

Smart Relay Mode Programming Brief

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CALL RATE PER SECOND:
Volume of chemical to be pumped per second of trigger on-time (0.0 to 8.5 oz/000-250 ml)
Default call rate=10 ml or 0.3 oz

Never use a washer trigger time of one second or less!

In smart relay mode, the Summit E and Summit XL pump chemical based on trigger signal on-time.¹ The dispenser has a setting called "call rate", which is the chemical amount it will pump for every second the washer trigger is on:

Chemical dose size=trigger seconds x call rate

Examples:

- For a 3-ounce dose, program a 10-second trigger from the washer when using the default call rate of 0.3 ounces.
- For a 100ml dose, program a 10-second trigger from the washer when using the default call rate of 10ml.²

Why use smart relay mode? Normal relay mode runs the pump for the exact trigger duration, requiring the installer to verify each pump's flow rate and use these different flow rates in all the washer signal length calculations.

With smart relay mode, the dispenser does the work of calculating exact pump runtimes. The installer can use the same call rate for each pump rather than a different flowrate per pump. This simplification makes washer programming faster and more error-free, saving time and reducing errors that compromise results.³

In the sample on the right, we fill in our target dose per pump per formula for a standard 100 lbs machine.

Then you just divide dose size/call rate (Excel will do this automatically)

Formula number	Chemical	Pump #	Dose Size for 100 lb machine	Call rate	Trigger on Seconds for 100 lb machine
1	Break	P1	5.2	0.3	
	Detergent	P2	3.4	0.3	
	Bleach	P3	9	0.3	
	Sour/Soft	P4	3	0.3	

Formula number	Chemical	Pump #	Dose Size for 100 lb machine	Call rate	Trigger on Seconds for 100 lb machine
1	Break	P1	5.2	0.3	17
	Detergent	P2	3.4	0.3	11
	Bleach	P3	9	0.3	30
	Sour/Soft	P4	3	0.3	10

Formula number	Chemical	Pump #	Dose Size for 100 lb machine	Call rate	Trigger on Seconds for 100 lb machine	Trigger on Seconds for 50 lb machine	Trigger on Seconds for 200 lb machine	Trigger on Seconds for 250 lb machine	Trigger on Seconds for 300 lb machine	Trigger on Seconds for 400 lb machine	Trigger on Seconds for 500 lb machine
1	Break	P1	5.2	0.3	17	9	34	43	51	68	85
	Detergent	P2	3.4	0.3	11	6	22	28	33	44	55
	Bleach	P3	9	0.3	30	15	60	75	90	120	150
	Sour/Soft	P4	3	0.3	10	5	20	25	30	40	50

By adding columns for other machine sizes (1/2 the standard washer size, twice the seconds for double the standard washer size etc, we get an easy-to-read programming guide for all the sales reps in the company.

Switching pumps out from competitor pump "K"
"K" pump 48 oz/minute = 0.8 oz per second
"K" pump Had 10 sec trigger for 8 oz dose

Set Summit E call rate to be = their flow rate
In this case Summit will use .8 call rate and then same trigger = same dose size when replacing pump "K"

If you're replacing a different dispenser and you're going to keep the chemicals and formulas the same, you can avoid reprogramming the washer:

1. Check the flowrate on each pump on the old dispenser
2. Divide flowrate by 60 to get flowrate per second
3. Set Summit E call rate to be the previous flowrate per second
4. Perform pump calibration normally
5. No washer programming is required, because the Summit will pump the same amount as the previous dispenser would for any given trigger on time.

For OEM installs to get straight relay mode:

- If 100 series pump, change to ml, change call rate to 2 ml/second of trigger on time. System will then run a bit over 20% longer than trigger time
- If 600 series pump, don't change anything, and system will run a bit longer than 10% over the trigger on time.

¹ ILS OPL and ILS Max also use smart relay mode, so most of this applies to them as well.

²For larger washers with bigger dose sizes, use a higher call rate that's a round number, such as 1.0. Using 1.0, or 1.0 oz per second of trigger on time, you'd then program a 10 second trigger for a 10 oz dose. The default setting is 0.3 so it's easy to get small dose sizes on small washers with the medium 600 series pump. We recommend using a call rate of 0.1 with the small 100 series pumps, and 2.0 with the big 2000 series pumps.

³ Pump flowrates vary with chemical temperature and tube wear. It isn't practical for most installers to change the whole washer program to correct for flowrate variations from tube wear and chemical temperature, so results vary with normal relay mode. With smart relay mode, service personnel can simply recalibrate each pump, and the dispenser will adjust all runtimes on all formulas to correct for the flow rate changes due to tube wear and/or seasonal temperature changes. Note that in ILS OPL and ILS Max, the dispenser does this automatically, while competitors' dispensers in normal relay mode do not.