

RS-232 Protocol for EV P-Series

The RS-232 port is located on the rear panel of EV P-Series remote power amps. It can be used as interface for the connection of media control systems or facility management systems. RS-232 allows controlling and polling all parameters. Communication is performed using an easy to implement ASCII protocol which allows easy integration of remote amps in media and/or touch-panel applications. For programming notes and a complete description of the protocol please refer to the following chapters.

RS-232 Settings

The RS-232 interface of the EV remote power amps is permanent configured allowing full duplex operation. Set values are:

Baud Rate	19200 bits per second
Data Bits	8
Parity	none
Stop Bits	1
Flow Control	Xon / Xoff

The command string "*** RCM-24 command mode entered ***" is sent to RS-232 after powering on the remote amp and after a short initializing period. The RS-232 interface is now ready for communication.

ASCII Parser

A simple ASCII string protocol, which is referred to as ASCII Parser is implemented in the remote amps. Commands are organized in a tree structure with up to 5 levels. The slash "/" or a space " " can be used for separation. The question mark "?" can be utilized to query parameter settings or commands of the corresponding level. To step one level down you have to enter "../".

The following table lists the ASCII Parser commands with brief explanations.

Level 1	Level 2	Level 3	Level 4	Level 5	Read / Write	Values	Description
							Commands for RS232 communication
/COMM	/LINEFEED				R / W	ON, OFF	Linefeed state for RS232 communication

	/PROMPT				R / W	ON, OFF	Prompt state for RS232 communication
	/ECHO				R / W	ON, OFF	Echo state for RS232 communication
							Amplifier / Channel Names
/NAME	/AMP				R / W	bis 30 Zeichen	Amp name
	/IN_A				R / W		Input A name
	/IN_B				R / W		Input B name
	/OUT_A				R / W		Output A name
	/OUT_B				R / W		Output B name
							Amplifier Power On / Stand-by and Operational State
/POWER	/SWITCH				R / W	ON, OFF	Switch amp ON /OFF or read out ON / OFF state
	/DELAY				R / W	0 ... 255 [*20ms]	Power-On-Delay in steps of 20ms. 0 sets the default value, dependent on amp address.
	/STANDBY				R	ON, OFF	Read out the amp's Stand-by state
	/PROTECT				R	ON, OFF	Read out the amp's Protect state
							Commands for Level Indication
/METER	/AUTO				R / W	ON, OFF	Setting for automatic level meters transmission via CAN
	/QUIET				R / W	0 ... 255 [ms]	Pause between level meters transmission via CAN
	/VU	/RLS			R / W	0 ... 255 [ms/dB]	Release time for Input / Output level meters
		/INPTRS			R / W	-128 ... 127 [dB]	Threshold for Input level meters transmission via CAN
		/OUTTRS			R / W	-128 ... 127 [dB]	Threshold for Output level meters transmission via CAN
	/LIMIT	/RLS			R / W	0 ... 255 [ms/dB]	Release time for Limiter level meters
		/TRS			R / W	-128 ... 127 [dB]	Threshold for Limiter level meters transmission via CAN
	/READ				R		Read out all level meters
	/U				R		Read out all output voltages
	/I				R		Read out all output currents
	/Z				R / W		Read out all output impedance values including MIN. / MAX. values that occurred. Writing the channel name (A, B) deletes MIN. / MAX. values.
							Commands for Amplifier Temperature Indication
/TEMP	/ACT				R	-20 ... 150 [°C]	Read out actual amp temperature
	/HI				R / W	20 ... 150 [°C]	Threshold for thermal overload flag. The flag is set as soon as the temperature threshold is reached.
	/HYS					0 ... 40 [°C]	Hysteresis for thermal overload flag. The flag is deleted, as soon as the temperature falls below the threshold minus Hysteresis.
							Commands for Audio Monitoring
/MONI					R / W	NONE, RELAY, IN_A, OUT_A, IN_B,	List of active elements for Audio Monitoring. In- and output channels can be monitored.

						OUT_B	RELAY switches active channels onto the monitor bus.
Commands for DSP Parameters							
/PRM	/IDX100				R / W		Read and write of DSP parameter values via index numbers. For further details please refer to "Description of General DSP Parameters" and/or "DSP Parameter Index Table" .
	...						
	/IDX1A5				R / W		
	/LOAD				R / W	1 ... 8, F1	Load User Presets U01 ... U08 or Factory Presets F01. Readout of preset data loaded last. An asterisk '*' behind the preset number indicates that values have already been edited.
	/SAVE				W	1 ... 8	Save User Preset U01 ... U08.
	/TITLE				R / W	bis 16 Zeichen	Preset Name
	/DLYTEMP				R / W	-20.0 ... +60.0 [°C]	Ambient temperature for the calculation of delays with distance values.
	/DLYUNIT				R / W	MS, SAMPLES, FT, IN, M, CM, US, S	Delay unit. Delay values are read out with the here set unit. When writing delay values with /PRM/IDX ... , the stated unit is saved together with the value.
Commands for Control Inputs / Control Outputs							
/CONTROL	/IN1	/STATE			R	ON, OFF	State of the control input
		/ON	/TIME		R / W	0 ... 10.0 [s]	Delay / debounce time during activation
			/FNCT		R / W	NOTHING, POWER, ABS, REL, TOGGLE, PRESET, MONI, GFRES, MEMFLAG, MEAS, TESTGEN	Function during activation. For further details please refer to the table "Control Inputs - GPI Functions" on this page.
			/PRM	/...			Parameter and values for the functions mentioned before
		/OFF	...				(same as above but for the deactivation of control inputs)
	/IN2	...					(same as above but for the control input 2)
	/OUT1	/STATE			R / W	ON, OFF	State of the Control Output
		/ON	/TIME		R / W	0 ... 10.0 [s]	Delay / debounce time for the programmed condition
			/FNCT		R / W	NOTHING, POWER, ABS, TEMP, VU, CTL_IN, ERRFLAG, MEMFLAG, PRESET	Condition that activates a control output. For further details please refer to the table "Control Outputs - GPO Functions" on this page.
			/INV		R / W	ON, OFF	Inverts the result of the programmed condition
			/SYNC		R / W	ON, OFF	Lets you select whether the control outputs can be synchronized using a special CAN-command.
			/PRM	/..			Parameters and values for functions mentioned above

		/OFF	...				(same as above but for switching off a control output)
	/OUT2	...					(same as above but for the control output 2)
	/MEMFLAG	/SET			R / W	NONE, 1...16	List of currently set Memo flags
		/CLR			R / W	NONE, 1...16	List of currently reset Memo flags
							Commands for Receive and Transmit job codes
/JOB	/RX1	/ID			R / W	0 ... 1023	Number (ID) for job code to be received. Each power amp can receive and interpret up to 5 job codes.
		/FNCT			R / W	NOTHING, POWER, ABS, REL, TOGGLE, PRESET, MONI, GFRES, MEMFLAG, MEAS, TESTGEN	Function when receiving a job code. For further details please refer to table "Job Codes - Receive Functions" on this page.
		/PRM	/...				Parameters and values for functions mentioned above
	...						(same as above but for receiving Job Codes 2 to 5)
	/RX5	...					
	/TX1	/ID			R / W	0...1023	Number (ID) for job code to be transmitted. Each power amp can transmit up to 5 job codes.
		/TIME			R / W	0 ... 10.0 [s]	Delay / debounce time for programmed condition
		/FNCT			R / W	NOTHING, POWER, ABS, TEMP, VU, CTL_IN, ERRFLAG, MEMFLAG, PRESET	Condition that triggers the transmission of a job code. For further details please refer to table "Job Codes - Transmit Functions" on this page.
		/INV			R / W	ON, OFF	Inverts the result of the programmed condition
		/PRM	/...				Parameters and values for functions mentioned above
	...						(same as above but for transmitting Job Codes 2 to 5)
	/TX5	...					
	/LAST	/RX			R / W	0000...03FF	The ID (hex code) of the last received job code is displayed during reading. Writing simulates the reception of a job code with the stated ID (hex code) by the power amp.
		/TX			R / W	0000...03FF	The ID (hex code) of the last transmitted job code is displayed during reading. Writing transmits a job code with the stated ID (hex code).
							Commands for the Pilot Tone Generator
/PILOT	/A	/SWITCH			R / W	ON, OFF	Pilot tone generator ON / OFF for channel A
		/LEVEL			R / W	-128 ... +20 [dBu]	Pilot tone generator level for channel A
		/ERROR			R	ON, OFF	Channel A pilot tone error

		/INPUT			R	ON, OFF	Pilot tone recognized at input A
		/OUTPUT			R	ON, OFF	Pilot tone at output A
	/B	...					(same as above, but for channel B)
Commands for Amplifier Output Load							
/LOAD	/A	/MIN			R / W		Lower output load threshold for channel A (interpretation in error flag ZMIN_A)
		/MAX			R / W		Upper output load threshold for channel A (interpretation in error flag ZMAX_A)
	/B	...					(same as above, but for channel B)
	/MEAS				R W	A, B	Reading displays the actual output load values including MIN. and MAX. values that occurred. Writing the channel names resets MIN. and MAX. values.
Commands for Error and Status Requests							
/ERRFLAG	/ACT				R / W	NONE, POWER, STANDBY, PROTECT, OVT, GNDFLT_A, GNDFLT_B, ZMIN_A, ZMIN_B, ZMAX_A, ZMAX_B, PILOT_A, PILOT_B, PRESET, PCDUMP, DIRTY, PWRGOOD, CANPOLL, BRIDGED, COLLECT, GLOBAL, MEAS, Z_VLD_A, Z_VLD_B, EEPROM, PRSGATE, PLT_IN_A, PLT_OUT_A, PLT_IN_B, PLT_OUT_B	List of currently set status and error flags. Writing resets the flags GNDFLT_A, GNDFLT_B, COLLECT, GLOBAL, PRSGATE.
	/COLLECT				R / W		Flag template for Collected Error Flag (a list of status and error flags as mentioned above). The state is buffered (Hold function) when COLLECT is listed in the template.
	/GLBMASK				R / W	NONE, 0...255	Template for monitoring GLOBAL status and error flags of external CAN devices.
	/GLOBAL				R	NONE, 0...255	List of external CAN devices with set GLOBAL status and error flags.
Commands for Test Generator							

/SERVICE	/GEN	/A	/SWITCH		R / W	ON, OFF	Generator ON / OFF for channel A
			/GAIN		R / W	-128 ... 50 [dBu]	Generator output level for channel A
		/B	...		R / W		(identical parameters for channel B)
		/MODE			R / W	SINE, WHITE, PINK	Test Generator signal type
		/FREQU			R / W	10.0 ... 20000.0 [Hz]	Test Generator Frequency, when SINE has been selected
		/MIX			R / W	ON, OFF	Wanted signal and Generator signal mixed (ON) or Generator solo (OFF)
		/PRE			R / W	ON, OFF	Generator signal fed in at the input or at the output

Examples:

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/POWER/SWITCH ON           ; switches amp's power on
/TEMP/ACT ?                ; queries the amp temperature
/TEMP/ACT 65               ; reply to query: 65 °C
/ERRFLAG/ACT ?            ; queries operational state and error flags
/ERRFLAG/ACT POWER,GLOBAL ; reply to query: Power is On, Global Error
detected (Collected Error in external CAN-devices)
/ERRFLAG/GLOBAL ?        ; queries for which external CAN-devices
errors have been detected
/ERRFLAG/GLOBAL 3-4      ; reply to query: Collected Error Flags on
amps 3 and 4 are set

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General DSP Parameter Description

Parameter	Values / Settings	Description
level	-128 ... +6 [dB]	-128dB is identical to MUTE
trim level	-30 ... +6 [dB]	
mute	0 / 1	0 = ON, 1 = MUTE
polarity	0 / 1	0 = Normal, 1 = inverted
route	0 / 1 / 2	0 = IN A, 1 = IN B, 2 = IN A+B
delay		Delay value with unit (time or distance) Note: Reading displays the delay value independent of the saved unit. Writing also stores the stated unit.
bypass	0 / 1	0 = ON, 1 = BYPASS
eq type	0 ... 5	0 = PEQ, 1 = LOSHELV, 2 = HISHELV, 3 = LOCUT, 4 = HICUTt, 5 = ALLPASS
eq slope	0 / 1 / 2	0 = 0dB/Oct, 1 = 6dB/Oct, 2 = 12dB/Oct
eq frequ	20 ... 20000 [Hz]	
eq gain	-18 ... +12 [dB]	
eq quality	0.4 ... 40	EQ Quality
xover type	0 ... 17	0 = Off, 1 = 6dB-Butterworth, 2 = 12dB/Q0.5, 3 = 12dB/Q0.6, 4 = 12dB/Q0.7, 5 = 12dB/Q0.8, 6 = 12dB/Q1.0, 7 = 12dB/Q1.2, 8 = 12dB/Q1.5, 9 = 12dB/Q2.0, 10 = 12dB-Bessel, 11 = 12dB-Butterworth,

		12 = 12dB-Linkwitz, 13 = 18dB-Bessel, 14 = 18dB-Butterworth, 15 = 24dB-Bessel, 16 = 24dB-Butterworth, 17 = 24dB-Linkwitz
xover frequ	20 ... 20000 [Hz]	
compressor type (ratio)	0 ... 4	0 = 1/1, 1 = 1/1.4, 2 = 1/2, 3 = 1/4, 4 = 1/8
threshold	-30 ... 0 [dB]	
attack	0 ... 99 [ms]	
release	10 ... 999 [ms]	

DSP Parameter Index Table

/PRM/IDX100	input A delay bypass
/PRM/IDX101	input A delay
/PRM/IDX102	input A eq1 bypass
/PRM/IDX103	input A eq1 type
/PRM/IDX104	input A eq1 slope
/PRM/IDX105	input A eq1 frequ
/PRM/IDX106	input A eq1 gain
/PRM/IDX107	input A eq1 quality
/PRM/IDX108	input A eq2 bypass
/PRM/IDX109	input A eq2 type
/PRM/IDX10A	input A eq2 slope
/PRM/IDX10B	input A eq2 frequ
/PRM/IDX10C	input A eq2 gain
/PRM/IDX10D	input A eq2 quality
/PRM/IDX10E	input A eq3 bypass
/PRM/IDX10F	input A eq3 type
/PRM/IDX110	input A eq3 slope
/PRM/IDX111	input A eq3 frequ
/PRM/IDX112	input A eq3 gain
/PRM/IDX113	input A eq3 quality
/PRM/IDX114	input A eq4 bypass
/PRM/IDX115	input A eq4 type
/PRM/IDX116	input A eq4 slope
/PRM/IDX117	input A eq4 frequ
/PRM/IDX118	input A eq4 gain
/PRM/IDX119	input A eq4 quality
/PRM/IDX11A	input A eq5 bypass
/PRM/IDX11B	input A eq5 type
/PRM/IDX11C	input A eq5 slope
/PRM/IDX11D	input A eq5 frequ
/PRM/IDX11E	input A eq5 gain
/PRM/IDX11F	input A eq5 quality
/PRM/IDX120	input B delay bypass
/PRM/IDX121	input B delay
/PRM/IDX122	input B eq1 bypass
/PRM/IDX123	input B eq1 type
/PRM/IDX124	input B eq1 slope
/PRM/IDX125	input B eq1 frequ
/PRM/IDX126	input B eq1 gain
/PRM/IDX127	input B eq1 quality
/PRM/IDX128	input B eq2 bypass
/PRM/IDX129	input B eq2 type
/PRM/IDX12A	input B eq2 slope

/PRM/IDX160	output A eq2 quality
/PRM/IDX161	output A eq3 bypass
/PRM/IDX162	output A eq3 type
/PRM/IDX163	output A eq3 slope
/PRM/IDX164	output A eq3 frequ
/PRM/IDX165	output A eq3 gain
/PRM/IDX166	output A eq3 quality
/PRM/IDX167	output A eq4 bypass
/PRM/IDX168	output A eq4 type
/PRM/IDX169	output A eq4 slope
/PRM/IDX16A	output A eq4 frequ
/PRM/IDX16B	output A eq4 gain
/PRM/IDX16C	output A eq4 quality
/PRM/IDX16D	output A eq5 bypass
/PRM/IDX16E	output A eq5 type
/PRM/IDX16F	output A eq5 slope
/PRM/IDX170	output A eq5 frequ
/PRM/IDX171	output A eq5 gain
/PRM/IDX172	output A eq5 quality
/PRM/IDX173	output B level
/PRM/IDX174	output B trim level
/PRM/IDX175	output B delay bypass
/PRM/IDX176	output B delay
/PRM/IDX177	output B mute
/PRM/IDX178	output B polarity
/PRM/IDX179	output B route
/PRM/IDX17A	output B compressor bypass
/PRM/IDX17B	output B compressor type (ratio)
/PRM/IDX17C	output B compressor threshold
/PRM/IDX17D	output B compressor attack
/PRM/IDX17E	output B compressor release
/PRM/IDX17F	output B limiter bypass
/PRM/IDX180	output B limiter threshold
/PRM/IDX181	output B limiter release
/PRM/IDX182	output B xover hipass type
/PRM/IDX183	output B xover hipass frequ
/PRM/IDX184	output B xover lopass type
/PRM/IDX185	output B xover lopass frequ
/PRM/IDX186	output B eq1 bypass
/PRM/IDX187	output B eq1 type
/PRM/IDX188	output B eq1 slope
/PRM/IDX189	output B eq1 frequ
/PRM/IDX18A	output B eq1 gain

Control Inputs - GPI Functions

Every control input can be programmed with individual functions for switching on (/CONTROL/INx/ON/...) and switching off (/CONTROL/INx/OFF/...). When the state of a control input changes, the programmed function is executed after the previously set delay or debounce times are expired (up to 10 sec.). Available functions are explained in the following table.

Job Codes - Receive Functions

Job codes are distributed throughout the CAN network via broadcast commands. Each job code has a freely definable number (ID). Received job codes can trigger the same functions as local GPI control inputs. Receiving a job code with the defined number (ID) triggers the function with its specified parameter values. Available functions for /JOB/RXx/FNCT/... and corresponding parameters /JOB/RXx/PRM/... are identical with local GPI functions, as outlined in the table.

Function	Parameter	Values	Description
NOTHING			No function
POWER	../PRM/SWITCH	ON	Switched the amp's power to ON
		OFF	Switches the amp in Stand-by mode
		FLIP	Toggles between ON and Stand-by and vice versa
ABS	../PRM/IDX		Sets the selected DSP parameter to an absolute value
		100 ... 1A5	Selects the DSP parameter via index number
			New absolute parameter value
REL	../PRM/VALUE		Changes the selected DSP parameter in relation to the actual value
		100 ... 1A5	Selects the DSP parameter via index number
			Relative change of the parameter
TOGGLE	../PRM/IDX		Toggles a DSP parameter between 0 and 1 (this only makes sense for flag parameters, e.g. MUTE, BYPASS, etc.)
		100 ... 1A5	Selects the DSP parameter via index number
PRESET	../PRM/NR		Loads a DSP preset
		1 ... 8, F1	Selects an user preset U01 to U08 or a factory preset F01
MONI	../PRM/SEL		Controls the selection for the audio monitoring bus
		NONE, RELAY, IN_A, OUT_A, IN_B, OUT_B	Selects audio monitoring parameters. All combinations are possible.
		ON, OFF	Switches the selected audio monitoring parameter ON or OFF
GFRES	../PRM/CHAN		Deletes stored Ground Fault flags in selected channels
		A, B	Any combination of output channels is possible
MEMFLAG	../PRM/CLR		Manipulates general Memo flags
		NONE, 1...16	Clears selected flags
		NONE, 1...16	Changes the state of selected flags. Use CLR and TOGGLE together, so that selected flags are set afterwards.
MEAS	../PRM/FREQU		Initiates impedance testing at a fixed frequency
		10..20000 [Hz]	Generator frequency for impedance test
		-128 ... +50 [dBu]	Generator level for impedance test in channel A

	../PRM/GAIN_B	-128 ... +50 [dBu]	Generator level for impedance test in channel B
	../PRM/TIME	0.0, 0.1 ... 4.17 [ms]	Impedance test time span. 0.0 = continuously ON
	../PRM/MIX	ON, OFF	Wanted signal and Generator signal mixed
	../PRM/PRE	ON, OFF	Generator signal fed in at the input (On) or output (Off) of the DSP signal chain
TESTGEN			Defines parameters for the audio testing generator
	../PRM/A/SWITCH	ON, OFF	Switches the testing generator at channel A ON
	../PRM/A/GAIN	-128 ... +50 [dBu]	Defines the testing generator output level for channel A
	../PRM/B/...		(same as above but for channel B)
	../PRM/MODE	SINE, WHITE, PINK	Defines the testing generator's signal type
	../PRM/FREQU	10 ... 20000 [Hz]	Defines the generator frequency, when SINE is selected
	../PRM/MIX	ON, OFF	Wanted signal and Testing generator signal mixed
	../PRM/PRE	ON, OFF	Testing generator signal fed in at the input (On) or output (Off) of the DSP signal chain

Control Outputs - GPO Functions

Two conditions can be programmed for each control output which either activate the output (/CONTROL/OUTx/ON/...) or deactivate the output (/CONTROL/OUTx/OFF/...). When the assigned function (/CONTROL/OUTx/ON/FNCT or /CONTROL/OUTx/OFF/FNCT) is recognized as "true" and the state is maintained for at least the set delay or debounce times (up to 10 sec.), the control output changes to activated (On) or deactivated (Off). The INV parameter allows inverting the state of the assigned function. Synchronizing the switching of control outputs is possible by means of a special system-wide CAN command, when SYNC is set to ON. Available functions and corresponding settings are explained in the following table.

Job Codes - Transmit Functions

Job codes are distributed throughout the CAN network via broadcast command. Each job code has a freely definable number (ID). Identical conditions can be assigned to job codes and control outputs. A job code with a defined number (ID) is transmitted, when the corresponding condition for (/JOB/TXx/FNCT) is recognized as "true" and the state is maintained for at least the set delay or debounce times (up to 10 sec.). The INV parameter allows inverting the state of the assigned function. Available functions for /JOB/TXx/FNCT/... as well as corresponding parameters /JOB/TXx/PRM/... are identical to local GPO functions, as outlined in the table.

Function	Parameter	Values	Description
NOTHING			No function
POWER			Interpretation results in "true", when the power amp is powered on (even during power-on delay) and "false", when the amp's power is off.
ABS			Interpretation results in "true", when the DSP parameter value is higher or equals the reference value.
	../PRM/IDX	100 ... 1A5	Selects the DSP parameter via index number

	../PRM/VALUE		Reference value
TEMP			Interpretation results in "true", when the measured amplifier temperature is higher or equals the reference value.
	../PRM/CELSIUS	-20 ... 150 [°C]	Temperature reference value
VU			Interpretation results in "true", when at least one of the selected values is higher or equals the programmed reference value.
	../PRM/SEL	IN_A, OUT_A, ALIM_A, DLIM_A, COMP_A, IN_B, OUT_B, ALIM_B, DLIM_B, COMP_B	Any combination of the values listed is possible. ALIM = Amplifier Limiter DLIM = DSP Limiter COMP = DSP Compressor
	../PRM/DB	[dB]	VU reference value
CTL_IN			Interpretation results in "true", when the selected control input is activated.
	../PRM/IDX	1, 2	Selects a control input
ERRFLAG			Interpretation results in "true", when one of the selected flags is set. Any combination of the flags listed is possible.
	../PRM/MASK	POWER STANDBY PROTECT OVT GNDFLT_A, GNDFLT_B ZMIN_A, ZMIN_B, ZMAX_A, ZMAX_B PILOT_A, PILOT_B DIRTY PWRGOOD CANPOLL BRIDGED COLLECT GLOBAL MEAS Z_VLD_A, Z_VLD_B EEPROM PLT_IN_A, PLT_IN_B PLT_OUT_A, PLT_OUT_B	set, when the power is OFF set, when the amplifier is in Stand-by mode set, when the amp's Protect mode is activated set, when the amp's thermal limit is exceeded set, when ground fault has been detected set, when the measured output load is out of limit value range set, when pilot tone monitoring returns errors set, when the actual preset has been edited but has not been saved yet set, when Power Good interpretation returns errors set, when the CAN Polling timed out set, when the power amp is operated in Bridged Mode (only with P3000RL) set, when the amp's Collected Error Flag is ON set, when the amp's External Amplifier Error Flag is ON set, when the internal testing generator has been activated for output load measurement set, when output load measuring is not possible because of missing or too low signal set when there is an error in EEPROM administration set, when the 19kHz pilot tone signal applied to the amplifier input is not recognized set, when the 19kHz pilot tone signal applied to the amplifier output is not recognized
MEMFLAG			Interpretation results in "true", when the actual state of the selected memo flags resembles the reference pattern.
	../PRM/MASK	NONE, 1...16	Selects memo flags to be interpreted (listing)
	../PRM/VALUE	NONE, 1...16	Defines the expected reference pattern for memo flags
PRESET			Interpretation results in "true", when the actual preset is identical to a selected preset.
	../PRM/DIRTY	ON, OFF	Selection is also valid, when parameters have been changed (dirty)
	../PRM/USER	NONE, 1 ... 8	List of selected user presets
	../PRM/FACT	NONE, 1	List of selected factory presets