

MASTERDRIVES MC

"Free blocks" function diagram

Status: 08.12.05

- Notes:
- A free block is only processed if it is specifically assigned to a sampling time via the allocated U95x parameter; see sheet [702]!
 - Parameterization of the sampling sequence is also described on sheet [702].
 - The approximate calculating time per block is indicated in $\{\mu s\}$ for each type of block.

1	2	3	4	5	6	7	8	
Free blocks					V1.66	fp_mc_700_e.vsd	Function diagram	- 700 -
Cover sheet						08.12.05	MASTERDRIVES MC	

MASTERDRIVES MC function diagram - List of contents of the free blocks

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				- Connector-to-parameter converter	798

1	2	3	4	5	6	7	8
List of contents				V1.6	fp_mc_701_e.vsd	Function diagram	- 701 -
Free blocks					08.01.02	MASTERDRIVES MC	

		Sampling time 2 ... 20 U950 ... U953	Sampling sequence 2 ... 20 U960 ... U963				
Function	Function block number	Parameter for setting the sampling time Parameter No. (factory setting)	Parameter for setting the sampling sequence Parameter No. (factory setting)				
Processing of input terminals and receive data from serial interfaces	001	U950.01 (20)	U960.01 (10)				
	002	U950.02 (20)	U960.02 (20)				
				
	019	U950.19 (10)	U960.19 (190)				
Processing of output terminals and transmit data to serial interfaces	020	U950.20 (10)	U960.20 (9998)				
				
	029	U950.29 (10)	U960.29 (290)				
Free function blocks	031	U950.31 (10)	U960.31 (310)				
	032	U950.32 (10)	U960.32 (320)				
				
	099	U950.99 (20)	U960.99 (990)				
	101	U951.01 (20)	U961.01 (1010)				
	102	U951.02 (20)	U961.02 (1020)				
				
Angle synchronism and positioning	330	U953.30 (20)	U963.30 (3330)				
	331	U953.31 (20)	U963.31 (3310)				
				
Internal sequence control and setpoint calculation	350	U953.50 (20)	U963.50 (3500)				
	351	U953.51 (20)	U963.51 (3510)				
				
Other functions	370	U953.70 (20)	U963.70 (3700)				
	371	U953.71 (3)	U963.71 (100)				
	372	U953.72 (2)	U963.72 (3720)				

Example of the sampling time and sampling sequence of a function block:

This function block has the function block number 314
It is deactivated in the factory setting (U953.14 = 20).

Via U953.14 = 4 the function block can be allocated to the sampling time T4 (= 16 x T0 = 3.2 ms at 5 kHz pulse frequency).

The function block is processed in the factory setting at the 3140th position. By setting U963.14 to a value not equal to 3140, the block can be allocated to a different position in the sampling sequence.

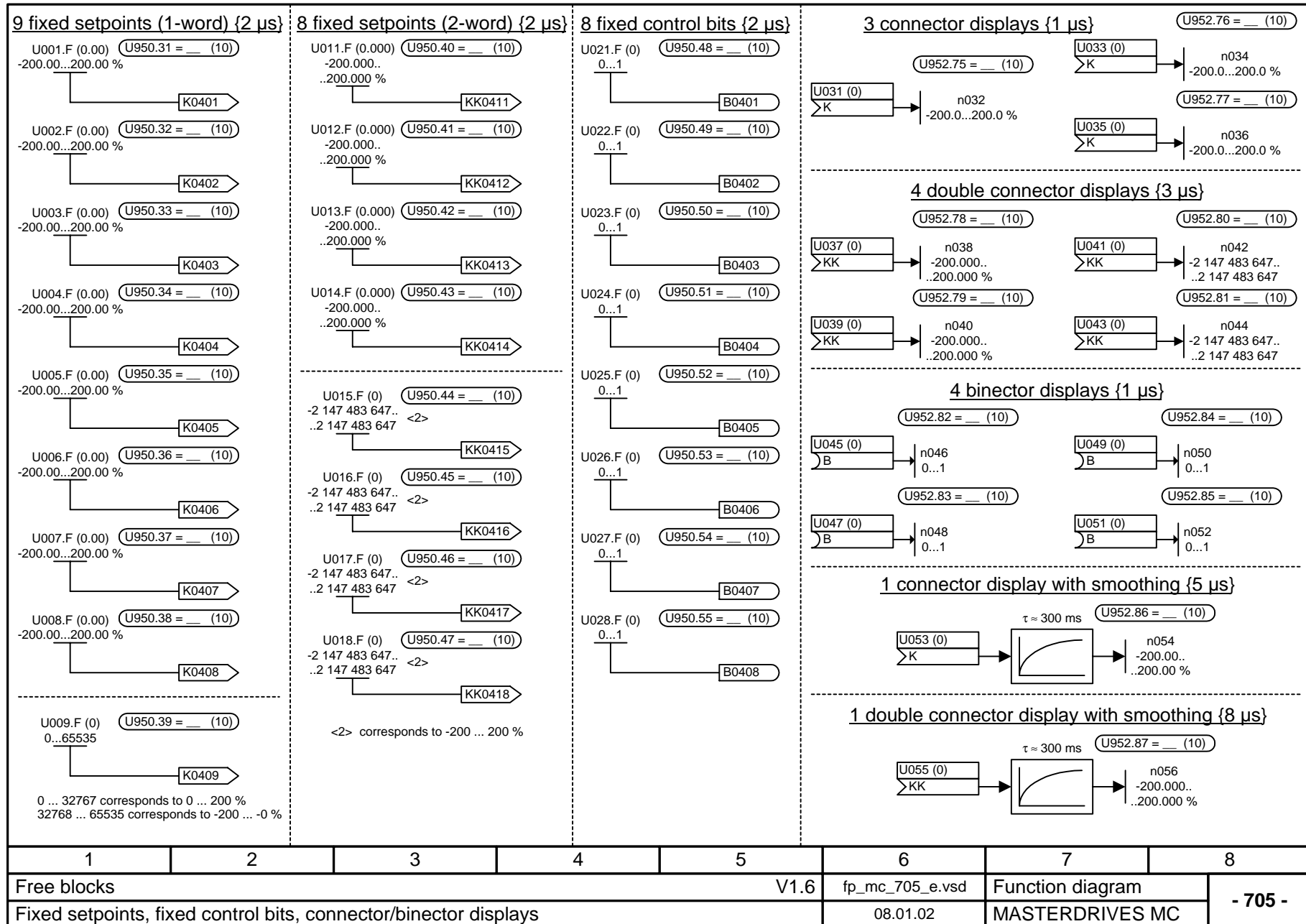
Parameter for setting the sampling time
Value range: 2 ... 20
Factory setting: 20 (applies to most blocks)

Parameter value	Sampling time (T0 = 1/pulse frequency = 1/P340)	Sampling time at 5 kHz pulse frequency (T0 = 200 μs)
2	T2 = 4 x T0	0.8 ms
3	T3 = 8 x T0	1.6 ms
4	T4 = 16 x T0	3.2 ms
5	T5 = 32 x T0	6.4 ms
6	T6 = 64 x T0	12.8 ms
7	T7 = 128 x T0	25.6 ms
8	T8 = 256 x T0	51.2 ms
9	T9 = 512 x T0	102.4 ms
10	T10 = 1024 x T0	204.8 ms
11 ... 19	Reserved for future applications	
20	Block is not calculated	

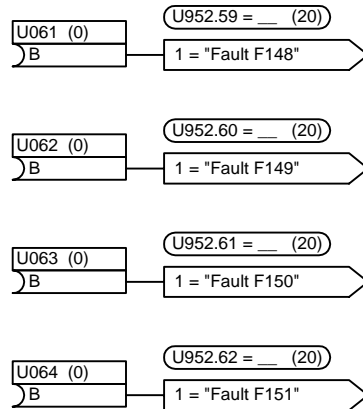
Parameter for setting the sampling sequence:
Value range: 0 ... 9999
Factory setting: Function block number x 10
i.e. in the factory setting the blocks are processed in the sequence of the block numbers
Exception: Function block number 10, 14, 15, 20 - 25, 371

Monitoring of calculating time

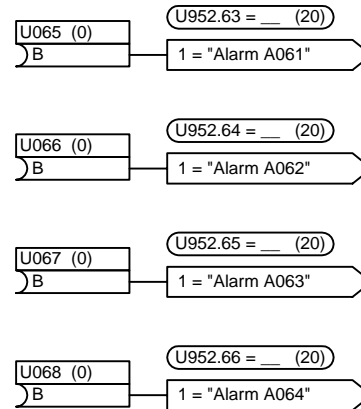
1	2	3	4	5	6	7	8
Free blocks				V1.66	fp_mc_702_e.vsd	Function diagram	- 702 -
Setting and monitoring the sampling times and sampling sequence					08.12.05	MASTERDRIVES MC	



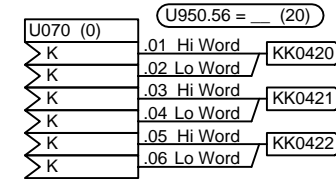
4 fault message trigger signals {2 µs}



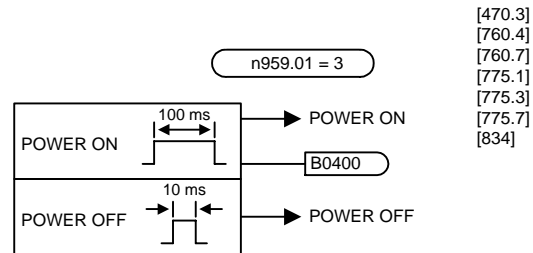
4 alarm message trigger signals {2 µs}



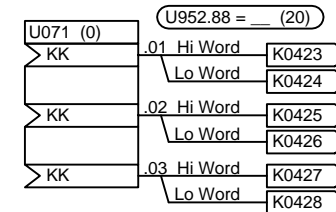
3 connector/double connector converters {9 µs}



Voltage monitoring of electronics power supply

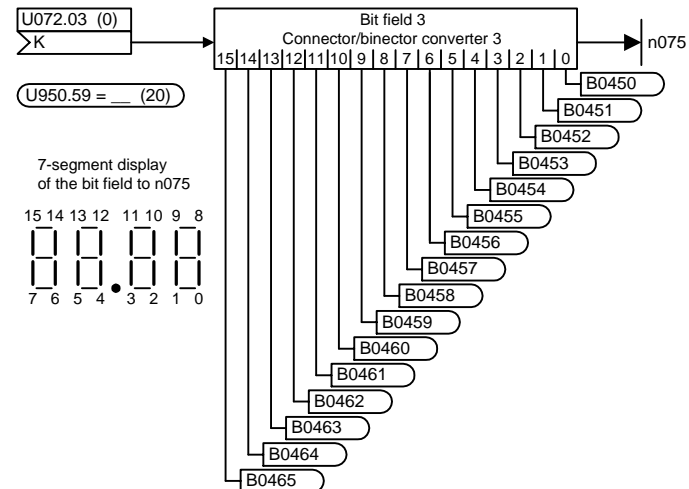
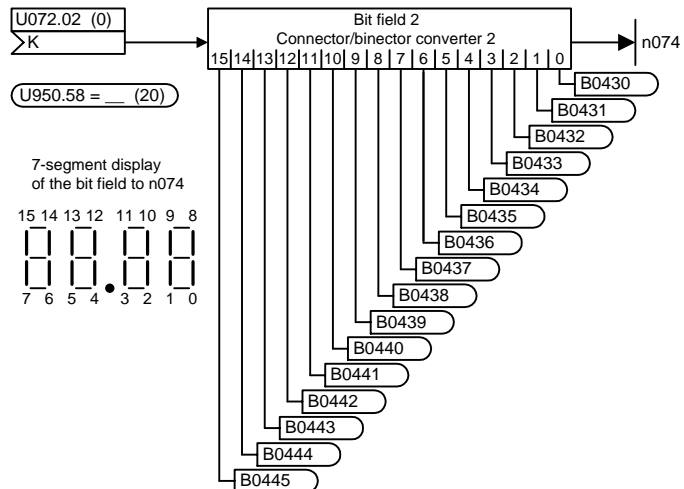
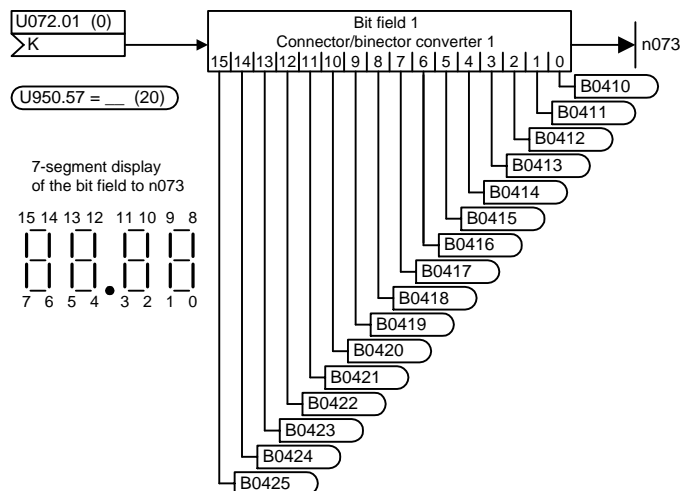


3 double connector/connector converters {11 µs}



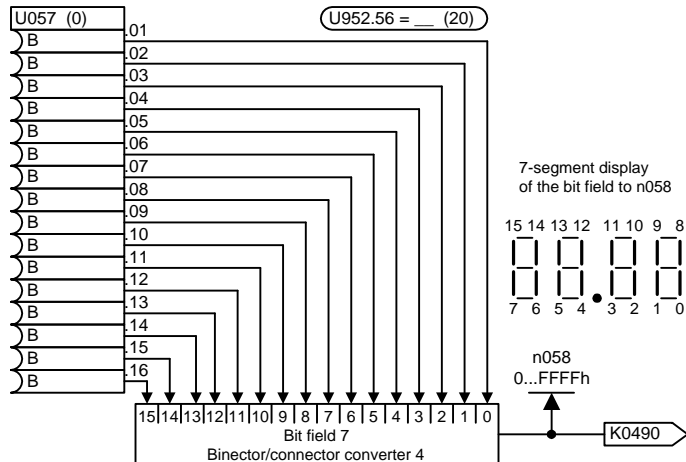
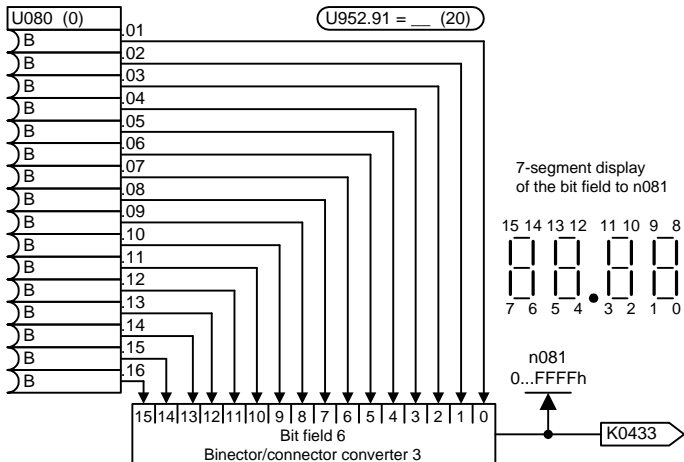
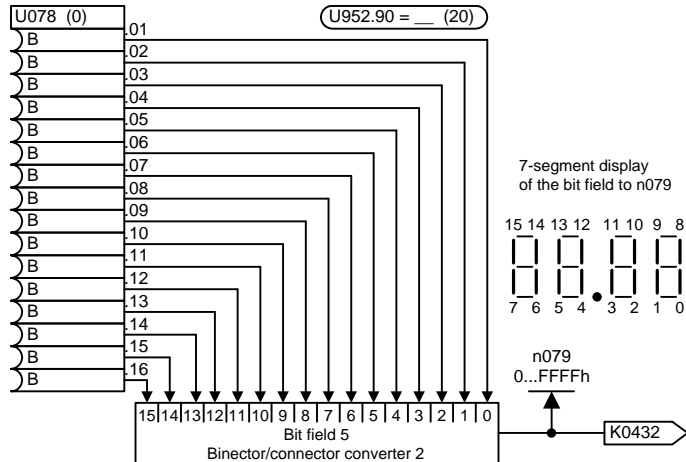
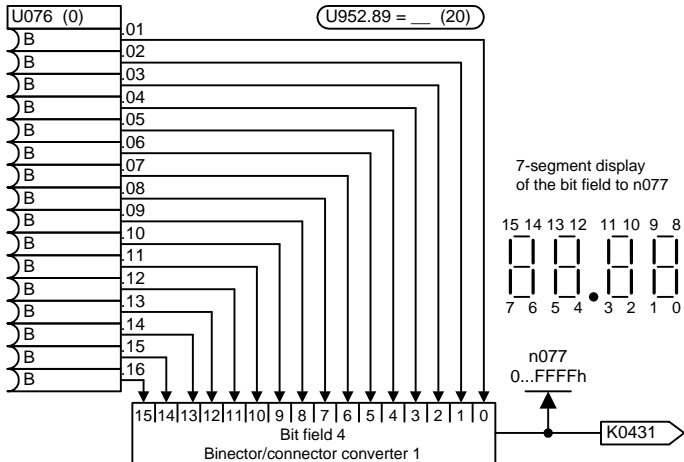
1	2	3	4	5	6	7	8
Free blocks				V1.6	fp_mc_710_e.vsd	Function diagram	- 710 -
Fault/alarm trigger signals, connector <==> double connector converter					08.01.02	MASTERDRIVES MC	

3 connector/binector converters {11 μs}



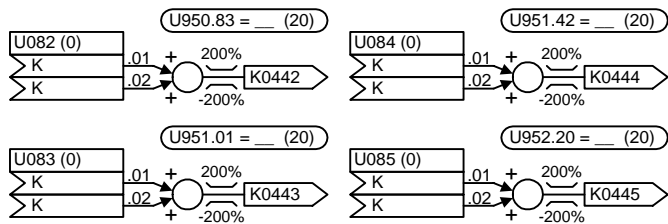
1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_715_e.vsd	Function diagram
Connector/binector converters					08.01.02	MASTERDRIVES MC	- 715 -

4 binector/connector converters {12 μ s}

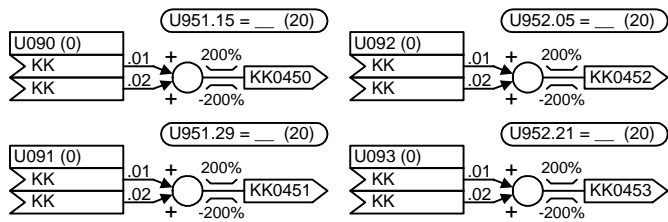


1	2	3	4	5	6	7	8	
Free blocks V1.6					fp_mc_720_e.vsd	Function diagram		- 720 -
Binector connector converters					08.01.02	MASTERDRIVES MC		

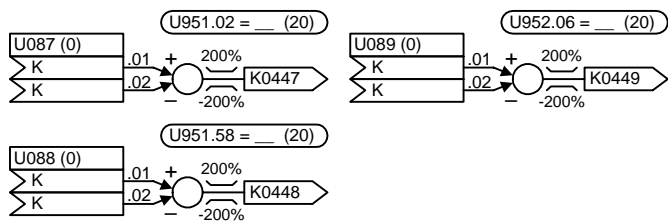
4 adders with 2 inputs (1-word) {3 μs}



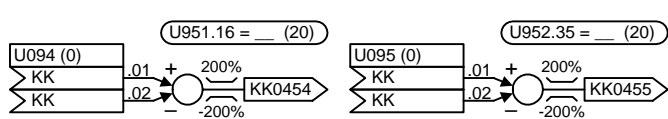
4 adders with 2 inputs (2-word) {6 μs}



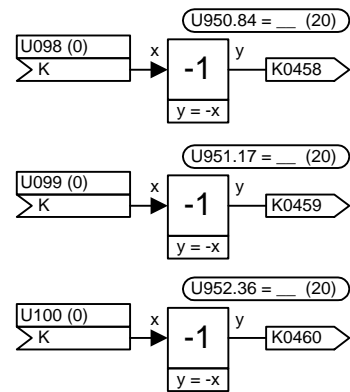
3 subtracters (1-word) {3 μs}



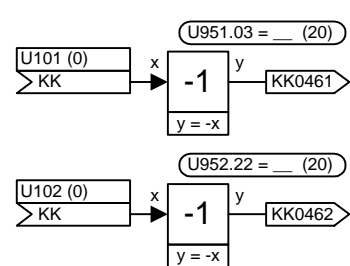
2 subtracters (2-word) {6 μs}



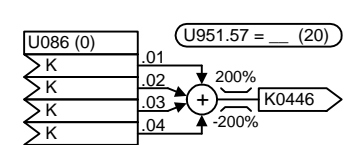
3 sign inverters (1-word) {2 μs}



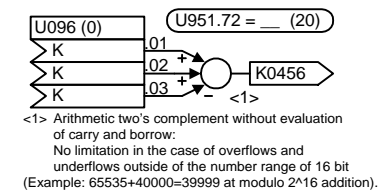
2 sign inverters (2-word) {4 μs}



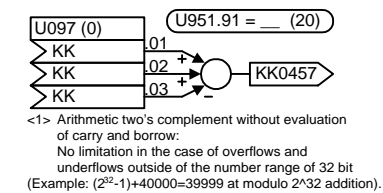
1 adder with 4 inputs (1-word) {7 μs}



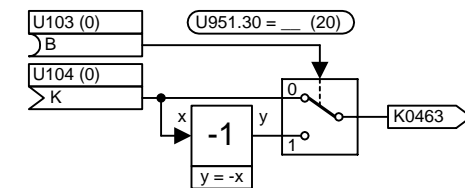
1 modulo 2^16 adder/subtractor {2 μs}



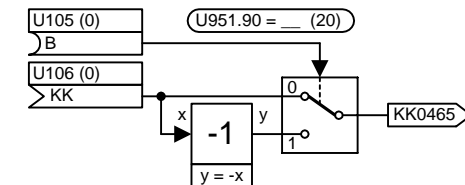
1 modulo 2^32 adder/subtractor {2 μs}



1 switchable sign inverter (1-word) {2 μs}

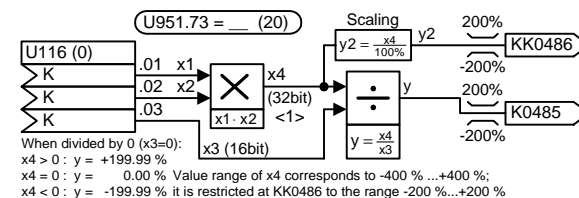
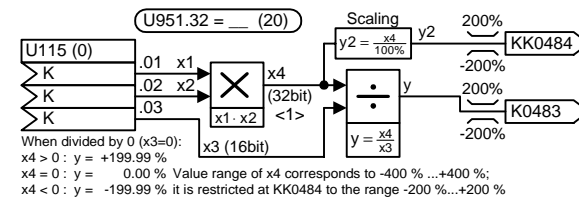
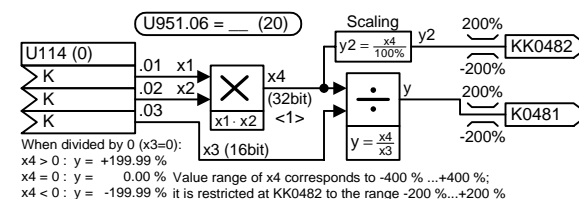


1 switchable sign inverter (2-word) {4 μs}

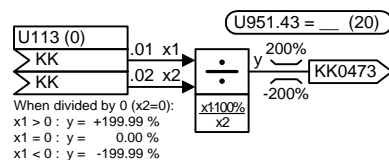


1	2	3	4	5	6	7	8
Free blocks					V1.6	Function diagram	
Adders, subtracters, sign inverters					fp_mc_725_e.vsd	MASTERDRIVES MC	
					08.01.02	- 725 -	

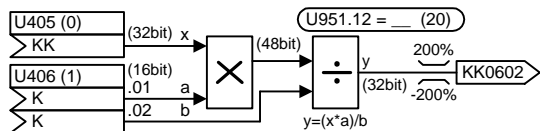
3 high-resolution multipliers/dividers (1-word) {18 μ s}



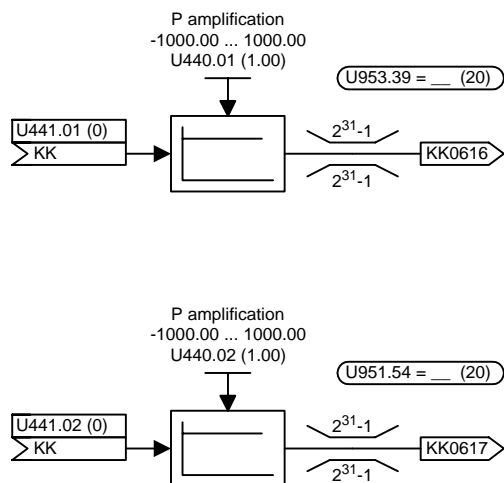
1 divider (2-word) {70 μ s}



1 high-resolution multiplier/divider (2-word) {25 μ s}

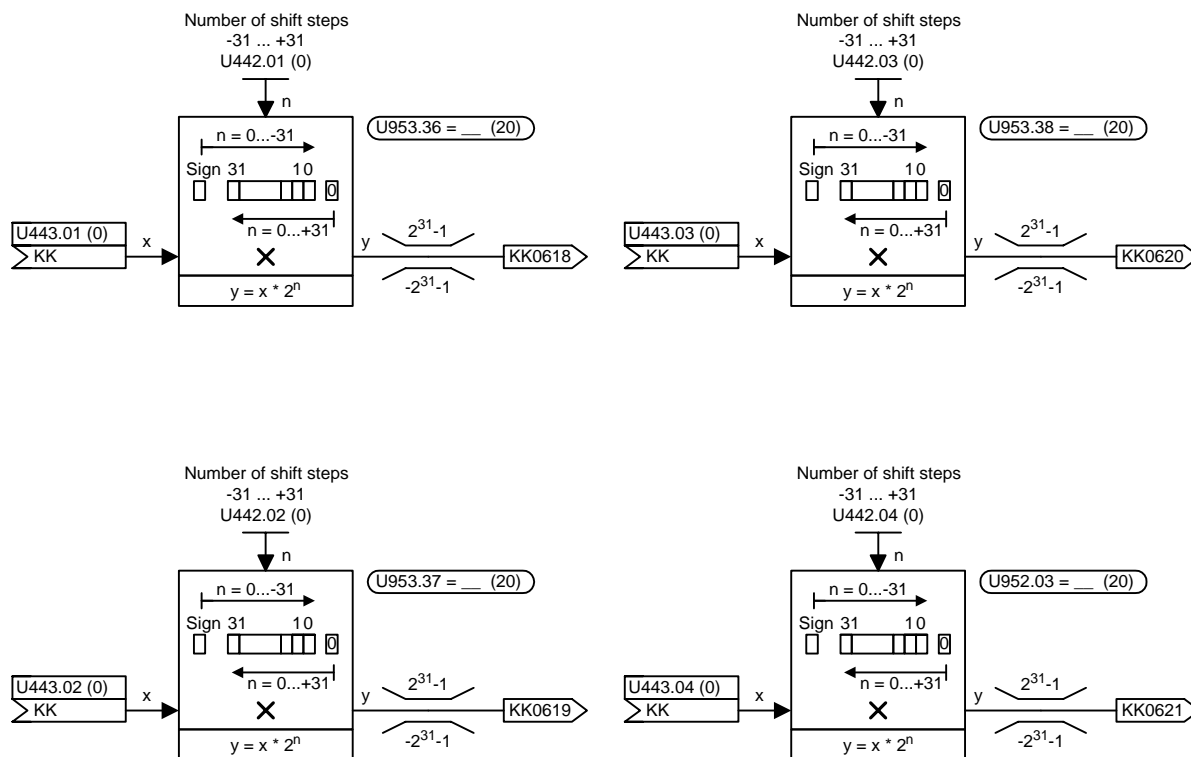


2 P-amplifiers/multipliers (2-word)



New Blocks (from V1.3 and higher)

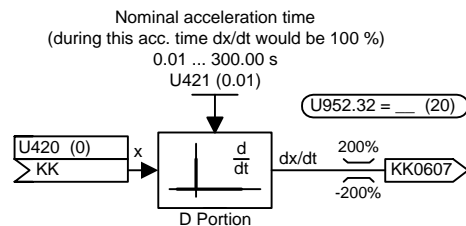
4 shift multipliers/dividers (2-word)



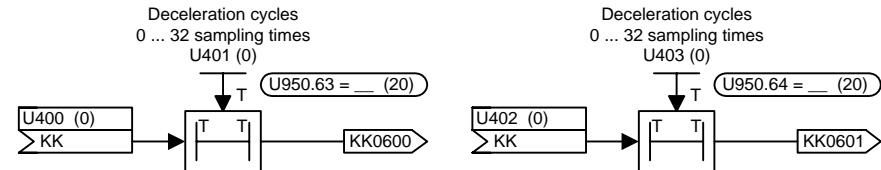
1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_732_e.vsd	Function diagram
Multipliers/dividers, P-amplifiers, shift multipliers					08.01.02	MASTERDRIVES MC	- 732 -

New Blocks (from V1.3 and higher)

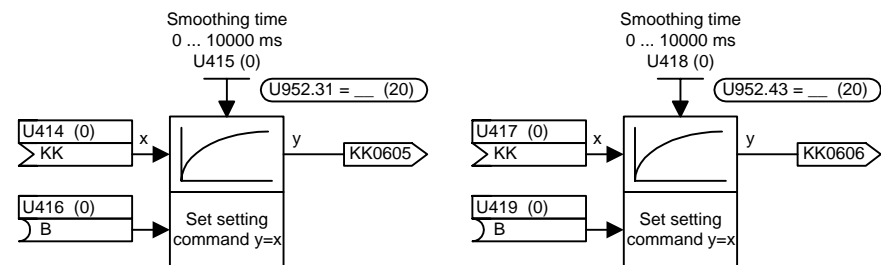
1 differentiator (2-word) {16 μ s}



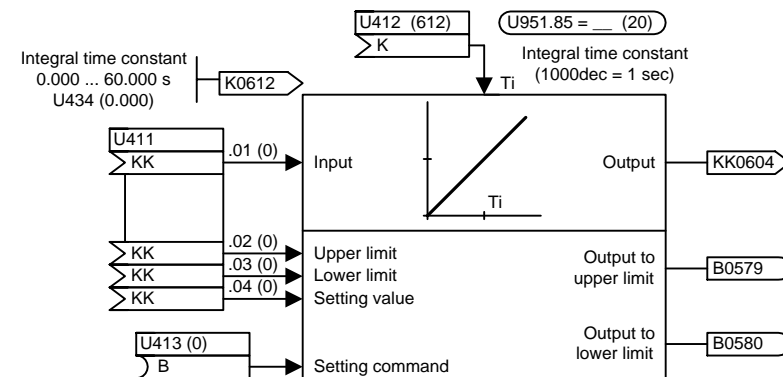
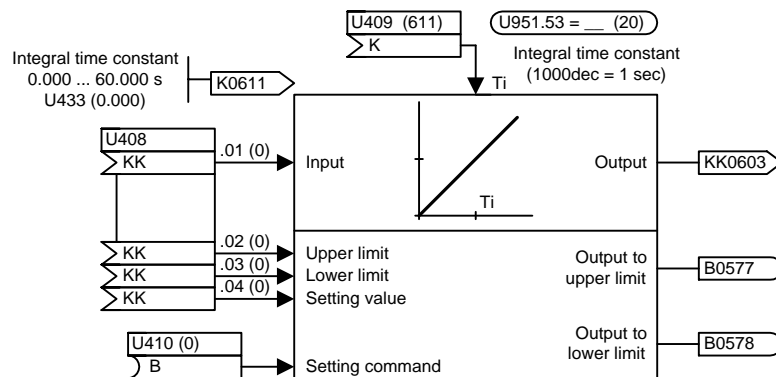
2 delay elements for analog signals (2-word) {10 μ s}



2 settable smoothing elements, high-resolution (2-word) {16 μ s}

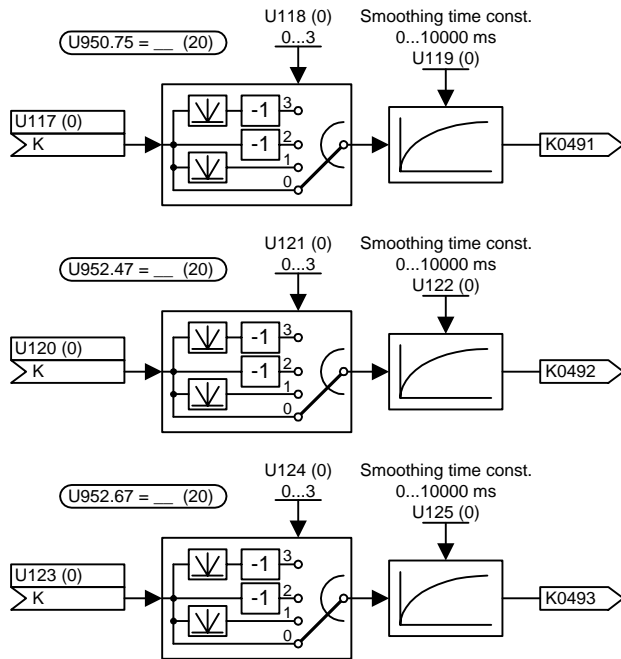


2 integrators (2-word) {30...50 μ s}

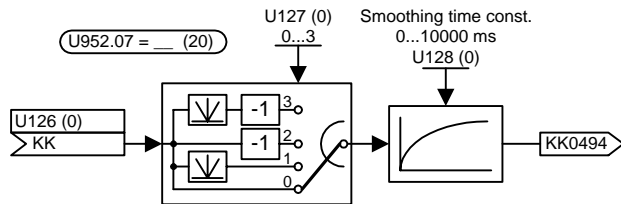


1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_734_e.vsd	Function diagram
Delay elements, differentiator, integrator, smoothing elements					08.01.02	MASTERDRIVES MC	- 734 -

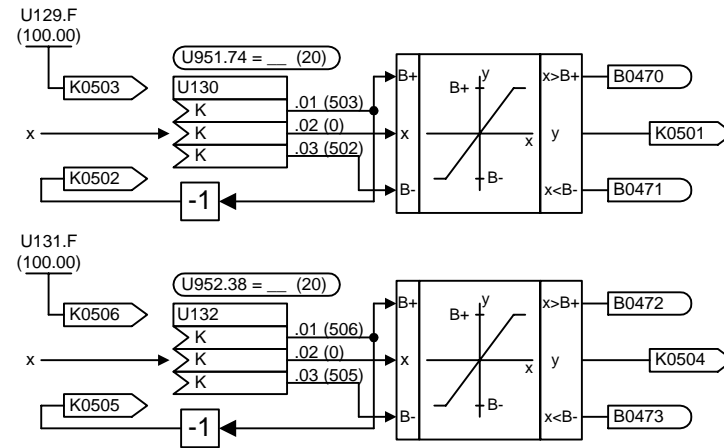
3 absolute-value generators with smoothing (1-word) {7 μ s}



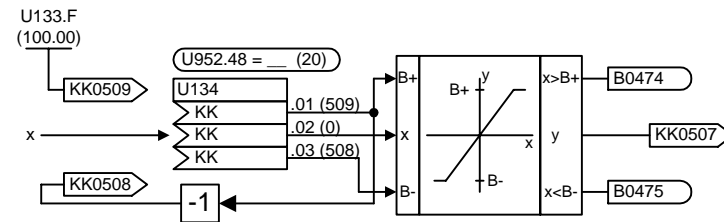
1 absolute-value generators with smoothing (2-word) {10 μ s}



2 limiters (1-word) {5 μ s}

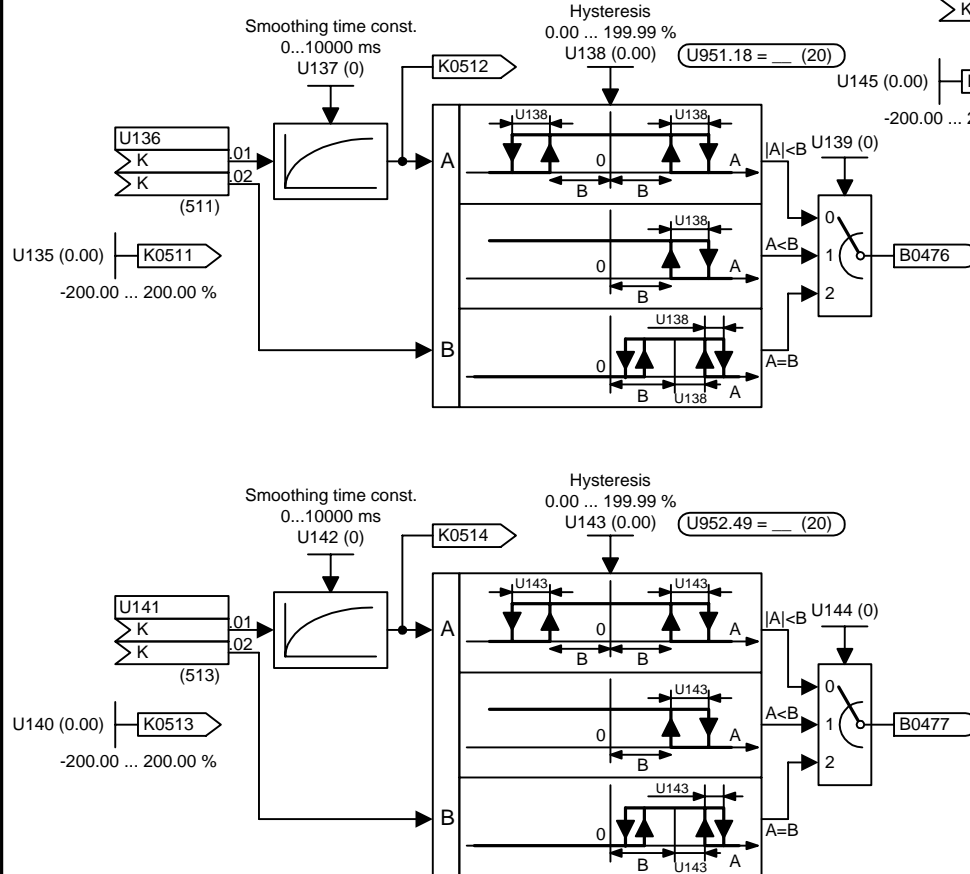


1 limiter (2-word) {11 μ s}

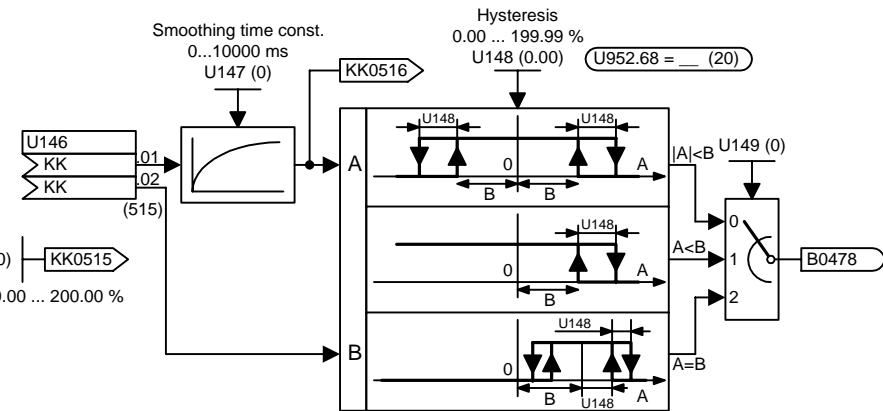


1	2	3	4	5	6	7	8	
Free blocks					V1.6	fp_mc_735_e.vsd	Function diagram	- 735 -
Absolute-value generators with smoothing, limiters						08.01.02	MASTERDRIVES MC	

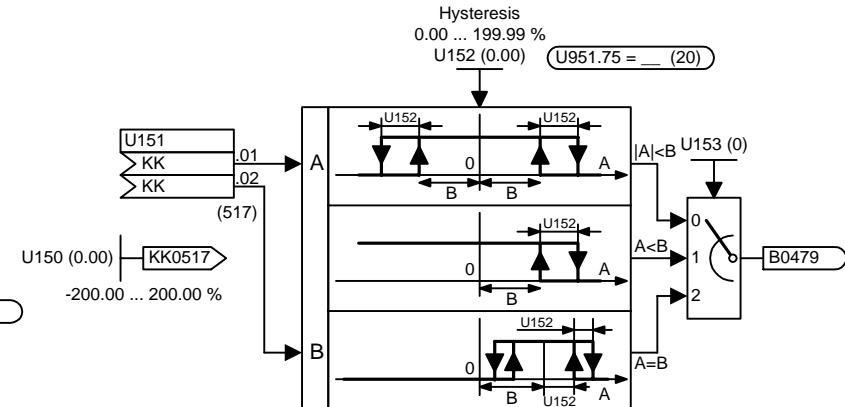
2 limit-value monitors with smoothing (1-word) {15 µs}



1 limit-value monitor with smoothing (2-word) {24 µs}

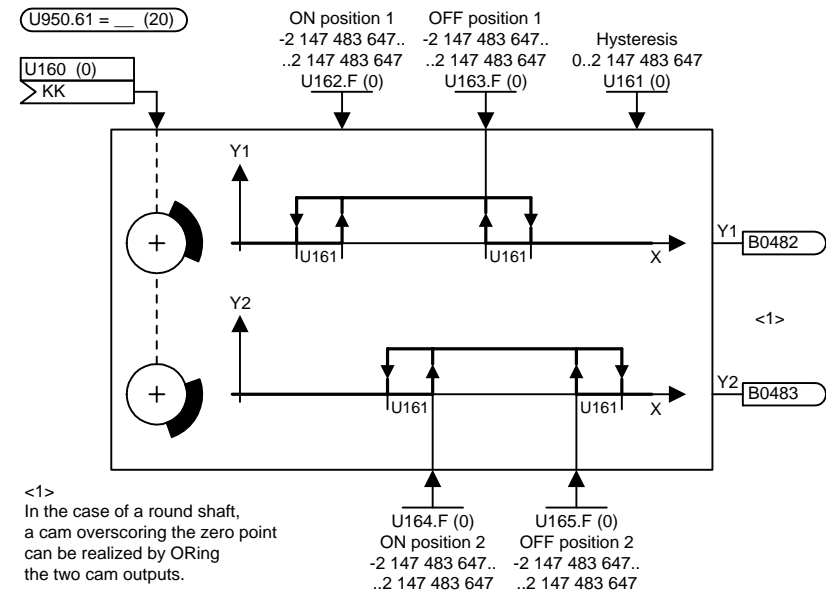
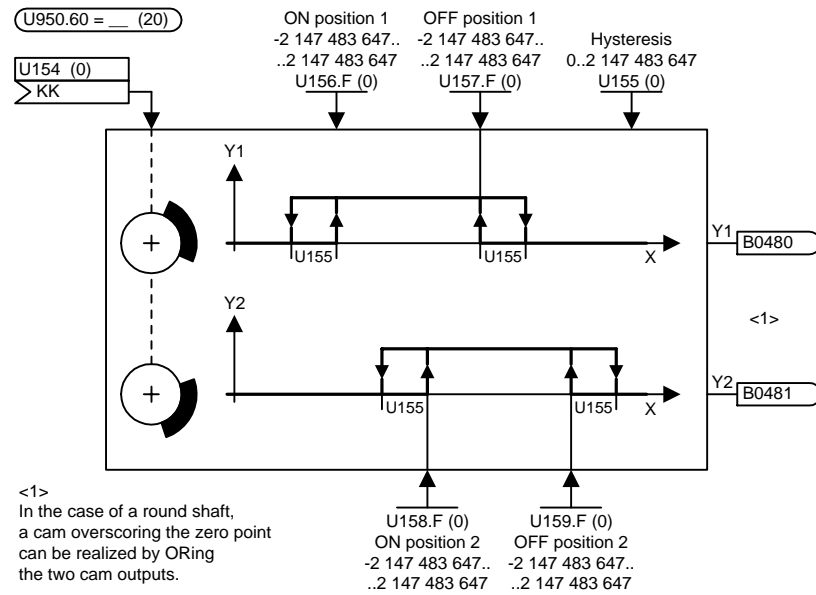


1 limit-value monitor without smoothing (2-word) {18 µs}



1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_740_e.vsd	Function diagram
Limit-value monitors with and without smoothing					08.01.02	MASTERDRIVES MC	- 740 -

2 cam-contactor groups each with 2 cams (2-word) {9 µs}



1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_745_e.vsd	Function diagram
Cam-contactor groups					08.01.02	MASTERDRIVES MC	- 745 -

U186

B .01 (0)

B .02 (0)

B .03 (0)

B 0001 .04 (1)

ENABLE

Memory

Signal selector switch does not switch until ENABLE = 1

U951.78 = __ (20)

U187 (0)

KK .01 0

KK .02 1

KK .03 2

KK .04 3

KK .05 4

KK .06 5

KK .07 6

KK .08 7

MUX

2² 2¹ 2⁰ Signal select

KK0539

Figure 1: Demux operation.

The diagram illustrates the internal logic of the demultiplexer. It shows a **Memory** block and a **DEMUX** block.

Memory Block:

- Inputs: U188.B (01), U188.B (02), U188.B (03), U188.B 0001 (04), U188.B (05).
- ENABLE input: U189.KK.
- Note: Signal selector switch does not switch until ENABLE = 1.
- Outputs: 2², 2¹, 2⁰ (Signal select).

DEMUX Block:

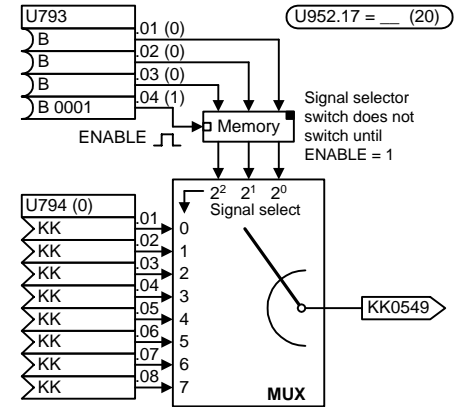
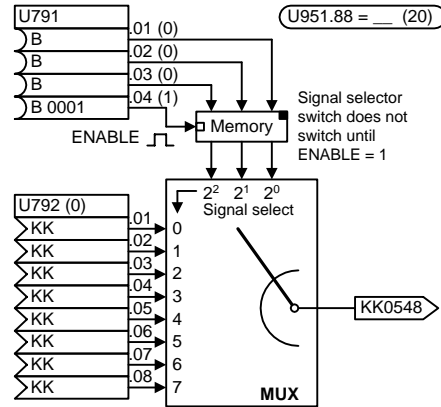
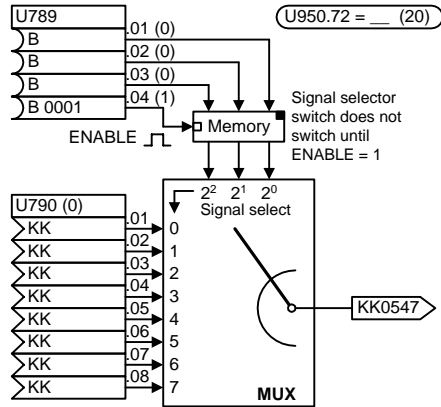
- Inputs: MODE (U189.0), KK (U189.KK).
- Outputs: 0 to 7, each connected to a specific KK053x connector (e.g., 0 to KK0531, 1 to KK0532, etc.).

MODE = 0:
The 7 non-through-connected output connectors are each permanently assigned to the value '0'.

MODE = 1:
The 7 non-through-connected output connectors remain 'frozen' at the old value.

- 750 -

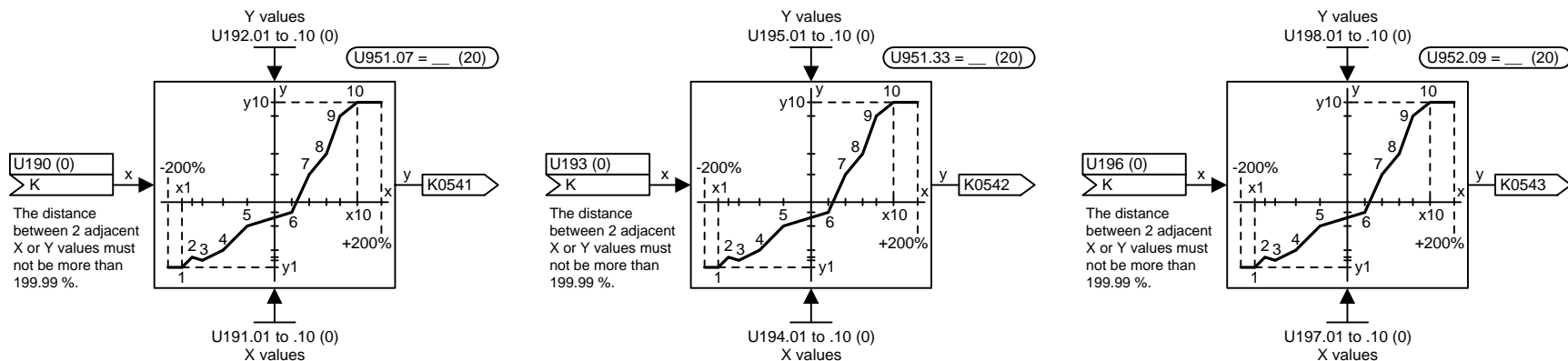
3 Analog signal multiplexer with 8 channels (2-word) {6 μ s}



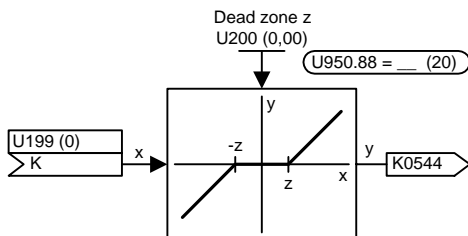
For a further multiplexer: see function diagram 750

1	2	3	4	5	6	7	8	
Free blocks V1.6					fp_mc_753_e.vsd	Function diagram		- 753 -
Analog signal multiplexers					08.01.02	MASTERDRIVES MC		

3 characteristic blocks with 10 support values (1-word) {15 μ s}

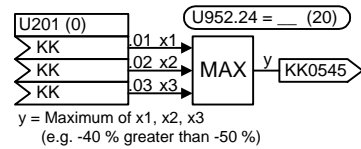


1 dead zone (1-word) {2 μ s}

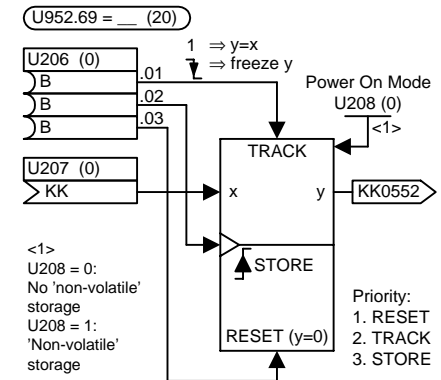
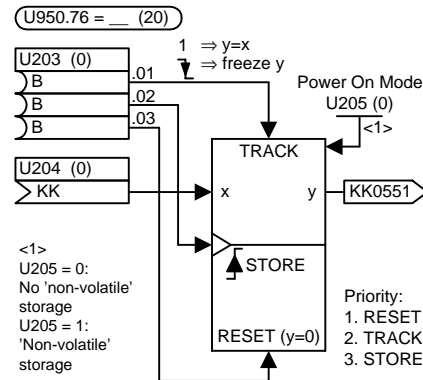


1	2	3	4	5	6	7	8	
Free blocks					V1.6	fp_mc_755_e.vsd	Function diagram	- 755 -
Characteristic blocks, dead zone						08.01.02	MASTERDRIVES MC	

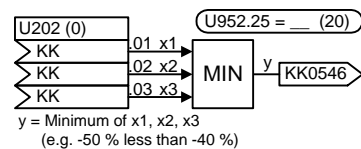
1 Maximum selection (2-word) {8 μs}



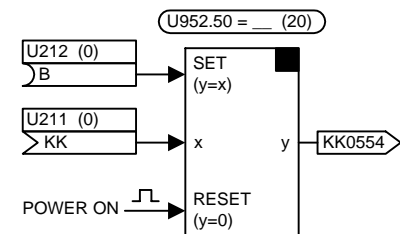
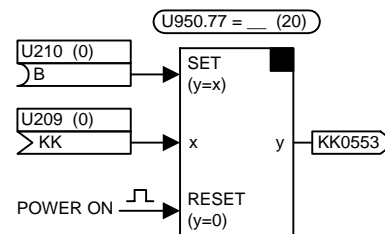
2 tracking / storage elements (2-word) {6 μs}



1 Minimum selection (2-word) {8 μs}

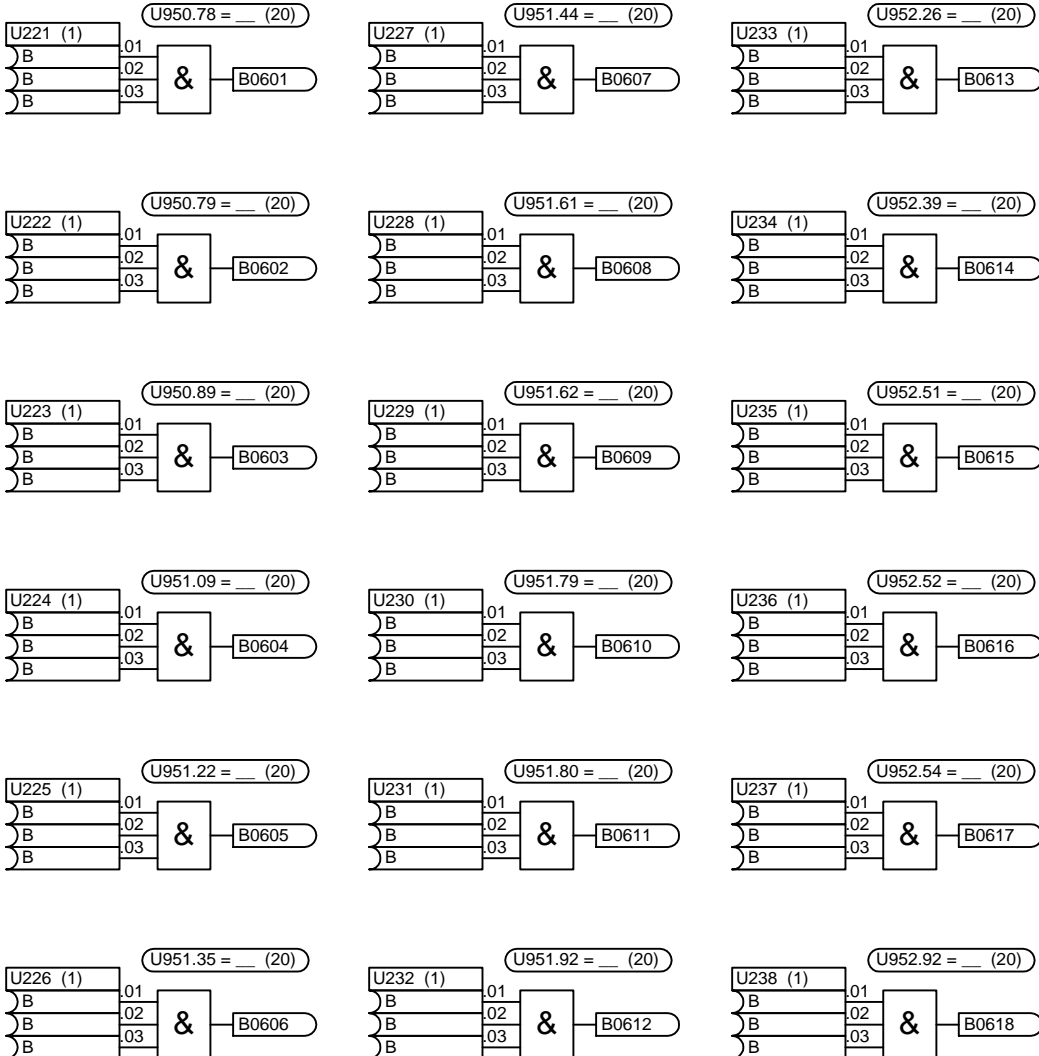


2 analog signal storages (2-word) {4 μs}

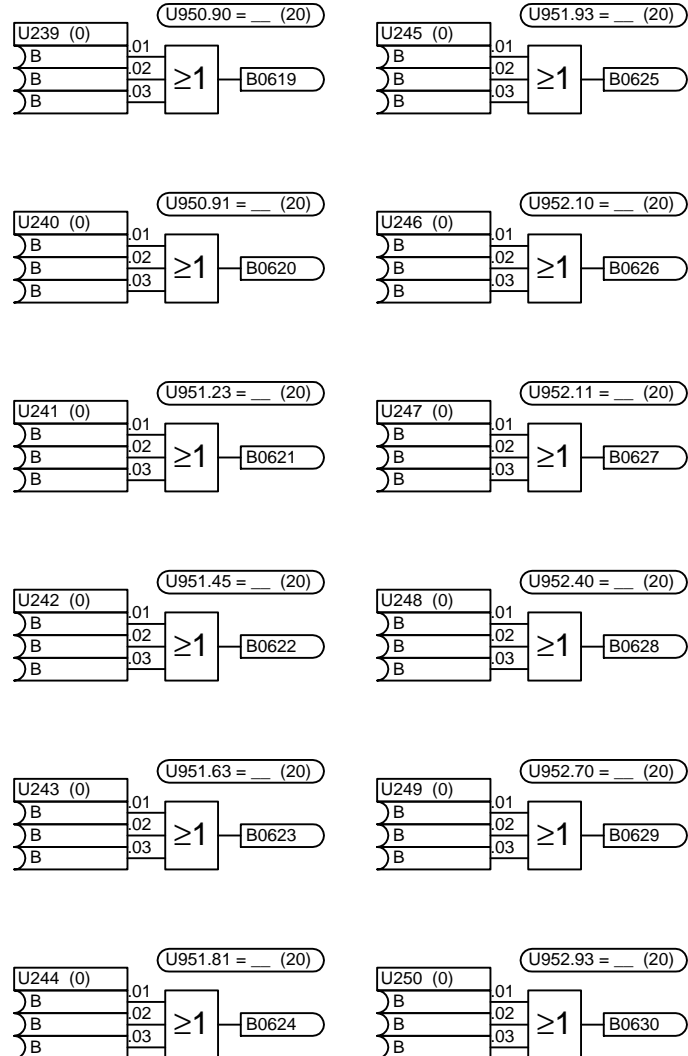


1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_760_e.vsd	Function diagram
Minimum/maximum selection, tracking/storage elements					08.01.02	MASTERDRIVES MC	- 760 -

18 AND elements with 3 inputs each {3 us}

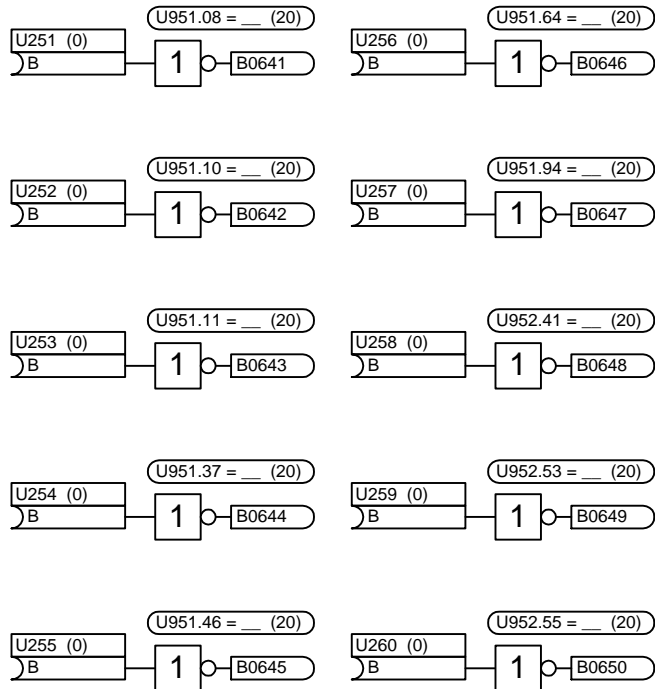


12 OR elements with 3 inputs each {3 us}

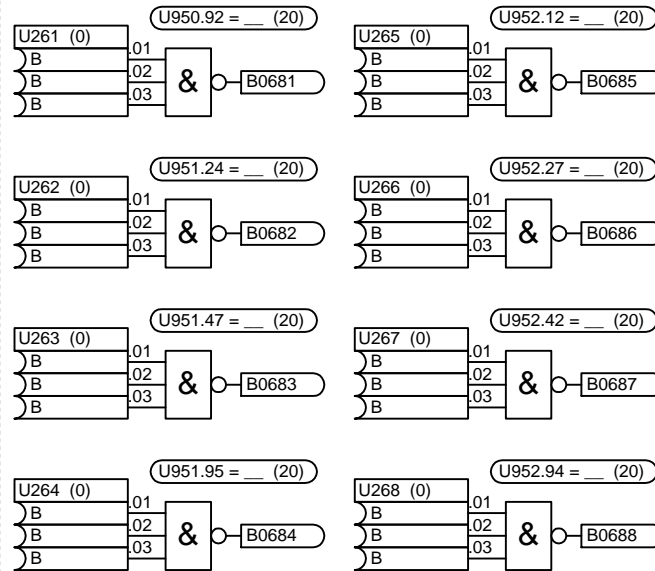


1	2	3	4	5	6	7	8	
Free blocks					V1.6	fp_mc_765_e.vsd	Function diagram	- 765 -
AND/OR elements						08.01.02	MASTERDRIVES MC	

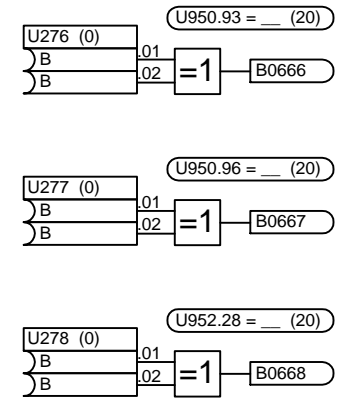
10 inverters {2 μs}



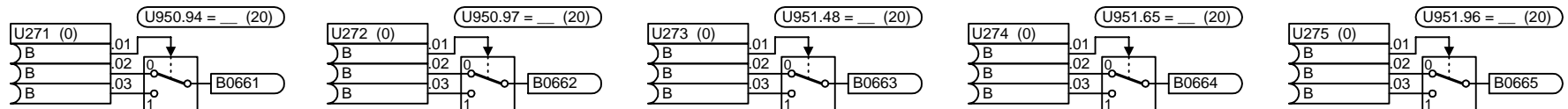
8 NAND elements with 3 inputs each {2 μs}



3 EXCLUSIVE OR elements {2 μs}

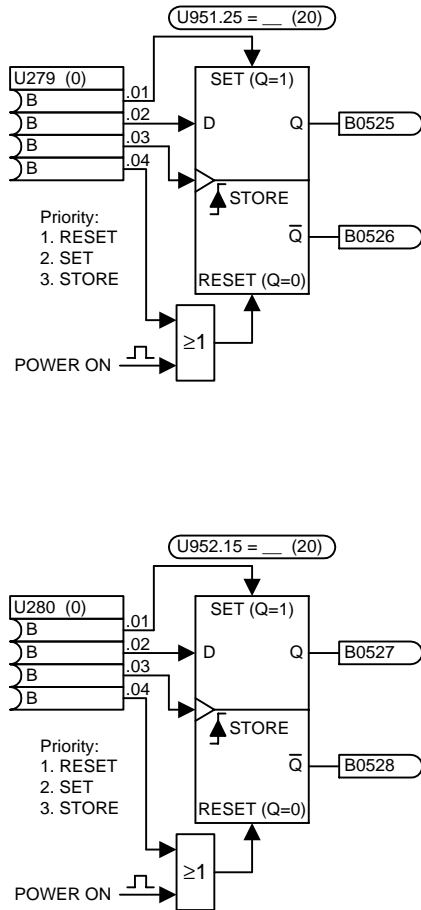


5 digital signal switches {2 μs}

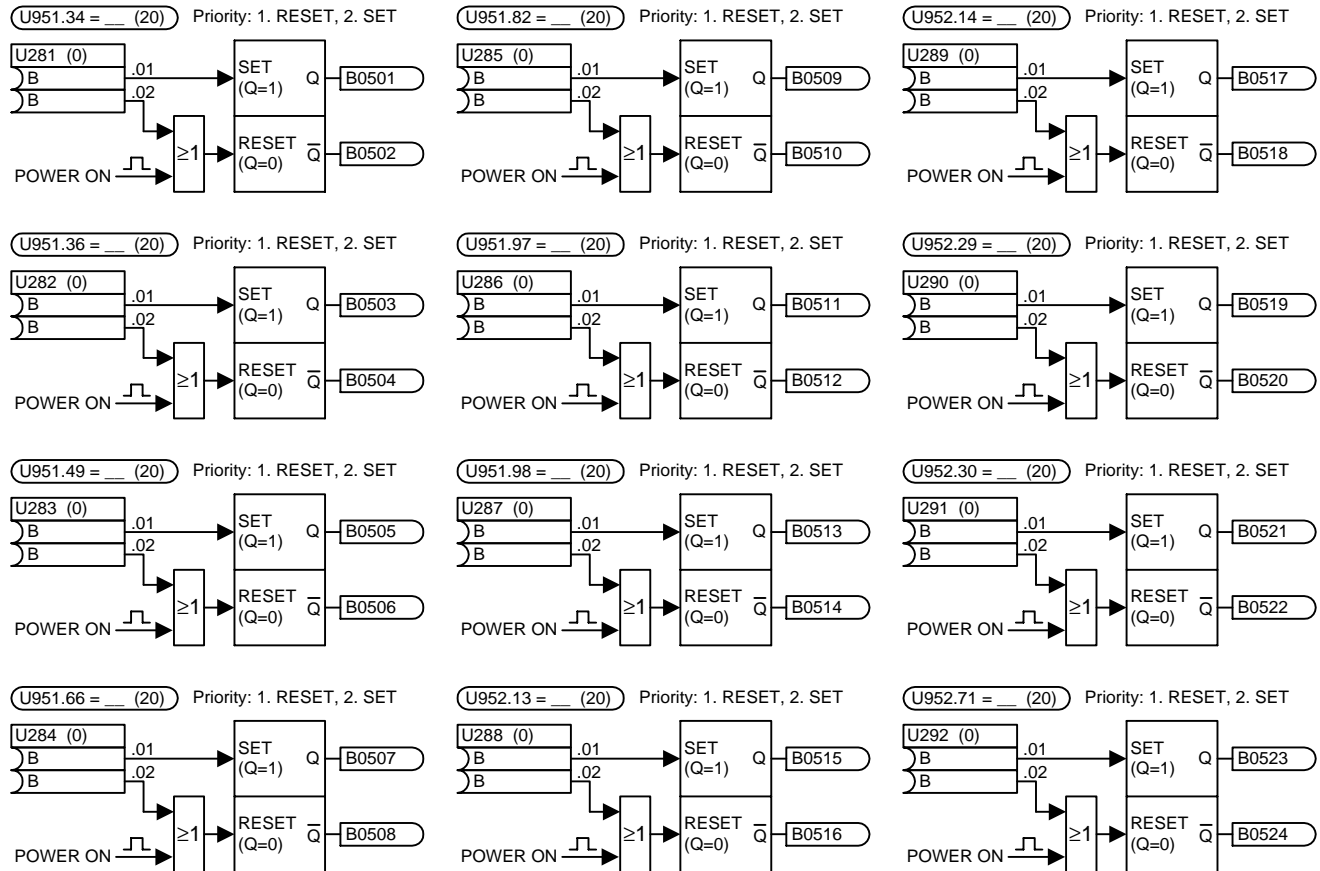


1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_770_e.vsd	Function diagram
Inverters, NAND elements, EXCLUSIVE OR elements, digital signal switches					08.01.02	MASTERDRIVES MC	- 770 -

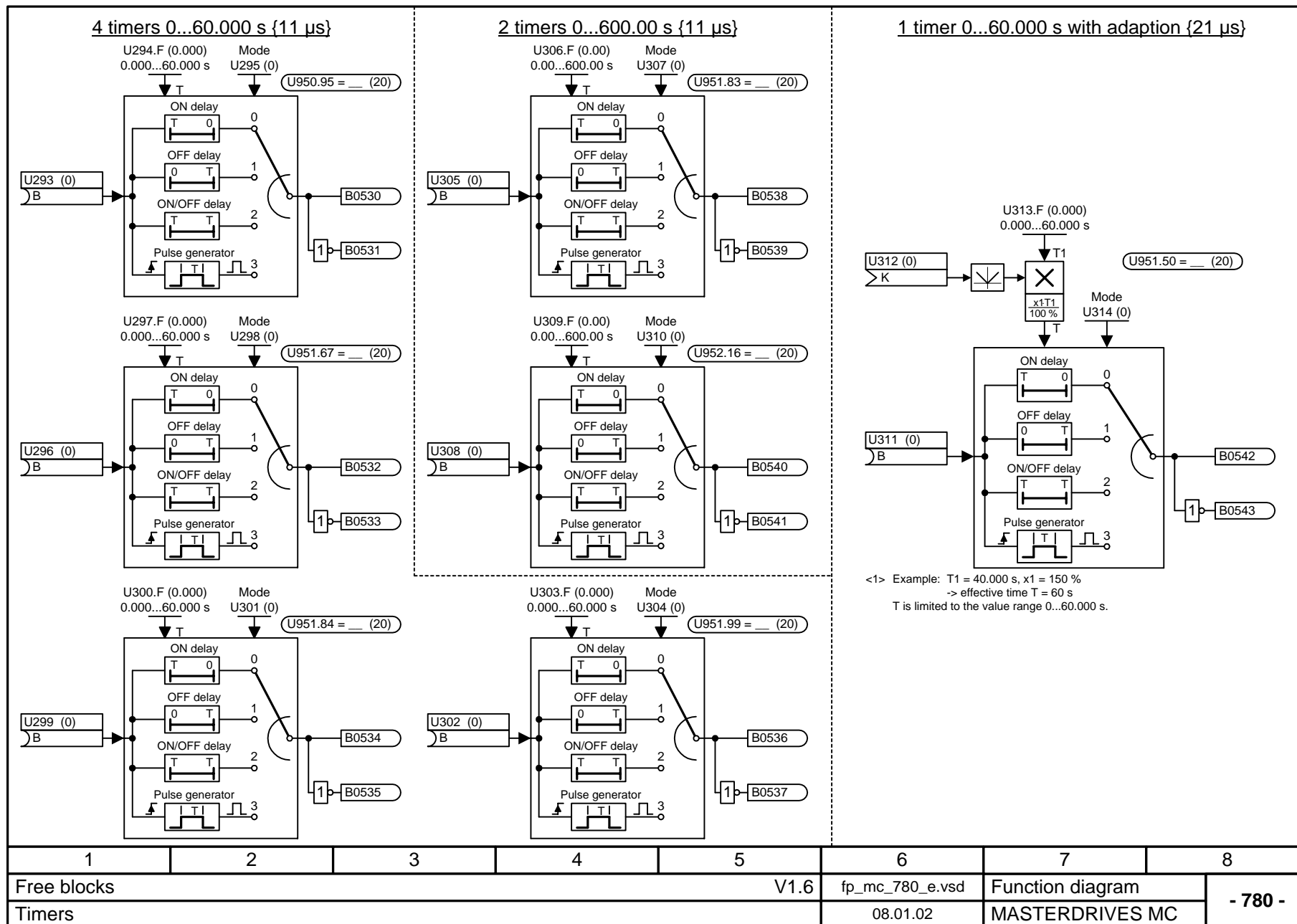
2 D flipflops {5 μ s}



12 RS flipflops {3 μ s}

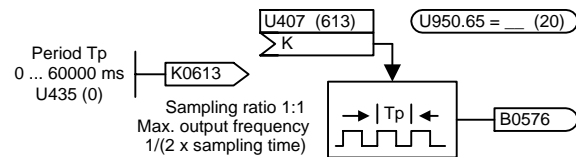


1	2	3	4	5	6	7	8	
Free blocks					V1.6	fp_mc_775_e.vsd	Function diagram	- 775 -
D and RS flipflops						08.01.02	MASTERDRIVES MC	



New Blocks (from V1.3 and higher)

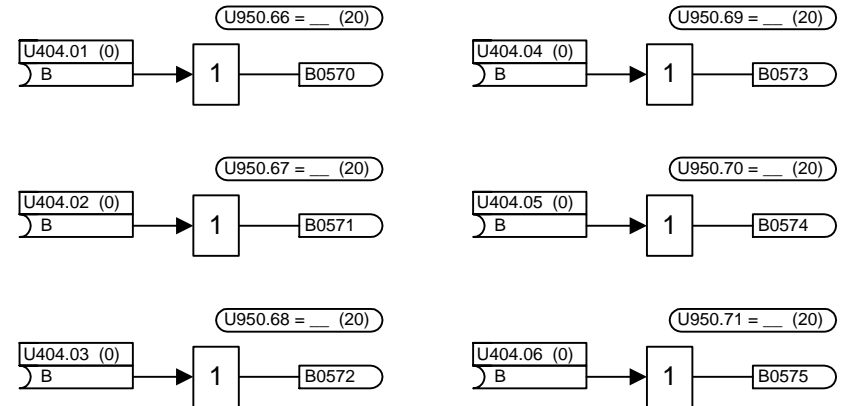
1 Pulse generator (flash encoder) {5 μ s / 15 μ s if Tp is changed}



Note: The implemented period Tp is always an integral multiple of (2 x sampling time).

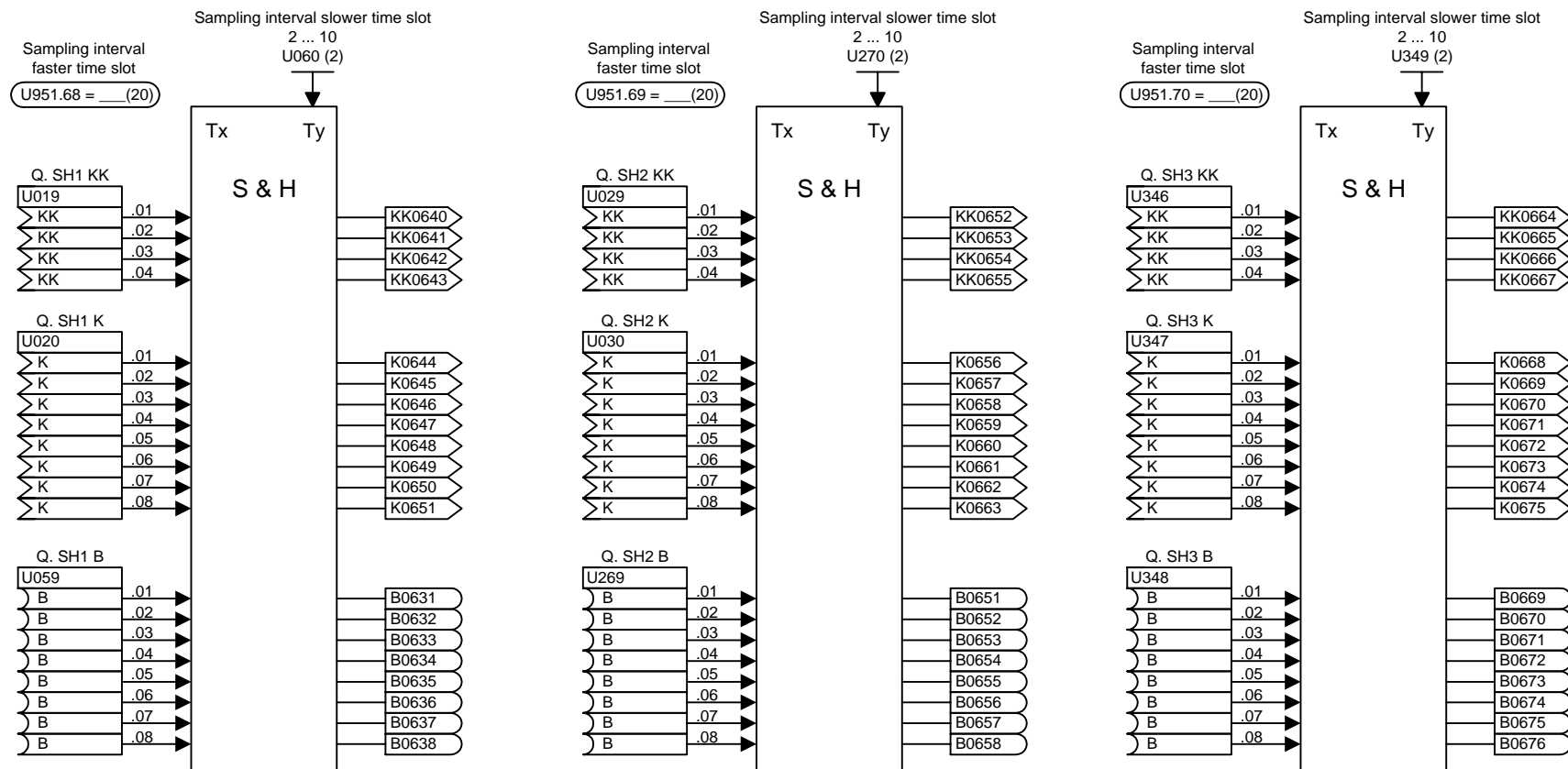
Example: Tab = 3.2 ms
Tp = 10 ms
Implemented period = 6.4 ms

6 sampling time changers for control signals {1 μ s}



The block does not have any logic function. It only transfers a digital signal consistently from a faster sampling time to a slower one. The block ensures that the signal has the same value in the slow sampling time for all "consumers" (signal sinks).

1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_782_e.vsd	Function diagram
Pulse generator, sampling time changers					08.01.02	MASTERDRIVES MC	- 782 -



NOTE:
 The following settings must be made to ensure consistent coupling of values from the main processor C167 to the DSP processor:

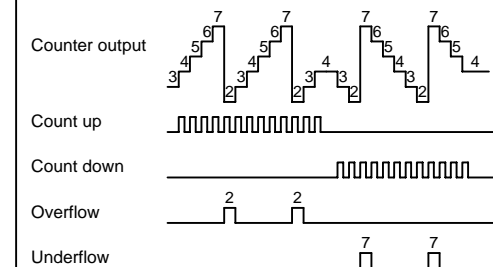
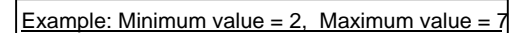
1. U95x.xx = 2
2. U96x.xx = 0
3. Enter S & H block outputs via P026 into coupling channels

1	2	3	4	5	6	7	8
Free blocks	V1.6				fp_mc_783_e.vsd	Function diagram	- 783 -
Sample & Hold					08.01.02	MASTERDRIVES MC	

U951.38 = ____ (20)

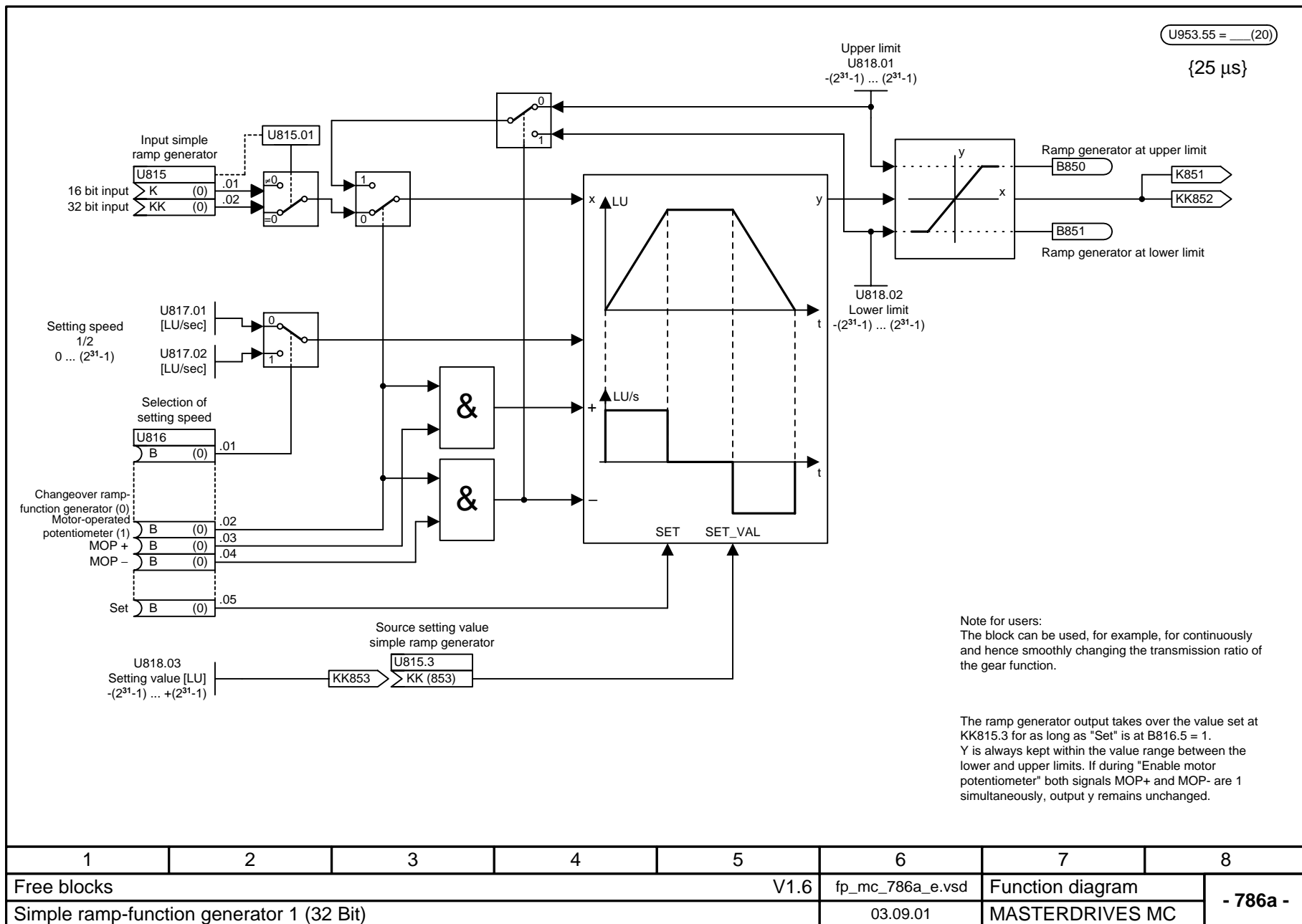
Priority:

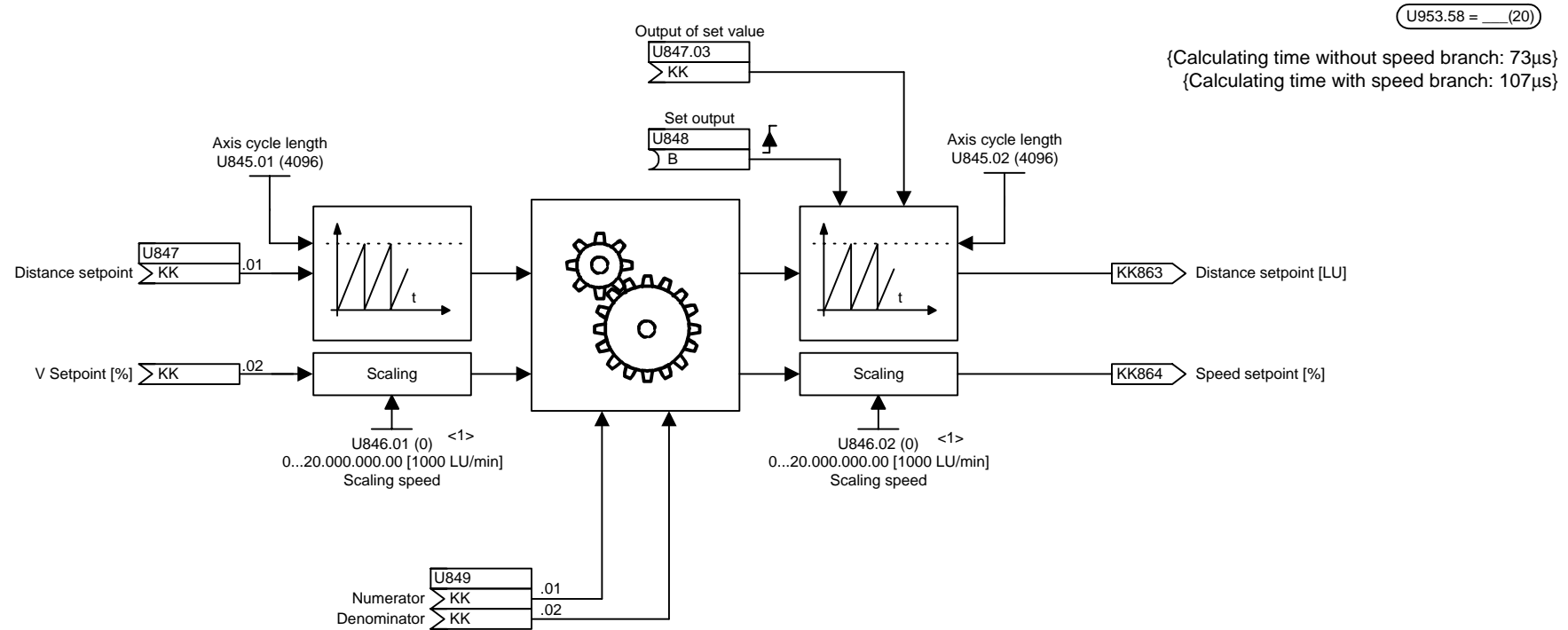
1. Enable counter
2. Set counter
3. Stop counter
4. Count up/down



Attention: The sampling time and sampling sequence of the upstream signal processing has to be taking into account!

1	2	3	4	5	6	7	8	
Free blocks					V1.6	fp_mc_785_e.vsd	Function diagram	- 785 -
Software counter						08.01.02	MASTERDRIVES MC	





<1> The speed branch is only active if U846.01 and U846.02 are not equal to zero.

1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_786d_e.vsd	Function diagram
32-Bit Gear 2					03.09.01	MASTERDRIVES MC	- 786d -


Free blocks

Basic Positioner: Embedding in the Basic Unit

Pulse encoder evaluation for external machine encoder	[255]
Multiturn encoder evaluation for external machine encoder	[270]
Sin/cos encoder evaluation for external machine encoder	[242]

B0071

blocks
[98]



Enable basic positioner
U866.1 = 220 (WE)

Speed precontrol value

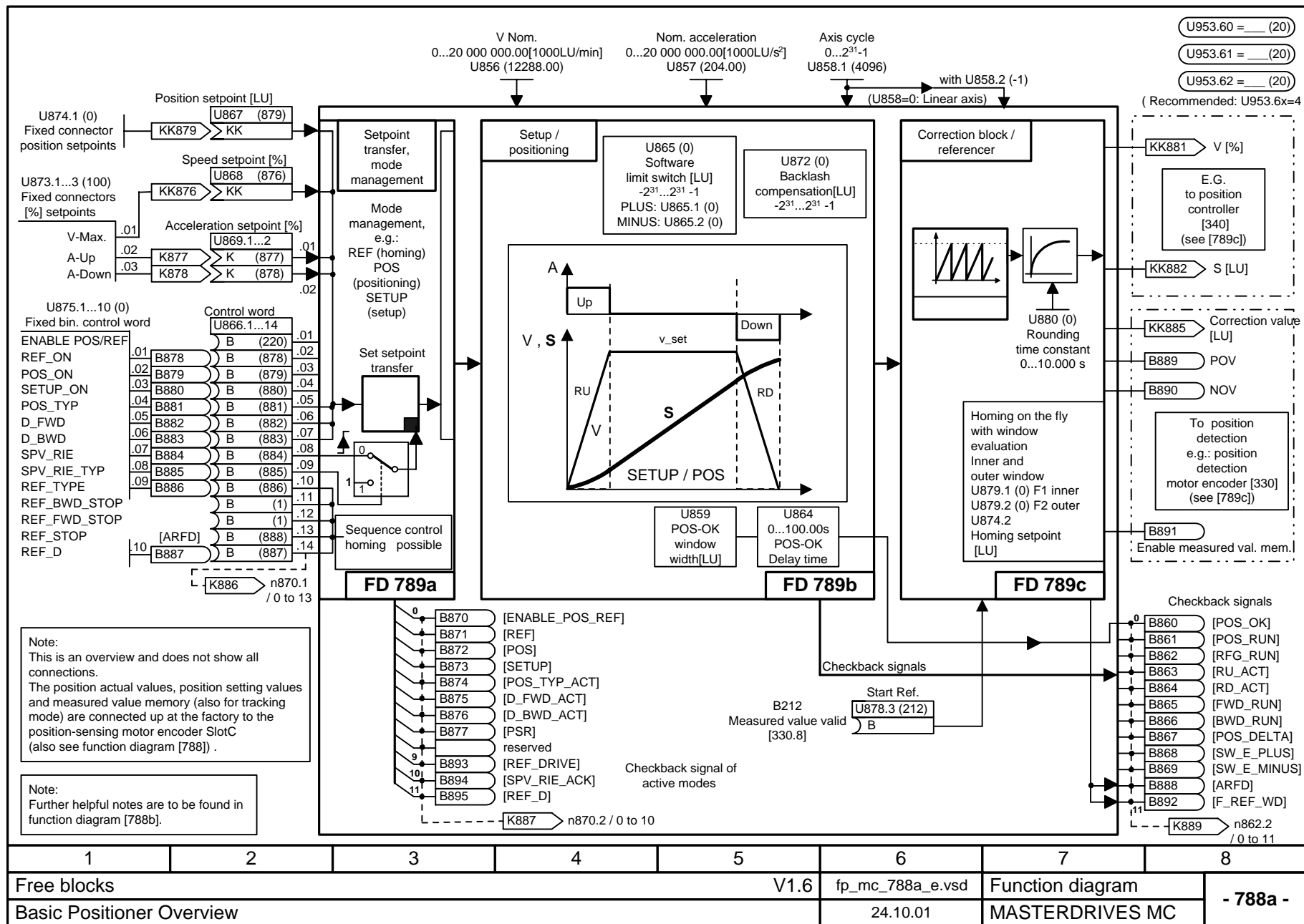
Position setpoint

Basic positioner

[788...789]

The diagram illustrates a speed control system with position feedback. Key components and signals include:

- Enable position controller [340.3]**: Provides an enable signal to the position control block.
- Speed setpoint of ramp gen [320]**: Provides a speed reference signal.
- WE (Weir)**: A signal input to the position control block.
- Enable position control**: A signal input to the position control block.
- P209=881** and **P190=882**: Gain parameters for the position control loop.
- Position control [340]**: A block that processes the speed setpoint and position feedback to generate a reference speed s^* .
- Motor encoder: P194=120** and **External encoder: P194=125**: Provide feedback signals for position and speed.
- Position actual value from position detection [788.4]**: Provides the actual position feedback signal.
- Acceleration precontrol e.g. from position control [340]**: Provides an acceleration reference signal n^* .
- Speed control [360]**: A block that processes the reference speed s^* and the acceleration precontrol signal to generate the actual speed n_{act} .
- Torque control**: Receives the actual speed n_{act} and provides a torque reference to the motor.
- Speed detection [500]** and **Brake control [470]**: Additional system components.



The basic positioner can be used for "simple" positioning tasks.

As can be seen from the "Overview" [788a], the basic positioner consists of three free blocks [789a, b, c] that are set at the factory for the function "Basic positioning **with motor encoder**" and are fully pre-wired among themselves. (The three blocks can also be used singly for further applications.) It is therefore only necessary to change the desired INPUTS ([788a] or in detail on [789a]) AND to wire the outputs ([788a] or in more detail [789c]) as recommended. Enabling (ENABLE POS/REF) is implemented at the factory by means of the checkback signal "Position control enabled", i.e. the basic positioner is enable via the freely selectable source "Enable position controller" (P210, [340.4]). A graphical overview is given in function diagram 788.

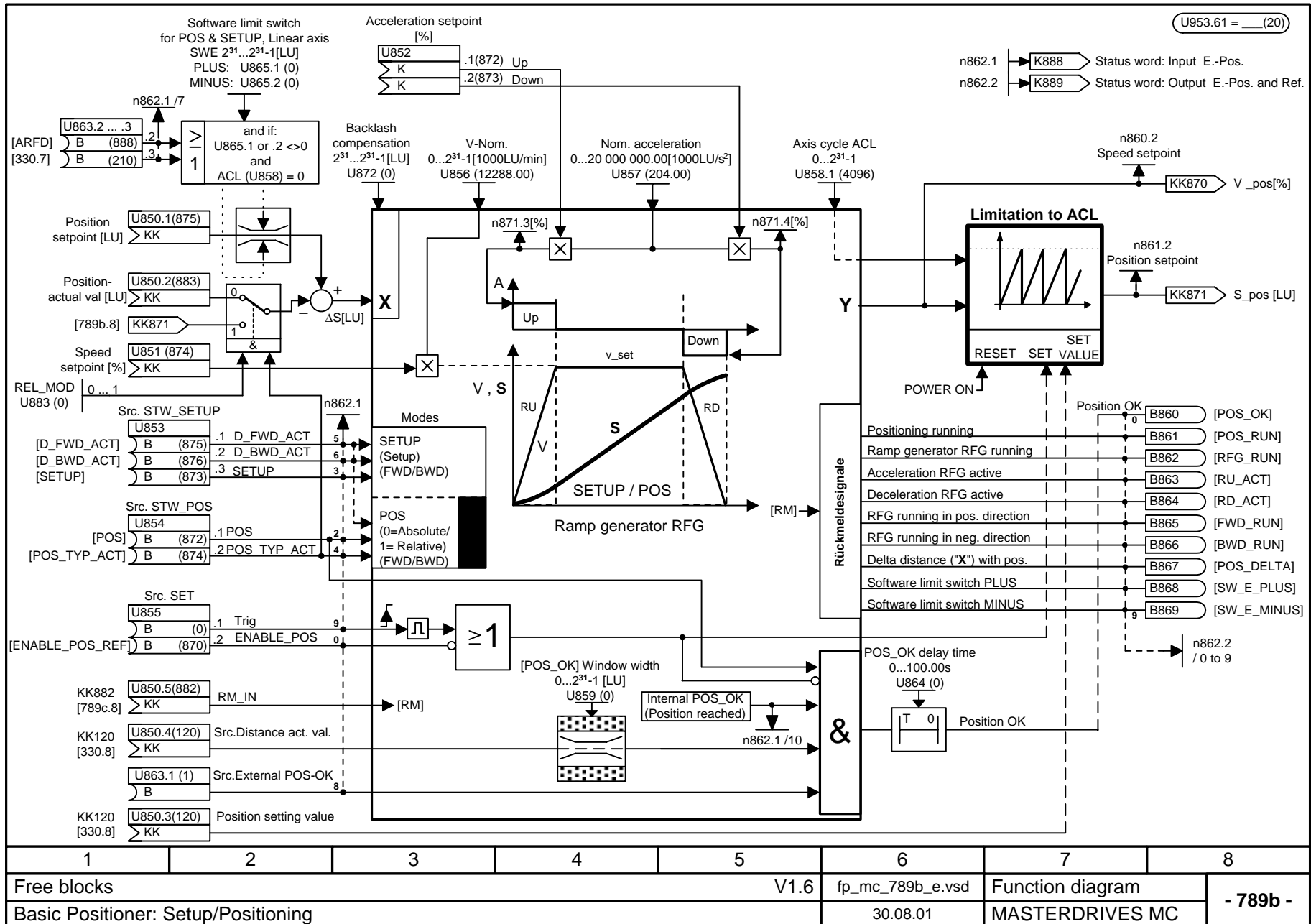
Since almost all variables of the basic positioner (including those between free blocks) are binector inputs/outputs or connector inputs/outputs, the function is controllable both with only one signal and also in parts with the desired process sequence / interlocking. The user must therefore secure the desired function / motion.

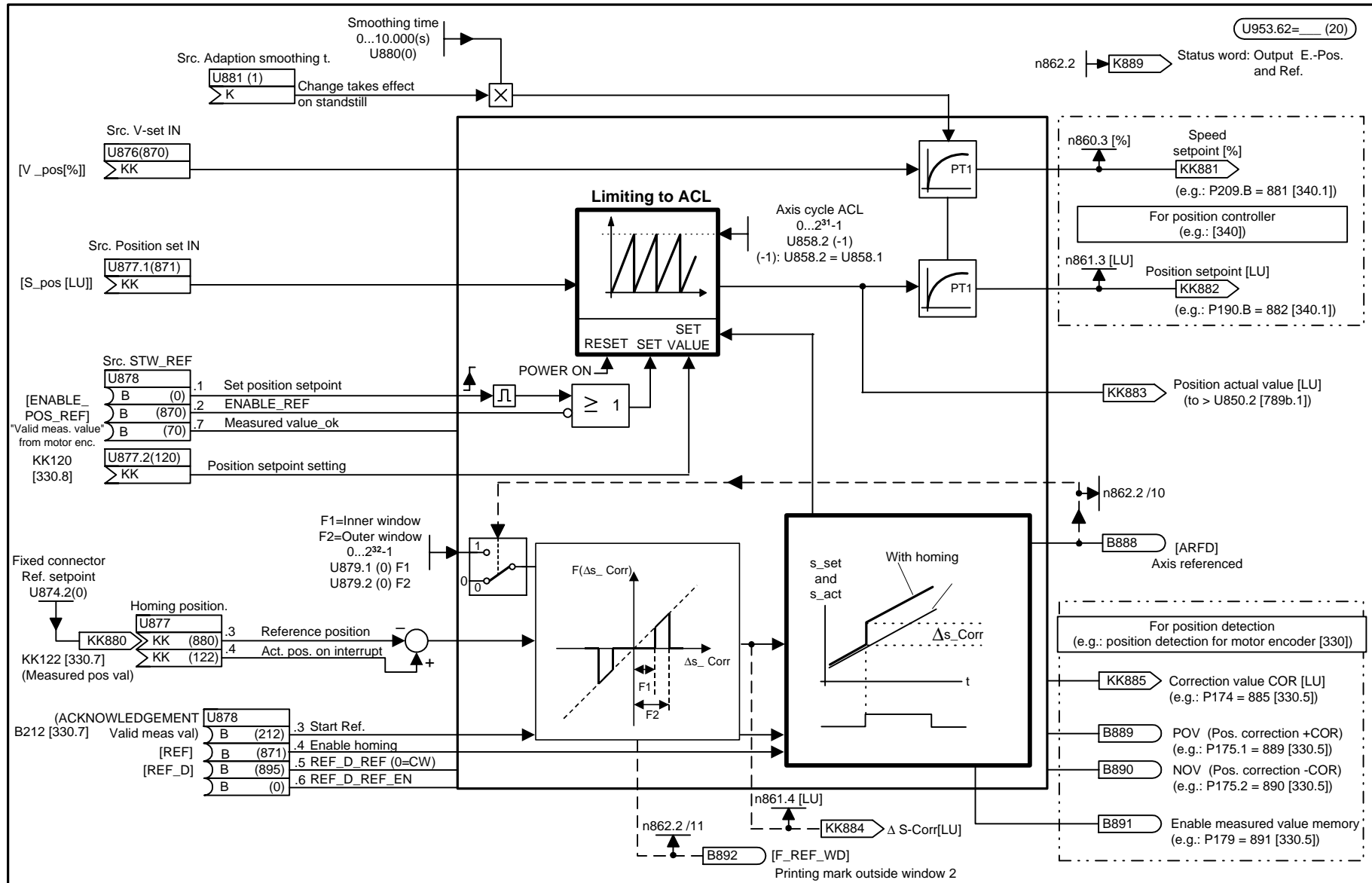
A detailed description of the basic positioner is to be found in Section 7.2.3 of this Compendium MASTERDRIVES MC V1.50.

SHORT NOTES

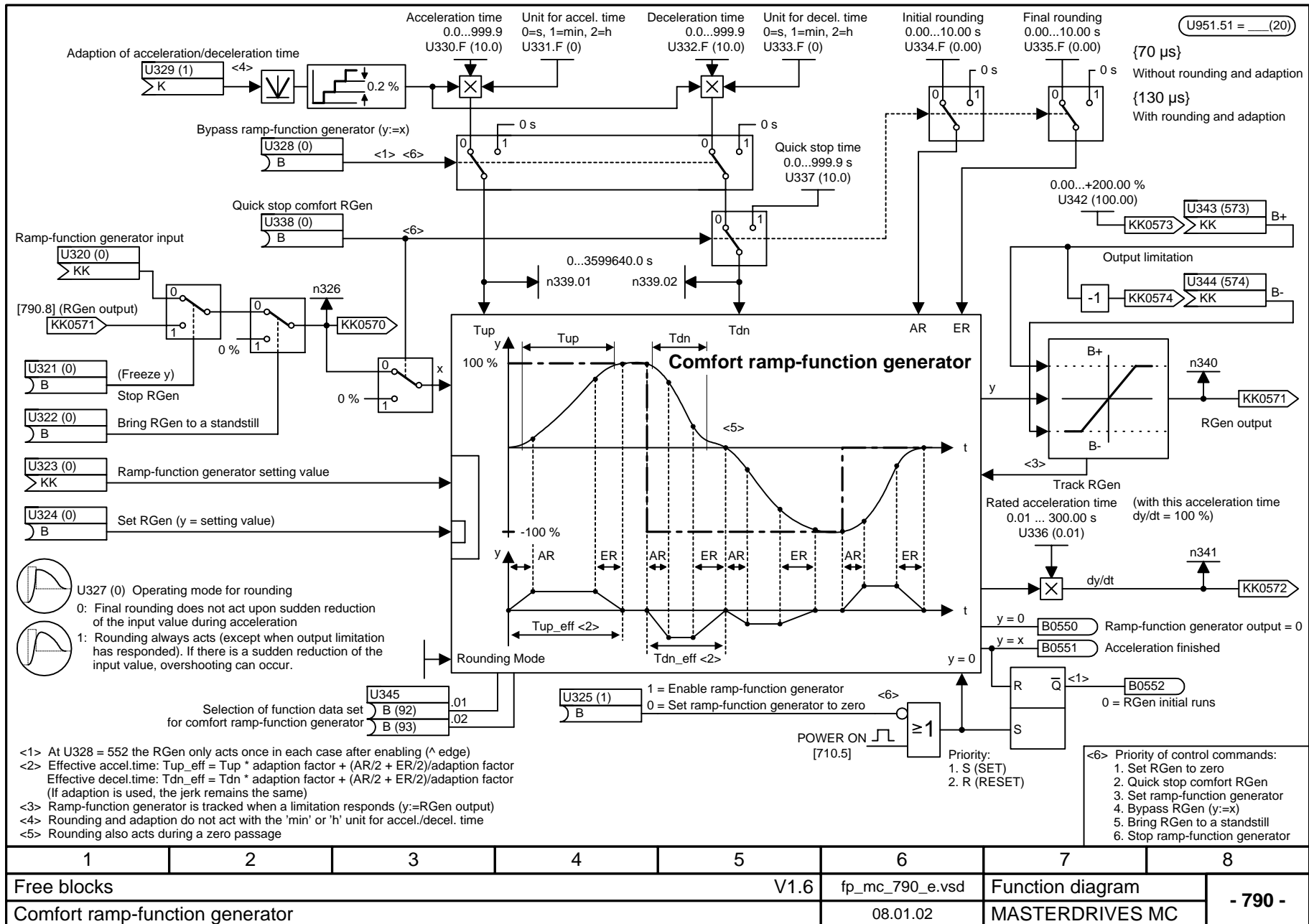
- Concerning use of the basic positioner, insertion of the three free blocks into the T4 time slot is recommended (e.g. on account of the fixed time slot of the position detector motor encoder); i.e. U953.60 = 4, U953.61 = 4, U953.62 = 4
- PRIORITY Modes:
Homing (REF_ON with REF_TYPE = 1) > positioning (POS_ON) > setup (SETUP).
Homing on the fly (REF_ON with REF_TYPE = 0) is always possible, i.e. both in the case of positioning and in the case of setting up.
The transitions occur "on the fly"; the priority always applies, even in the case of simultaneous selection of modes. It is therefore possible to change mode without bringing the axis to a stop.
- "Set-Setpoint-Transfer-Type" (SPV_RIE_TYP) on [789a]:
- In the case of "Constant set-setpoint-transfer" (SPV_RIE_TYP = 1), all set-setpoint inputs are connected through at all times. **No** relative positioning is possible here (KK874 is set to 0 %).
This also makes it possible, for example, to move the axis to a new position without additional binary control simply by changing the position setpoint.
- In the case of "Transfer with positive edge" (SPV_RIE_TYP = 0 and pos. edge via SPV_RIE), the user can set new setpoints with edge control.
- Direction of rotation of the axis: D_FWD, D_BWD, sign position setpoint ([788a] or in more detail [789a]).
In the case of the linear axis (U858=0), the position setpoint determines the direction of rotation of the axis. In the case of relative positioning it is the sign of the position setpoint that determines the direction of rotation. In the case of absolute positioning of the rotary axis and setup, control binectors D_FWD and D_BWD determine this. (Both HIGH: Axis is stopped // Both LOW with abs.-pos.-rotary-axis : shortest distance).
In the case of homing, D-FWD and D_BWD determine the starting direction.
- In the case of relative positioning, "distance to go" does not apply; i.e. renewed POS_ON or SPV_RIE causes renewed travel to an existing relative position setpoint.
- Software limit switches [789b.1]: Please note that the software limit switches need only be activated for the linear axis (U858 (AZL) = 0) and via U865 (end zones).
Furthermore, the software limit switches are arranged at the factory for activation via freely parameterizable input U863.2,3 with "Axis homing" [ARFD] OR "Homing point captured" (B210, [330.7] - cannot be changed by the user.
- Standardizations: As with technology option F01 (Section 9 of this Compendium MASTERDRIVES MC), the same applies here mutatis mutandis, e. g. factory default configuration with motor encoder:
V nom. = Resolution x position-feedback scaling factor x reference speed x 10⁻³
with: V nom.: U856 [788a or 789b] and P205 [340.3] // Resolution: P171 [330.3] // position-feedback scaling factor: P169, P170 or P180, P181 [330.3] // reference speed: P353 [20.5]
- The basic positioner itself generates **no** fault or warning messages (but these can be configured in basic unit functions or other free blocks).
For the user, this opens up a wide variety of solutions with regard to type of motion; naturally, the types of motion in question must also yield the desired inputs and interlockings.

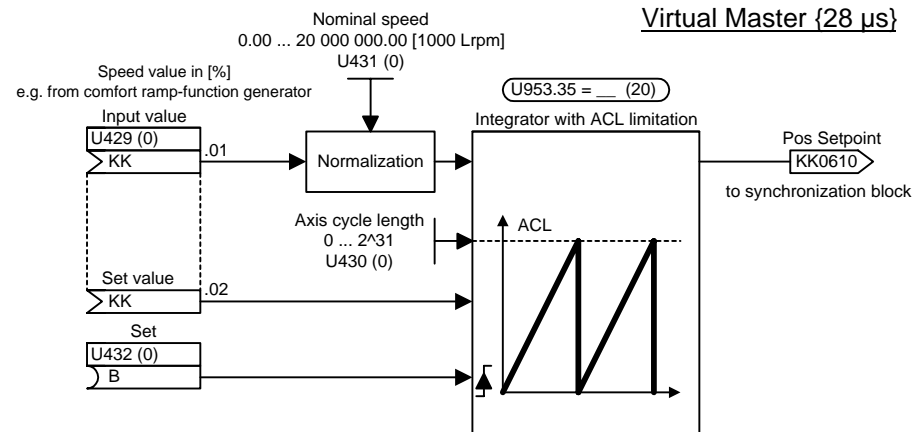
1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_788b_e.vsd	Function diagram
Basic Positioner: General Notes					08.01.02	MASTERDRIVES MC	- 788b -



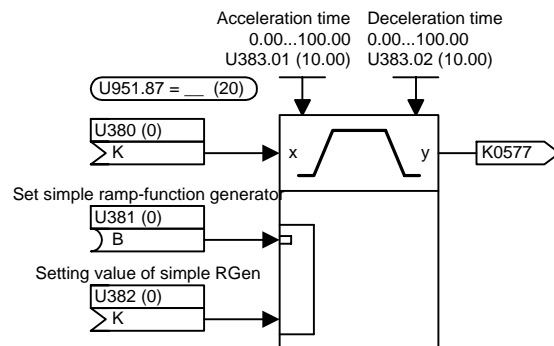


1	2	3	4	5	6	7	8
Free blocks					V1.6	Function diagram	
Basic Positioning: Correction Block / Homing					fp_mc_789c_e.vsd	MASTERDRIVES MC	
					24.10.01	- 789c -	





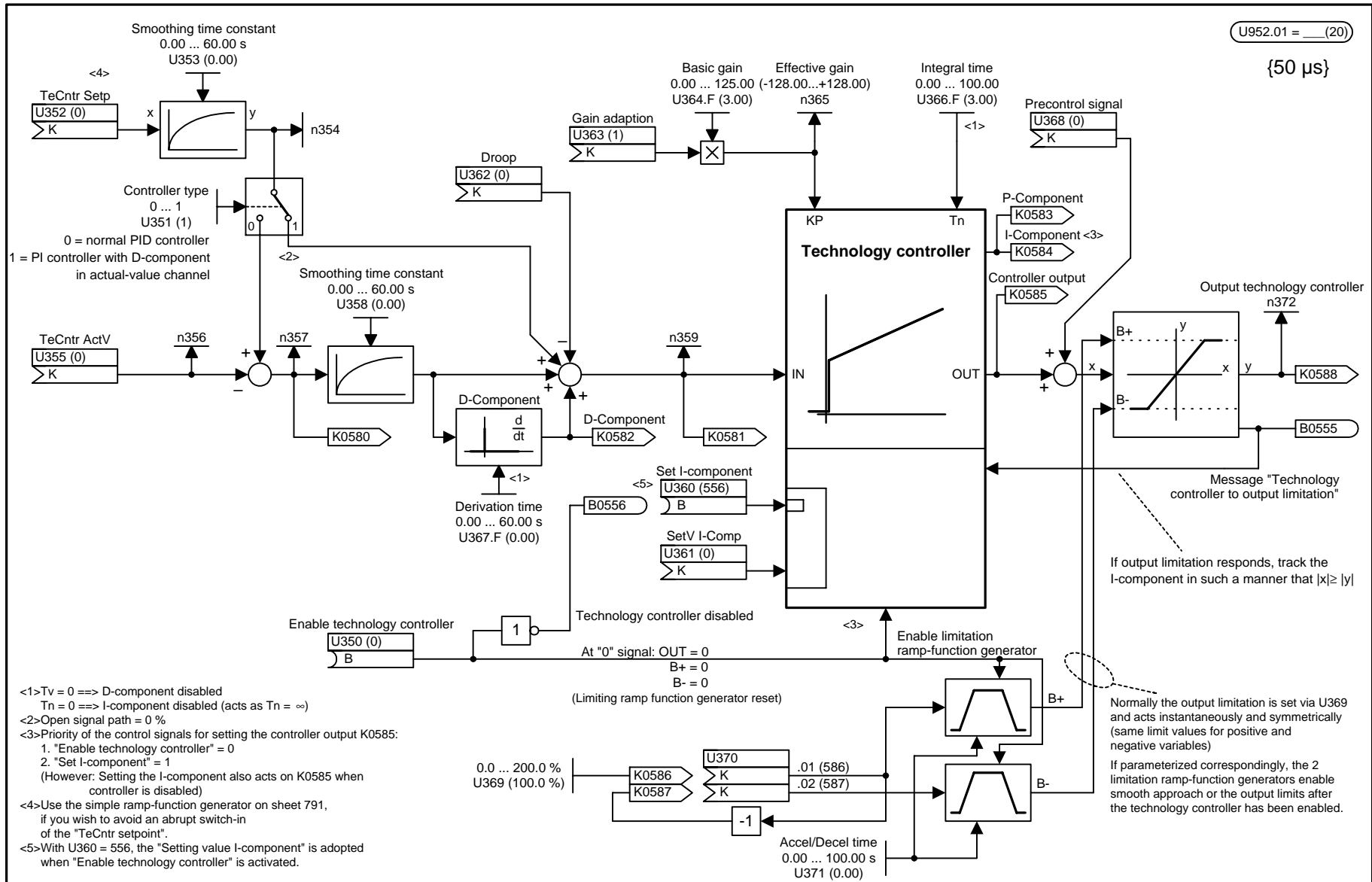
Simple ramp-function generator {12 μ s}



If you wish to use the simple ramp-function generator as a setpoint ramp function generator for the technology controller, the following signal connection can be recommended:

- Output of simple ramp-function generator ==> Setpoint input of technology controller (U352 = 577) [792.1]
- Technology controller disabled ==> Set simple ramp-function generator (U381 = 556) [792.3]
- Actual-value technology controller ==> Setting value of simple ramp-function generator (U382 = value of U335) [792.1]

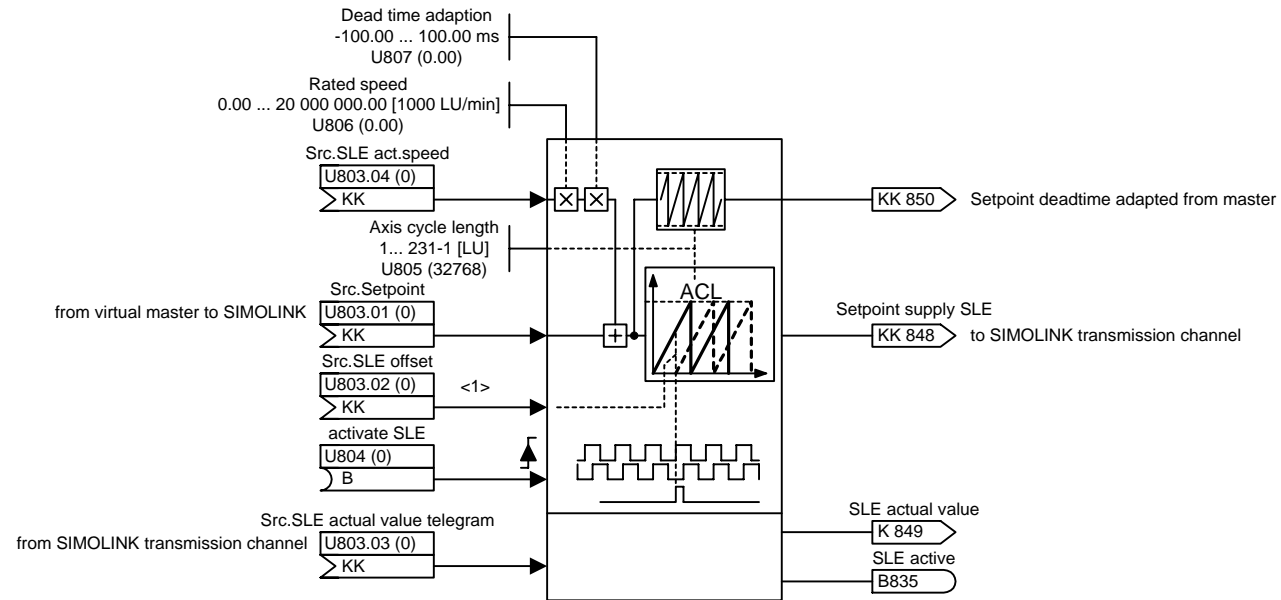
1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_791_e.vsd	Function diagram
Simple ramp-function generator, virtual master					03.09.01	MASTERDRIVES MC	- 791 -



1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_792_e.vsd	Function diagram
Technology controller					08.01.02	MASTERDRIVES MC	- 792 -

Function Block, Setpoint Supply SIMOLINK Encoder SLE

U953.28 = __ (20)



Data format setpoint:

31		17	16	15		1	0
Setpoint (0...32767)				x	Setting value (0...32767)		Bit

Setpoint: Position setpoint of the master axis

Setting value: Position of the zero pulse referred to the master axis

Bit: 0 = SLE deactivated; 0->1 Load SLE with setting value; 1 = SLE active

Data format actual value:

31		17	16	15		1	0
Actual value (0...32767)				x	x		Bit

Actual value: SLE actual value

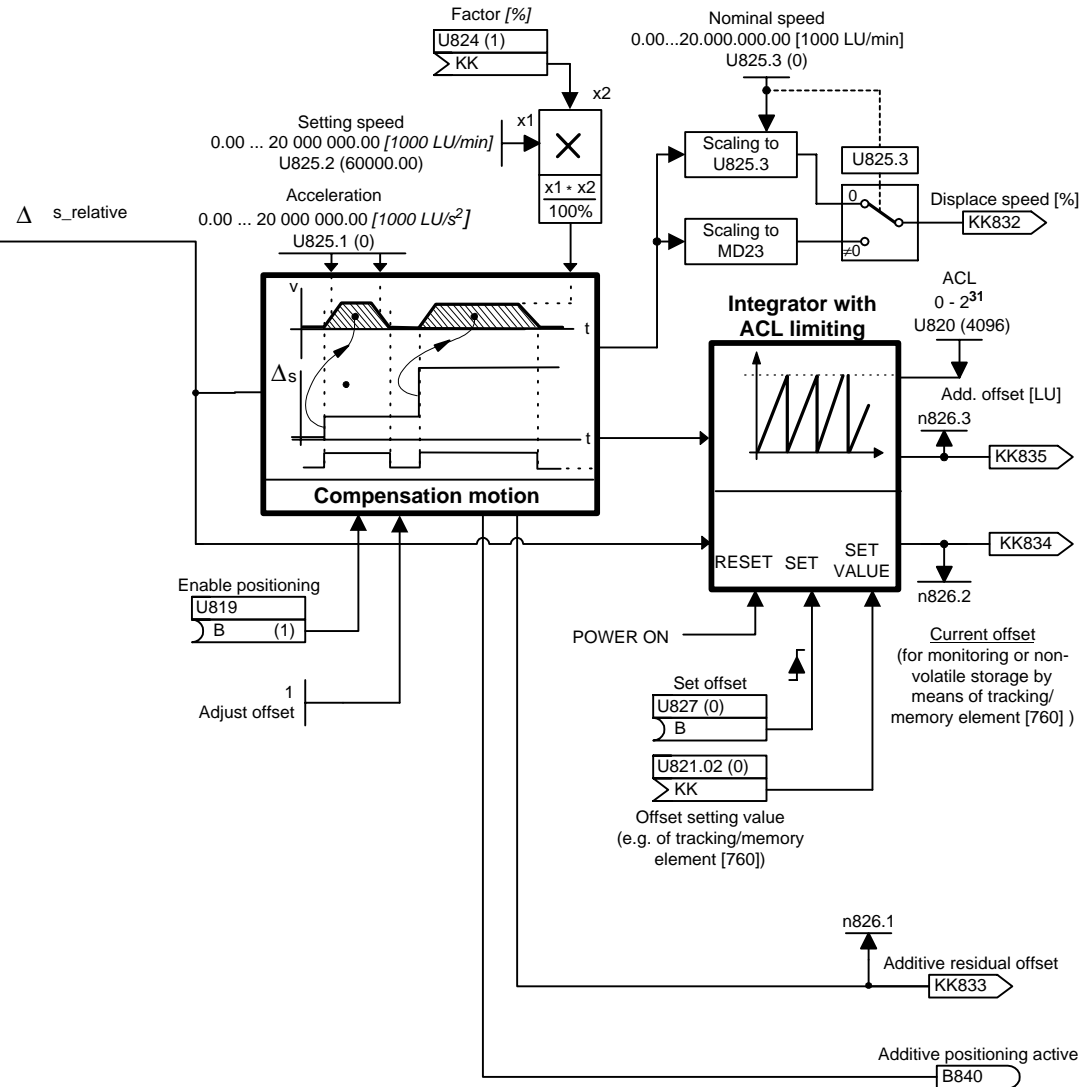
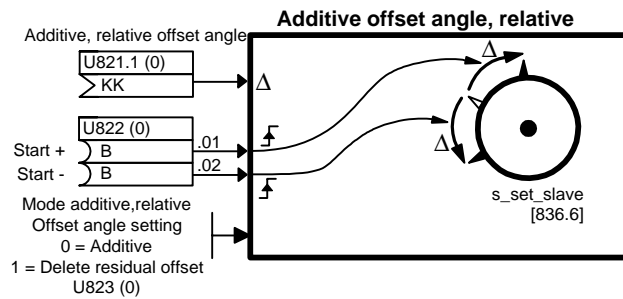
Bit: 0 = Not initialized; 1 = SLE active

<1>
Offset gives the position of the zero pulse
relative to the setpoint (U803.01).
With rising edge at U804.

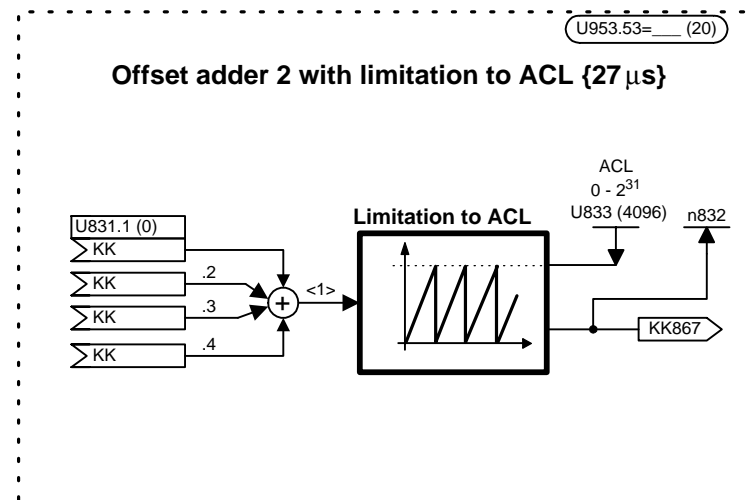
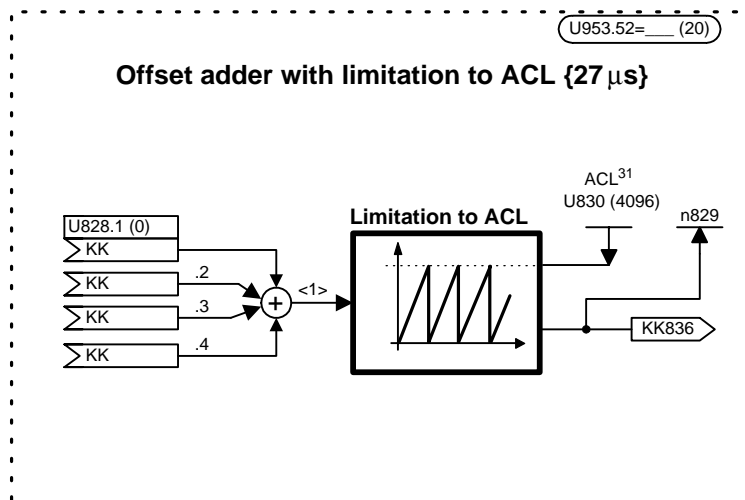
The function block is used for simple setpoint correction of the
SIMOLINK Encoder SLE (Order No. 6SX7005-0AG0). The
Handbook "SLE/SLE-DP SIMOLINK Encoder" describes the
SIMOLINK Encoder and the function block and also contains
notes on configuring.

1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_793_e.vsd	Function diagram
Setpoint Supply SIMOLINK Encoder SLE (introduced with V1.4)					08.01.02	MASTERDRIVES MC	

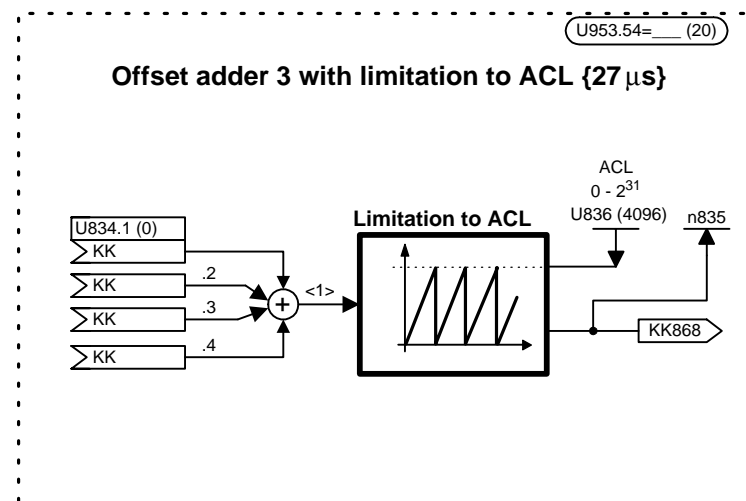
{Calculating time in no-load status: 35μs}
 {Calculating time during compensation movement after start +/-: 84μs}



1	2	3	4	5	6	7	8
Free blocks				V1.6	fp_mc_794_d.vsd	Function diagram	
Additive Relative Offset Angle Setting(introduced with V1.4)					03.09.01	MASTERDRIVES MC	- 794 -



<1> The sum of the four input values must be in the range of $(-2^{31}+1)$ to $(2^{31}-1)$.

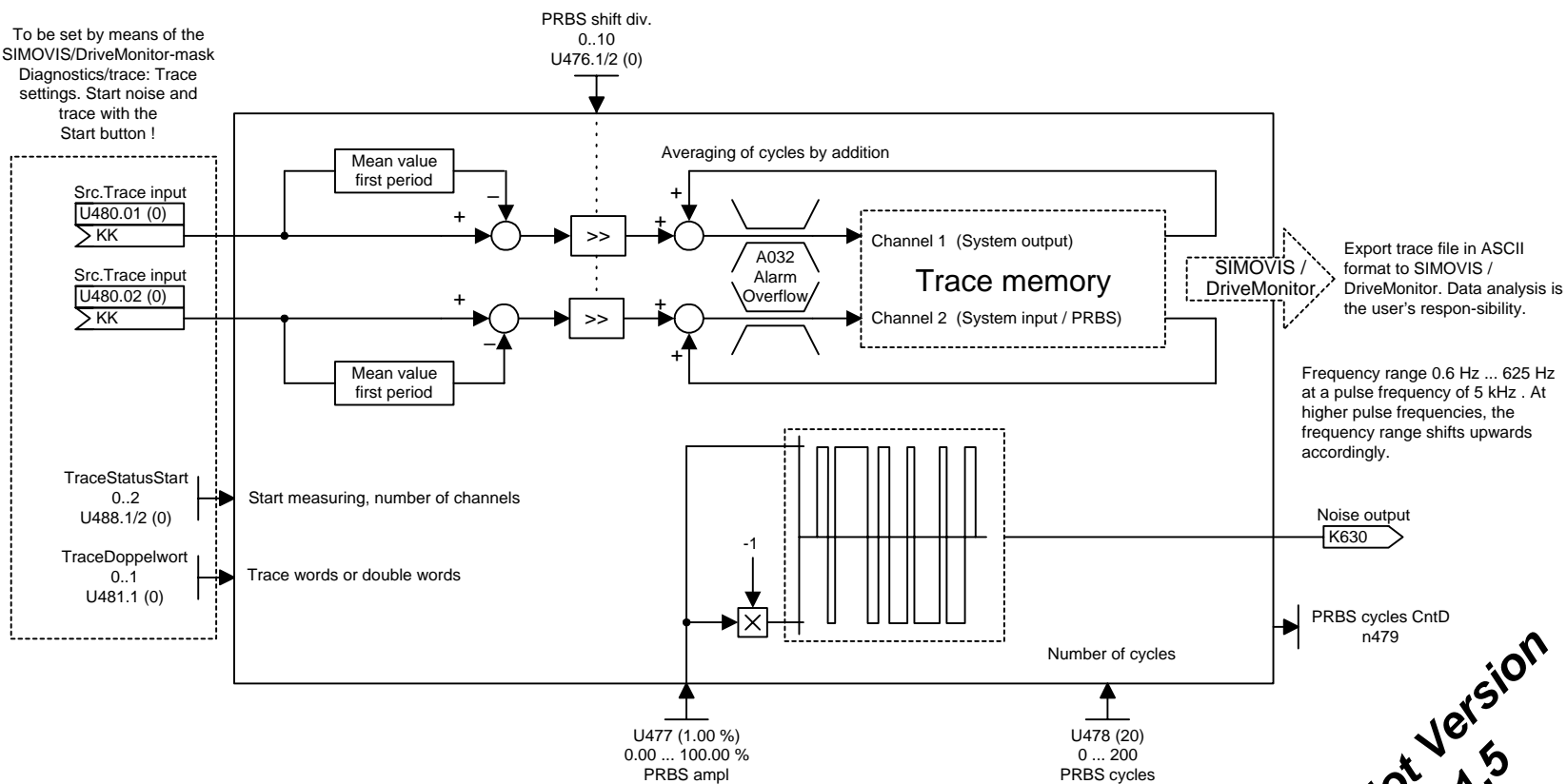


1	2	3	4	5	6	7	8
Free blocks					V1.6	fp_mc_794_d.vsd	Function diagram
Offset Adder with Limitation to ACL					03.09.01	MASTERDRIVES MC	- 794a -

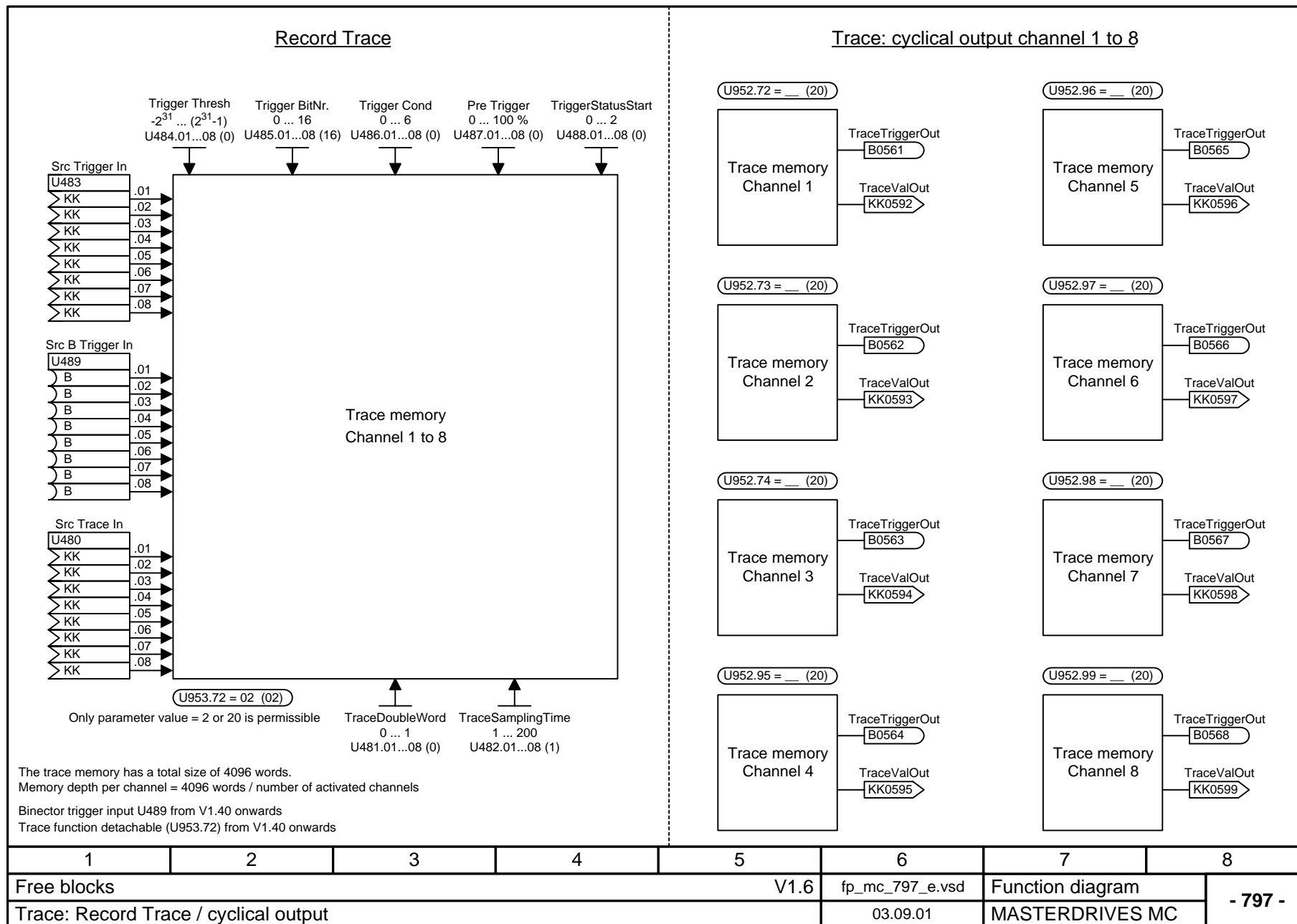
U953.70 = ____ (20)

Only the values 20 and 02 are permitted.
To avoid overlaps, the usual trace must
be switched off with U953.72 = 20.

To be set by means of the
SIMOVIS/DriveMonitor-mask
Diagnostics/trace: Trace
settings. Start noise and
trace with the
Start button !

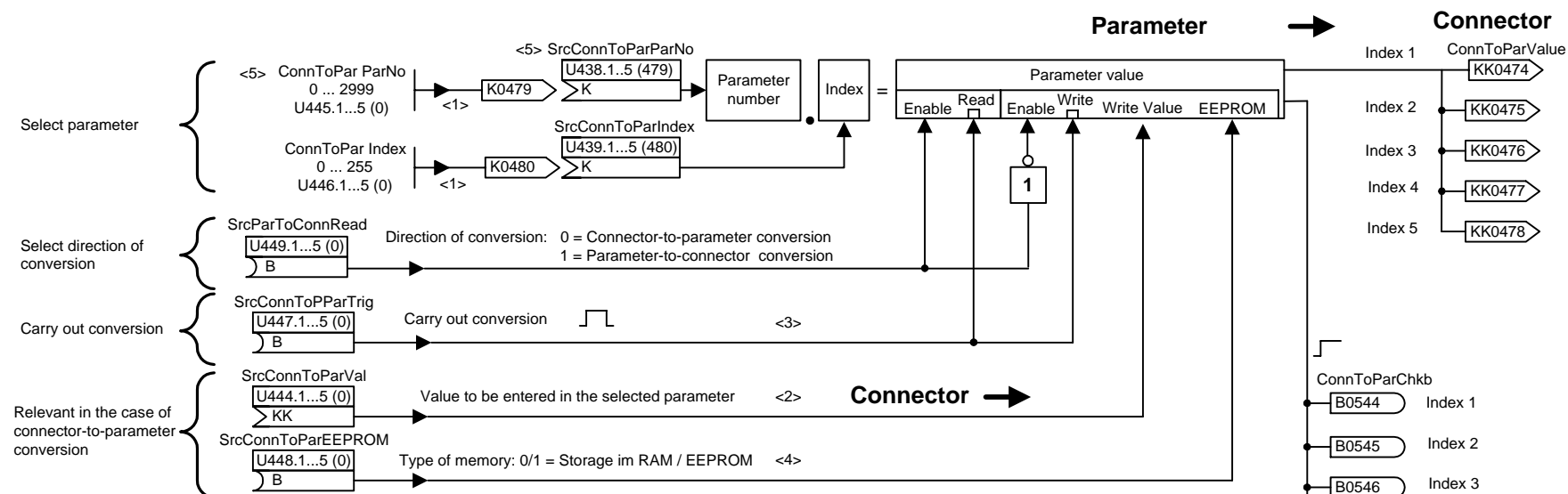


1	2	3	4	5	6	7	8
Free blocks				V1.6	fp_mc_796_e.vsd	Function diagram	- 796 -
PRBS (Pseudo Random Binary Sequence) - Signal with Trace					14.11.01	MASTERDRIVES MC	



5 Connector-to-parameter/ parameter-to-connector converters

Block is not calculated in T6!
Time of processing of block is not defined!



<1> Internally, the parameter numbers or the indices of all five index places (1 to 5) are passed on via the connector. Only the value of the first index is displayed via the connector.

<2> Word parameter should be written via connectors, and double-word parameters via double connectors.

<3> Consult the parameter list in the Compendium to find out the operating states in which a parameter change can be made.

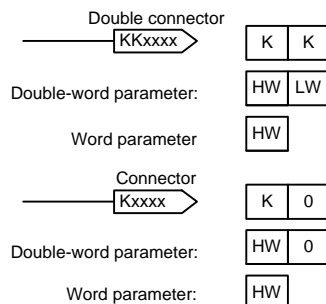
<4> In the case of dynamic signals, the RAM must be used for storage (a parameter can only be written 100 000 times in the EPROM)

<5> U and n parameters are addressed with Uxxx = 2xxx and nxxx=2xxx.

Important:

Parameters must be specified in decimal form (incl. decimal places) and are signalled back in decimal form as well (PKW normalization).

Value entered in parameter <2>:



① Example of connector-to-parameter conversion:

The value of connector K0409 should be fed to parameter U279.02. Alteration in the RAM ==>
- U445.1=2279 (parameter number)
- U446.1=2 (index)
- U449.1=0 (connector-parameter conversion)
- U447.1=1 (permanent transfer)
- U444.1=409 (source connector)
- U448.1=0 (write into the RAM)

② Another example of connector-to-parameter conversion:

The parameter "Source position actual-value" P194 is to be set to 125 (corresponds to position actual-value of ext. encoder) ==>
- U445.1 = 194
- U446.1 = 1
- U449.1 = 0
- U447.1 = 1
- U444.1=409 (source connector)
- U448.1=0 (write into the RAM)

For this purpose, set U009 = 293 (= 125 Hex, as source connector)!

Please note that the values of "source" parameters are always hexadecimal values. Thus in U009 the converted decimal value has to be provided.

③ Example of parameter-to-connector conversion:

Parameter P103 is to be connected to connector KK0477 ==>
- U444.4 = 477
- U445.4=103 (parameter number)
- U446.4=0 (non-indexed parameter)
- U449.4=1 (parameter-connector conversion)
- U447.4=1 (permanent output)

1	2	3	4	5	6	7	8
Free blocks	V1.6				fp_mc_798_e.vsd	Function diagram	- 798 -
Connector-to-parameter converter					24.10.01	MASTERDRIVES MC	