Hour	0x0142	PRG93-Hour	0x0192	PRG113-Hour	0x01E2	PRG133-Hour	0x0232	PRG153-Hour	0x0282
		PRG13-Minute	0x0053	PRG33-Minute	0x00A3	PRG53-Minute	0x00F3	PRG73-Minute	0x0143	PRG93-Minute	0x0193	PRG113-Minute	0x01E3	PRG133-Minute	0x0233	PRG153-Minute	0x0283
		PRG14-Status	0x0054	PRG34-Status	0x00A4	PRG54-Status	0x00F4	PRG74-Status	0x0144	PRG94-Status	0x0194	PRG114-Status	0x01E4	PRG134-Status	0x0234	PRG154-Status	0x0284
		PRG14-Week	0x0055	PRG34-Week	0x00A5	PRG54-Week	0x00F5	PRG74-Week	0x0145	PRG94-Week	0x0195	PRG114-Week	0x01E5	PRG134-Week	0x0235	PRG154-Week	0x0285
		PRG14-Hour	0x0056	PRG34-Hour	0x00A6	PRG54-Hour	0x00F6	PRG74-Hour	0x0146	PRG94-Hour	0x0196	PRG114-Hour	0x01E6	PRG134-Hour	0x0236	PRG154-Hour	0x0286
		PRG14-Minute	0x0057	PRG34-Minute	0x00A7	PRG54-Minute	0x00F7	PRG74-Minute	0x0147	PRG94-Minute	0x0197	PRG114-Minute	0x01E7	PRG134-Minute	0x0237	PRG154-Minute	0x0287
		PRG15-Status															