

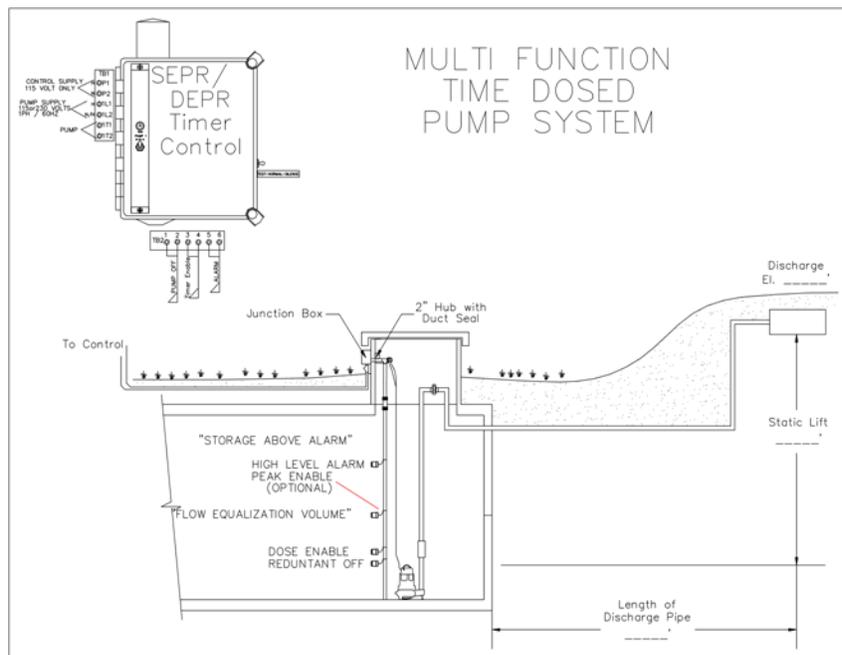


AMERICAN

Manufacturing Company, Inc.

SEPR & DEPR W/LOGO CONTROLLER MANUAL MULTI-FUNCTION TIMER CONTROL

Simplex/Duplex Equalization by Programmable Relay (EPR)



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"EPR" Series

Simplex/Duplex multifunction timer panel

Programming instructions for the Siemens LOGO!

PLEASE REVIEW ALL THE FOLLOWING INSTRUCTIONS BEFORE ATTEMPTING PROGRAMMING!

WARNING! DO NOT USE THE "PROGRAM", "NETWORK" OR "DIAGNOSTICS" SCREENS!

ALL SCREENS NECESSARY FOR SETTING UP THE PLC ARE FOUND BY

SIMPLY PRESSING THE UP ARROW  OR DOWN ARROW 

CAUTION! If the screen backlight turns ORANGE, you are in edit mode!
ONLY the clock should be changed through the "Display #1" screen below!

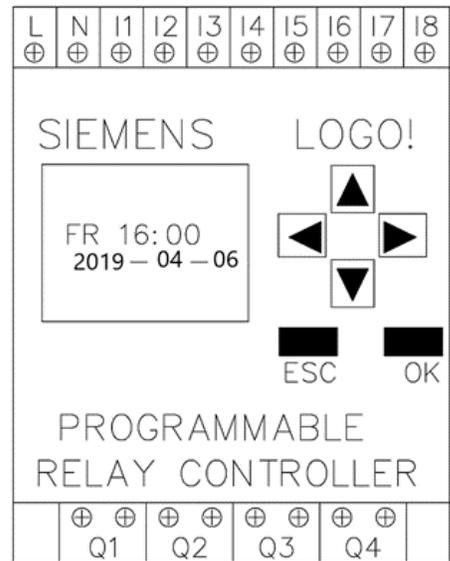


SIEMENS LOGO! 230RC MICROPROCESSOR

Turn the power on to the LOGO microprocessor (P1 circuit breaker - ON) with Pump switches in the "OFF" position. Press the up or down arrow buttons to view available screen information. The last screen, Time and Date, can be adjusted if necessary to current conditions (see below).

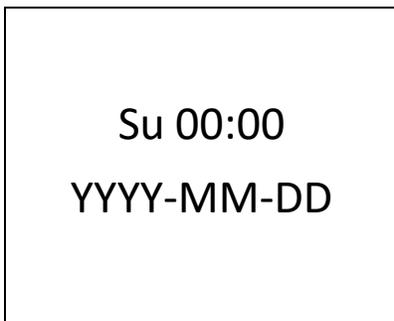
If the "OFF" and "ENABLE" floats are in the up position (see Float Screen) , the lead pump will activate when the "H-O-A" witch is placed in the "AUTO" position. Turn the pump switch to the "OFF" position to stop cycle. Press the Reset Cycle Start button to reset rest cycle timers. Press the down arrow button up and down to view other available screen information.

Display #1 appears whenever the escape key (ESC) is hit at the clock screen or if a program is stopped or if no program exists. The controller is factory preprogrammed for a repetitive cycle type system which starts with the off period. The preset functions are shown on the screens below.



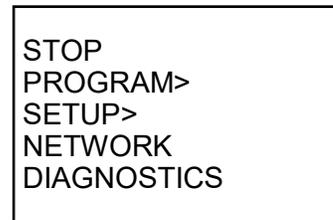
Setting the Clock

WARNING: Time and date must be set for proper operation. Arrow down to date/time screen, set clock by pressing ESC. Scroll down to SETUP and press OK. Arrow down to clock and press OK, arrow up to set clock press OK. Use UP down arrows to change values. Press right arrow to move to the next value and line. The day of week will auto set. Press OK when done, then press ESC until you get back to the date and time screen.



NOTE:

Press the down arrow to toggle to the last screen which is the clock screen.



Display #1

Reset/ Cycle Start Button

When the Reset/Cycle Start pushbutton has been depressed and held for 1+ second during a dose, the pump will stop. When the Reset/Cycle Start pushbutton has been depressed and held for 5 (+/-) seconds then released, the lead pump will start and the elapsed rest times will be set to zero. The lead pump may be either Pump 1 for simplex or Pump 1 or Pump 2 for duplex. If the optional "Peak Float" is installed and activated two things occur. The peak rest timer becomes active and the next dose will not begin until the Peak Rest Timer has expired regardless of float position. This operation can also act as an override when the peak rest time is at the minimum setting.

MONITORING WITH THE PUMP SWITCH "OFF"

The simplex control shows several screens with the pump switch off. These include Std rest time, Peak rest time, Peak & Alarm counts, Float status, high level delay, additional alarm enables, and time clock.

S t d					
R e s t	0 0	:	2 0	m	
C u r r			0	h	
R e s t			0	m	

Repeat Cycle Rest Timers (Standard & Peak)

The rest times are managed by a repeat cycle timer function which will allow the pump to run after a preset rest time has elapsed and there is water available (off and enable floats are active) or (off, enable and peak floats are active). The rest time is displayed in hours and minutes. When the control is activated, the target rest time is displayed and the current rest time starts running. The current rest timer will continue to run until the target is reached for the pump which is then activated by being in the automatic position and the off and enable floats are up. The current (or elapsed) rest time will reset to zero when the pump starts in automatic which then starts the next rest period.

P e a k					
R e s t	0 0	:	1 5	m	
C u r r			0	h	
R e s t			0	m	

Peak Count and High Count

Each time the Peak float is enabled a count is registered. The same for high level alarm counts. This information can be very useful to the operator in excess water flow conditions such as are created by leaky toilets and the like.

P e a k					
C o u n t			0		
H i g h					
C o u n t			0		

Float Operating Conditions

The controller is configured to operate in a simplex or duplex mode using up to four floats. The available float inputs are "Redundant Off", "Dose Enable", "Peak Enable" and "High Level Alarm". Standard features provided by the Logic relay include the manual and automatic operation of the pump, a "reset/cycle start" function, pump fail option with duplex configuration, alarm horn/light, internal elapsed time meters and counters for individual pumping events

The float positions in the tank are indicated by a "one" (1) on the screen of the LCD display meaning the float is in the up position, and "zero" (0) on the screen meaning the float is in the down position. The lowest float is the "Redundant Off" float. When this float is down the rest timer will elapse and no action will take place. Once the "Redundant Off" and "Dose Enable" float are activated (the second float) and the rest timer has elapsed, the "pump request" is signaled.

A l a r m			0		
P e a k			0		
E n a b l e			0		
O f f			0		

High Delay

The High Delay setting provided a time delay for alarm activation when the High level float is enabled.

High Delay	
Time	00:00m
Elapsed	00:00

Operator Options Peak Dose Alarm Enable

The control system is equipped with a "Peak Dose Enable" function to manage peak flows to dose the excess water at maximum design flow rates by reducing the rest time between dosing events. The Peak Dose function can be programmed to operate in one of three ways. The controller can be set to "Peak Alarm Off" (Pump Only) which allows only the pump to activate after the peak rest period has timed out. The "Peak Alarm On" (Pump & Alarm) will activate the pump and the audio/visual portion of the alarm after the peak rest period has elapsed. The suggested method is with the Level Alarm Auto Reset set to "Off", the alarm can be set to Auto Reset "On" which requires the peak float to be up for the High Level alarm to activate. The Peak float may be disconnected to take it out of service or set the timer equal to the standard rest time.

P	e	a	k	A	l	r	m	O	f	f	
P	u	m	p	F	a	i	l	O	f	f	
L	e	v	e	L	A	l	a	r	m		
A	u	t	O	R	e	s	e	t	O	f	f

MONITORING WITH THE PUMP SWITCH "ON"

Screens are enabled to be viewed when the pump switch is placed in the "AUTO" position. These include screens that provide pump operating data.

Pump(s) Availability

Pump availability is determined by an H-O-A switch. When the pump is in the "Auto" position, a pump run event will immediately take place. After the lead pump has timed out or after the "reset/ cycle start " has been "pressed and released", the users program settings will thereafter dictate cycle starts. A lead pump cycle may be started by depressing and holding the Reset/Cycle Start push button for 5(+/-) seconds. Whenever the pump is running the cycle is recorded on the pump counter (CNT) and the amount of time is cumulatively collected in hours and minutes on the Elapsed Time Meter. The pump may also be taken out of service by placing the "H-O-A" switch to the "Off" position. For controller functions to operate automatically, the respective H-O-A switch must be in the "Auto" position. Note: Pump 2 screens are only available when the Pump 2 "H-O-A" switch in the "AUTO" position .

P	u	m	p	1							
R	u	n									
T	a	r	g	e	t	0	0	:	1	0	m
E	l	a	p	s	e	0	0	:	0	0	m

Pump Counters and ETM's & Run Times

The internal run time is implemented whenever a pump is called for automatically. The run time is displayed in minutes:seconds. In duplex operation each pump has its own configurable run time. Each pump has its own counter that indicates each time the pump is called for in either hand or automatic mode. Each pump has its own ETM (Elapsed Time Meter) that cumulatively counts the amount of time in hours:minutes a pump is called for.

P	u	m	p	1						
C	o	u	n	t					0	
P	u	m	p	1					0	h
E	T	M							0	m

EDITING OPERATIONAL SETUP

The following describes the steps necessary to edit operational setup.

Setting Pump Run Time

NOTE: DESIRED PUMP MUST BE IN AUTO TO SET RUN TIME -**Scroll up or down** with the pointer button until you reach the Pump Run display. **Press** and **Hold** the "ESC" key until the Pump Run Target is highlighted. **Press** the "OK" button and the target time will start flashing. **Press** the pointer button to select the location of minutes/seconds (mm:ss) for the pump run target time to be set. **Press** the pointer button to change the number from 0-9. Continue this process until the desired time is entered. Continuing to the far right pointer will allow the time range to be changed from minutes to seconds (ss:ss) of target run time. When entries are complete **Press** the "OK" button. **Press** the "ESC" key twice and the entry will be complete. Repeat for Pump 2 if available.

P	u	m	p		1						
R	u	n									
T	a	r	g	e	t	0	0	:	1	0	m
E	l	a	p	s	e	0	0	:	0	0	m

Setting Standard Rest Time

Scroll up or down with the pointer button until you reach the Standard (Std) Rest display. **Press** and **Hold** the "ESC" key until the 02:00 is highlighted. **Press** the "OK" button and the time location will start flashing. **Press** the pointer button to select the location of hours/minutes (hh:mm) for the pump rest time to be set. **Press** the pointer button to change the number from 0-9. Continue this process until the desired time is entered. Continuing to the far right pointer will allow the time range to be changed from hours to minutes (mm:ss) of rest time. When entries are complete **Press** the "OK" button. **Press** the "ESC" key twice and the entry will be complete.

S	t	d								
R	e	s	t		0	0	:	2	0	m
C	u	r	r					0	h	
R	e	s	t						0	m

Setting Peak Rest (Target) Time

The Peak Rest time can be adjusted in the Peak Rest screen in the same manner as described in the standard rest procedure.

Standard Pump Operation

The pump option is enabled by placing the Pump Hand-Off-Auto (H-O-A) switches to the "Auto" position. Once this input is detected by the microprocessor and the "OFF" and "ENABLE" floats are up, the control will automatically start and stop the pump and alternate between pumps using independent run times for duplex systems. The lead pump may be selected by placing the unused pump to the off position. This provides an alternator override which can be used to allow the system to operate as a simplex controller in the event of a failed pump or to keep the system operation on one field while a second field rests. Pump failure with lock out is a standard feature for duplex systems. Pump run times may be edited from the pump run time screen

Alarms

The top float is the Alarm float. This activates the audio/visual alarm. The audible portion can be silenced placing the Test/Normal/Silence switch to Silence. The separate latching circuit is unlatched and the visual alarm remains on until the alarm float has returned to a down position. The PLC **Auto Reset** function must be set to **On** which resets the PLC alarm input when the condition clears, if set to **Off** for PLC latching alarm it requires depressing the reset / cycle start button to reset the level alarm. If available and selected, there are additional alarm conditions that may activate an alarm light and horn. The **Peak Float** if connected (*only activates if Peak Alarm option is set*), and the **Pump Failure** (*only available on duplex systems, when option is set*). In both cases, the audible alarm may be silenced on the panel, but the light will continue until the alarm condition is corrected and the Reset Button has been pushed