GOSSEN METRAWATT

SSP-KONSTANTER 62N / 64N

Ramp Generator Sequence Interpolation Function

3-349-295-03
4/8.11

As of version "...,03.004" (identified in the *IDN? string or the "Mains On" display), an additional interpolation function is included for the sequence memory:

The ramp function is implemented by means of linear interpolation between consecutive sequence control-points.

The command set for manual and computer operation has been expanded and supplemented.
--> "FSET NF/RU/RI", "STORE ...", "STORE? ...", ...

The text parameter for sequence memory locations has been expanded to include the values NF, RU and RI.
NF means no function and leaves the existing sequence unchanged.
Beginning with the selected value, sequence values flagged with RU or RI are approached via a linear ramp within a time period of TSET (or TDEF).
A fixed time grid (T0) with 5 ms is utilized, and the associated voltage/current value is calculated.

Command Expansions and Supplements

STORE command		Expansion of the txt parameters	
STORE *n, w1, w2, w3(, txt)* (write to memory			STORE? *n1(,n2(,TAB))* (read out memory)
Text parameter	*txt:*		Possible txt parameter response
	No text parameter	Parameter need not be specified	Unchanged or NF
	CLR	Clear memory content	CLR
		Empty or deleted memory location	CLR
	NF	NO FUNCTION (default)	**NF**
	RU	RAMP U, (voltage)	RU
	RI	RAMP I, (current)	RI
	NC	(compatibility with version 3.001) One existing txt par. remains	(unchanged) or NF

FSET command (function **set**) Command expansion
(in this way, the function can be set manually or via PC, so that the parameter is set with the ***SAVE** n command when momentary values are saved to sequence memory.)

FSET *txt*	FUNCTION SET	FSET?
FSET N	NO FUNCTION (default)	FSET NF
FSET RU	RAMP U, (voltage)	FSET RU
FSET RI	RAMP I, (current)	FSET RI

SSP-KONSTANTER 62N / 64N

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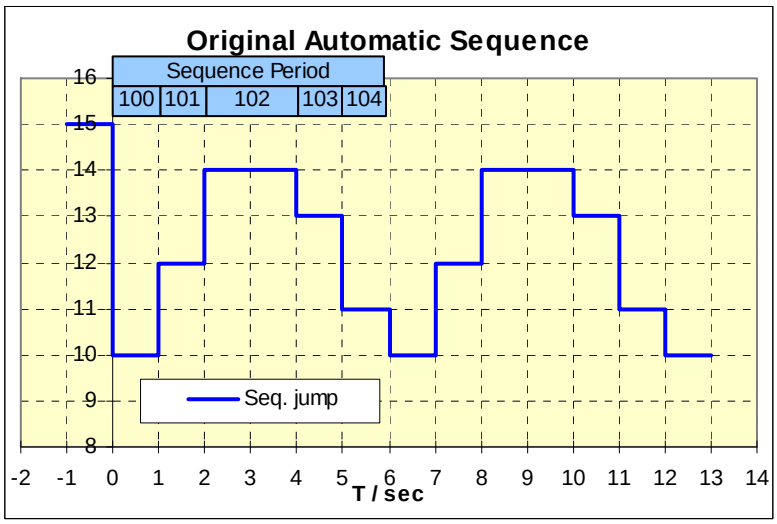
Execution:

Execution is demonstrated based upon a sample sequence occupying memory locations 100 through 104.
In this example, output voltage Uo is set to 15 V before the sequence is started.

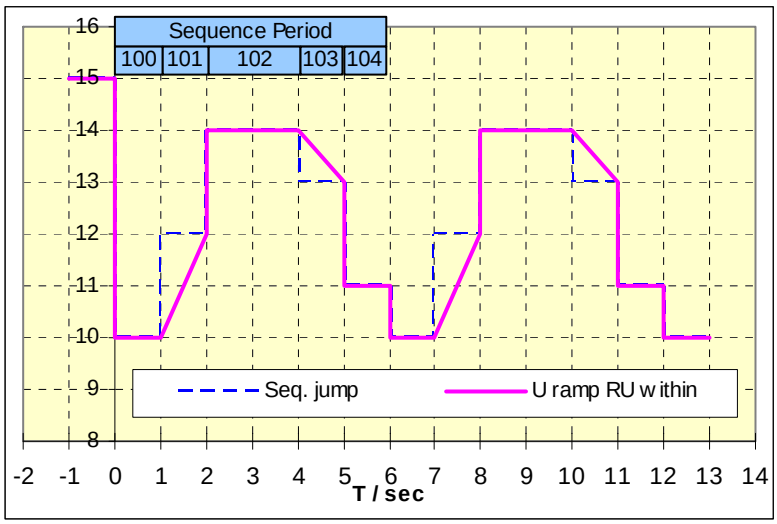
1 Sequence with step-response (original)

Adr	Uset V	Iset A	Tset sec	txt
100	10	1	1	nc
101	12	1	1	nc
102	14	1	2	nc
103	13	1	1	nc
104	11	1	1	nc



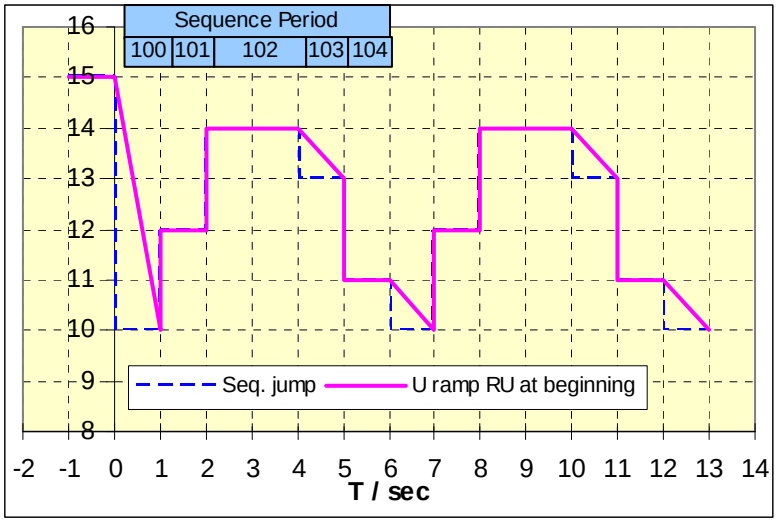
2 Sequence with voltage ramp within the sequence

Adr	Uset V	Iset A	Tset sec	txt	
100	10	1	1	NF	
101	**12**	**1**	**1**	**RU**	ramp
102	14	1	2	NF	
103	**13**	**1**	**1**	**RU**	ramp
104	11	1	1	NF	



3 Voltage ramp at the beginning of, and within the sequence

Adr	Uset V	Iset A	Tset sec	TXT Fnk	
100	**10**	**1**	**1**	**RU**	**ramp**
101	12	1	1	NF	
102	14	1	2	NF	
103	**13**	**1**	**1**	**RU**	ramp
104	11	1	1	NF	

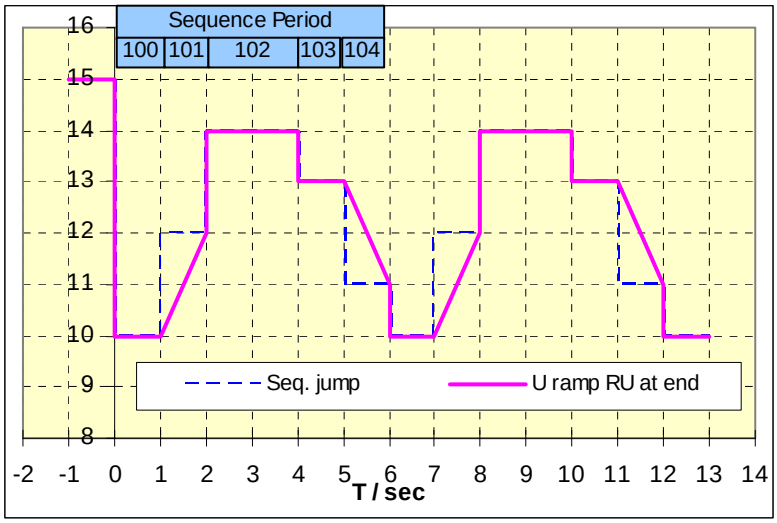


SSP-KONSTANTER 62N / 64N

Ramp Generator Sequence Interpolation Function

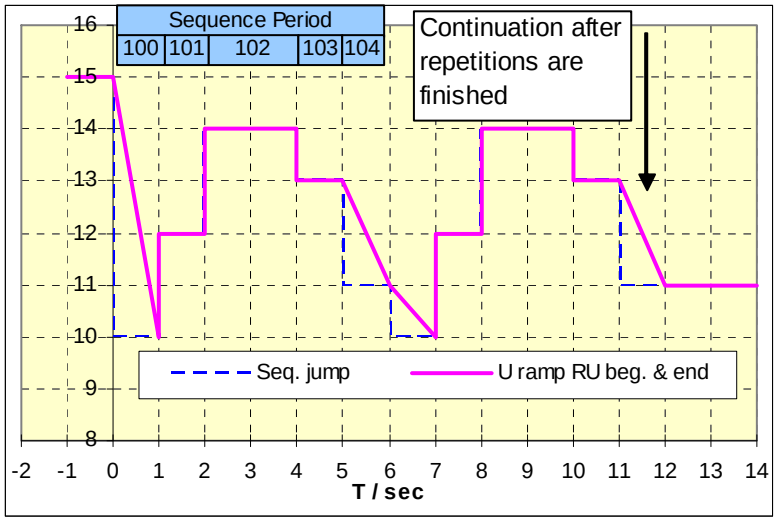
4 Voltage ramp at the end of, and within the sequence

Adr	Uset V	Iset A	Tset sec	TXT Fnk	
100	10	1	1	NF	
101	**12**	**1**	**1**	**RU**	ramp
102	14	1	2	NF	
103	13	1	1	NF	
104	**11**	**1**	**1**	**RU**	**ramp**



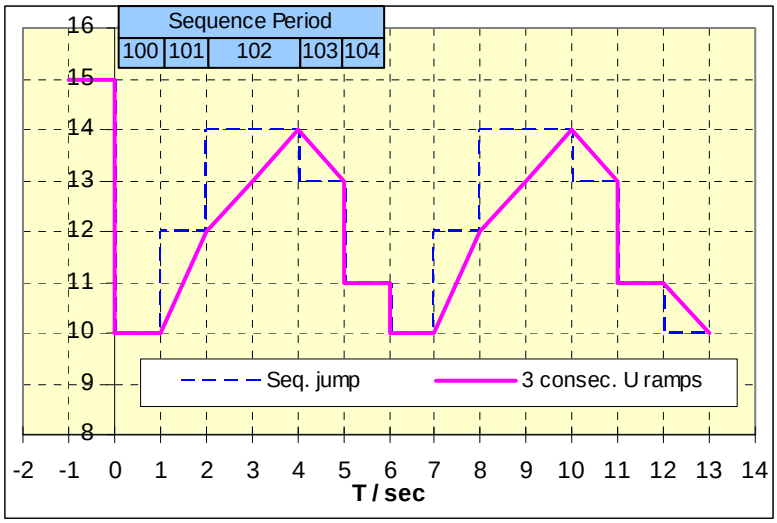
5 Voltage ramp at the beginning and end of the sequence

Adr	Uset V	Iset A	Tset sec	TXT Fnk	
100	**10**	**1**	**1**	**RU**	**ramp**
101	12	1	1	NF	
102	14	1	2	NF	
103	13	1	1	NF	
104	**11**	**1**	**1**	**RU**	**ramp**



6 Three consecutive voltage ramps within the sequence

Adr	Uset V	Iset A	Tset sec	TXT Fnk	
100	10	1	1	NF	
101	**12**	**1**	**1**	**RU**	**ramp**
102	**14**	**1**	**2**	**RU**	**ramp**
103	**13**	**1**	**1**	**RU**	**ramp**
104	11	1	1	NF	

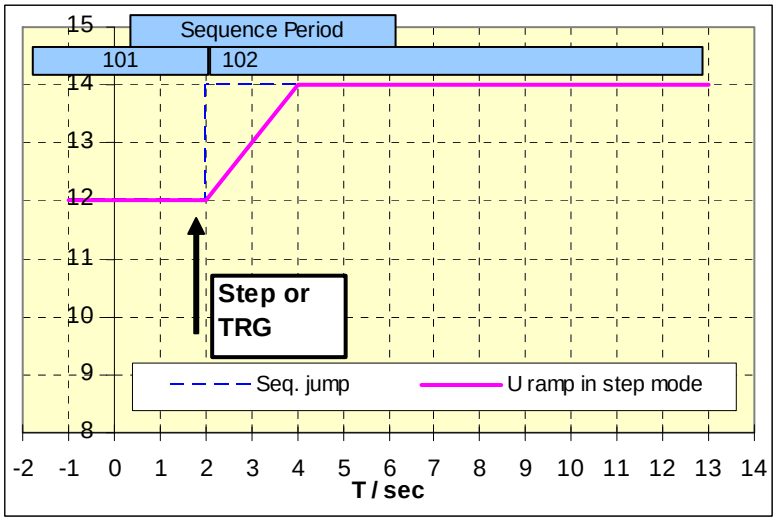


SSP-KONSTANTER 62 N / 64 N

Ramp Generator Sequence Interpolation Function

7 Voltage ramp with step-by-step control

Adr	Uset V	Iset A	Tset sec	TXT Fnk	
100	10	1	1	NF	
101	12	1	1	NF	
102	**14**	**1**	**2**	**RU**	ramp
103	13	1	1	NF	
104	11	1	1	NF	



Comments:

During execution of a ramp function, the internal microprocessor is loaded down with arithmetic tasks so that the unit is no longer capable of accepting or processing a control command until the end of each ramp duration. It may therefore be advisable to install memory locations with "NF" in between. In particular if the "Uout" and "Iout" display functions are selected during execution of a ramp, the measured value is replaced with " **rU** " " " or " " " **rI** " as of approximately 155 ms, because the display is no longer refreshed.

In the case of manual operation, the "FSET" parameter is at the top of the sequence menu. " nF ", " rU " or " rI " can be selected with the scroll keys, and the selected value is acknowledged with [ENTER]. The value chosen here for FSET can be saved to the selected sequence memory location together with USET, ISET and TSET with "[SAVE] address" (e.g. display: "Sto ""011 ") and [ENTER].

Attention: This parameter setting is updated (overwritten) when sequence functions are run automatically, as well as in "STEP" mode operation! (--> see operating instructions: [SAVE] (manual) and [*SAV Adr] (remote)).

The contents of the memory can be read out as a blinking display and viewed with "[RCL] address" und (1x !) [ENTER]; the [SELECT] keys allow for display mode selection (USET, ISET), TSET or FSET; the scroll keys can be used to advance through the memory locations.

Step-by-step operation: (STEP, TRG recall)

If an RU (or RI) ramp function is specified in the parameter set of target address i (USETi,ISETi,TSETi,FSETi), a ramp is started with the currently selected USET (or ISET) value, and progresses up to the USETi (or ISETi) target value during a time period of TSETi (or TDEF). The ISETi (or USETi) value is executed without delay in this case.

Output ON / OFF

f the Output ON / OFF command occurs during execution of a ramp function, the command cannot be processed and executed until completion of the ramp function. In the case of long ramp durations, this results in accordingly long response times.

This applies regardless as to whether the command will be entered via the control panel elements, the PC or the trigger input of the analog interface.

Other control commands are treated in a similar manner.

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