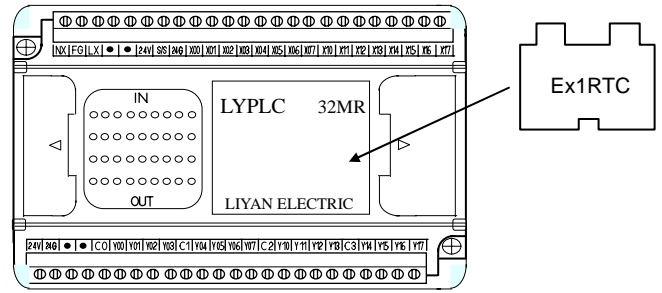# *EX1N,1S*

Ex1RTC USER'S GUIDE

☛This manual only describes the specification for Ex1RTC.

☛These manuals should be read and understood before attempting to install or use the unit.

✳✳✳ Specifications ✳✳✳

Ex1RTC1-1	Real Time Clock Extension Board
	Install to more than 24 points of Ex1s, Ex1n, Ex2n series main unit.
	Capacitor back up (7days / 2 x EXRTC-CAP-B, up to 4 sets)
	Second, minute, hour, date, month, year, week (with compensation for leap year)
Ex1RTC1-2	EEPROM memory board
	8000 steps replaced internal EEPROM This doesn't include "Real Time Clock" function.
Ex1RTC1-3	EEPROM memory (8K steps) and Real Time clock Extension Board
	Install to more than 24 points of Ex1s, Ex1n, Ex2n series main unit.
	Capacitor back up (7days / 2 x EXRTC-CAP-B, up to 4 sets)
	Second, minute, hour, date, month, year, week (with compensation for leap year)

♦ EXRTC-CAP-B is number of 0.33F/5.5V capacitor.

Ex1RTC1-4 / Ex1RTC1-5

SW-2	SW-1	Description
OFF	OFF	Execute internal EEprom program, not execute copy function.
ON	OFF	Execute external EEprom program, not execute copy function.
OFF	ON	Copy EEprom program of RTC and content of D register into EEprom of CPU.
ON	ON	Copy content of D register of EEprom which is inside CPU into EEprom of RTC.

♦ Can not turn switch during operation.

♦ To change another external EEprom when execute external EEprom: turn to internal EEprom, power ON and OFF, then change.

✳✳✳ Applicable Items ✳✳✳

Real Time Clock Extension Board is an option product.

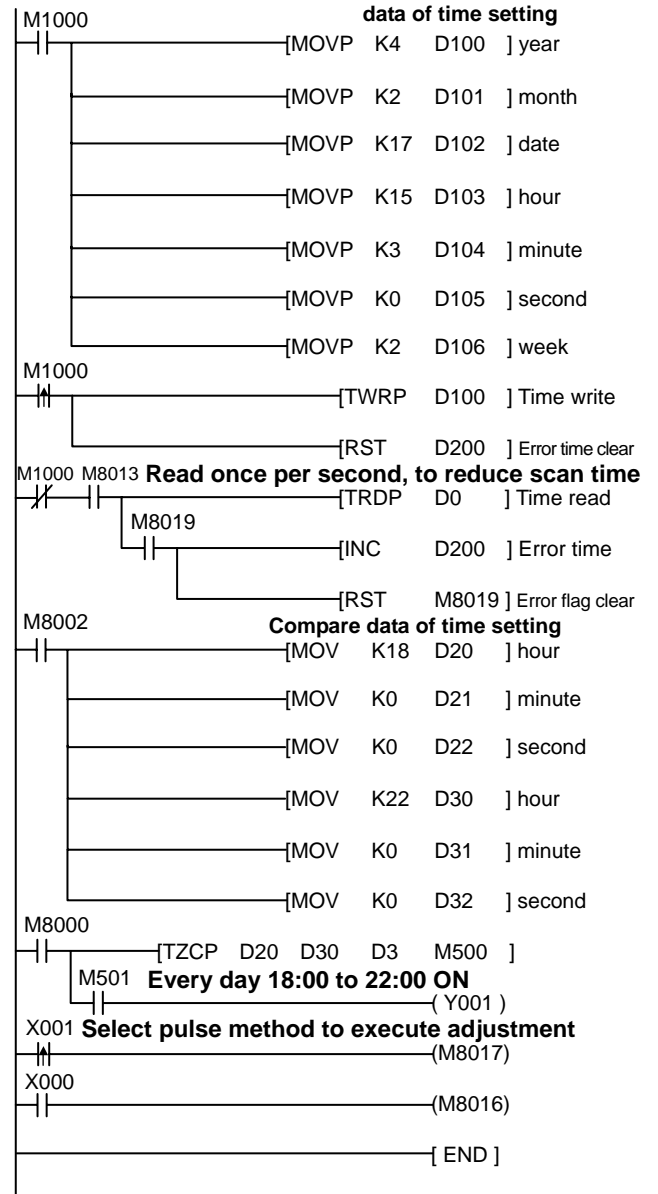The applicable item as follows,

Ex1s24MR, Ex1s24MT, Ex1s32MR, Ex1s32MT

Ex1n24MR, Ex1n24MT, Ex1n32MR, Ex1n32MT

Ex2n24MR, Ex2n24MT, Ex2n32MR, Ex2n32MT

♦"Real Time Clock" function of Ex1n16MR, Ex1n14MT is build in (option).
There are item no. "Ex1n16MR-1/Ex1n14MT-1" on the side-mark.

✳✳✳ Installation ✳✳✳

✳✳✳ Application Note ✳✳✳

M8016	M8017	Time adjusting
ON	⌐↑	-60 seconds
OFF	⌐↑	+60 seconds

♦TWR D100 (continuously occupy 7 bits D100 – D106)

First, copy D8013 ~ D8019 as follows, then write system RTC device

| Item	Device		Device	Item	
Year	D100	→	D8018	Year	System internal clock device
Month	D101	→	D8017	Month	
Date	D102	→	D8016	Date	
Hour	D103	→	D8015	Hour	
Minute	D104	→	D8014	Minute	
Second	D105	→	D8013	Second	
Week	D106	→	D8019	Week	

♦TRD D0 (continuously occupy 7 bits D0 – D6)

Read system RTC device time renewal D8013 – D8019, then copy to D0 - D6 as follows,

Item	Device		Device	Item	
Year	D0	←	D8018	Year	System internal clock device
Month	D1	←	D8017	Month	
Date	D2	←	D8016	Date	
Hour	D3	←	D8015	Hour	
Minute	D4	←	D8014	Minute	
Second	D5	←	D8013	Second	
Week	D6	←	D8019	Week	

♦TZCP   Execute Time Compare instruction

Execute assigned time of assigned 2 points and clock data to compare.
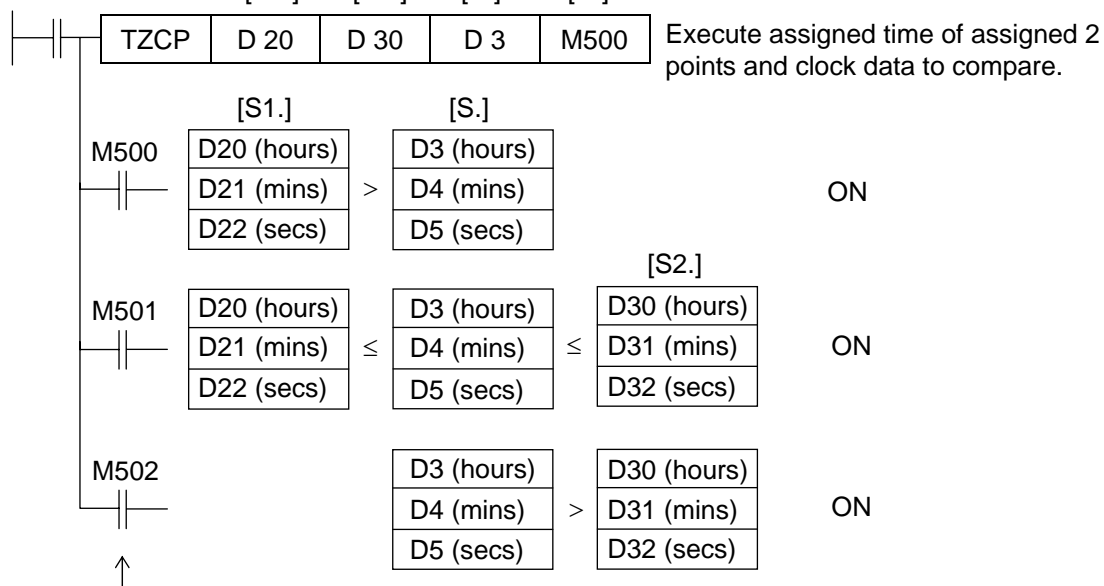
When X000 OFF, then not execute TZCP, M500~M502 status unchanged.