

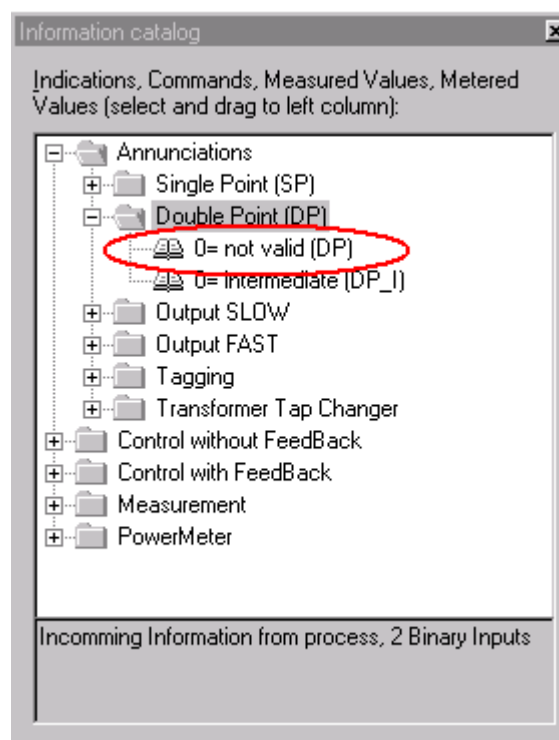
## Graphical current indicator

### Application

This paper explains how to implement a graphical indication of the measured current value in the control display. Either the greatest of the three phase currents or one particular phase current can be displayed. Both options will be explained.

### Implementation

If only one phase current must be displayed, a new information group in the I/O matrix, in this example called diagram, must be created. 10 double point annunciations are created in this group. These are allocated with source CFC and are also routed to destination default display. These will be used for the 10 indication stages of the monitored current.



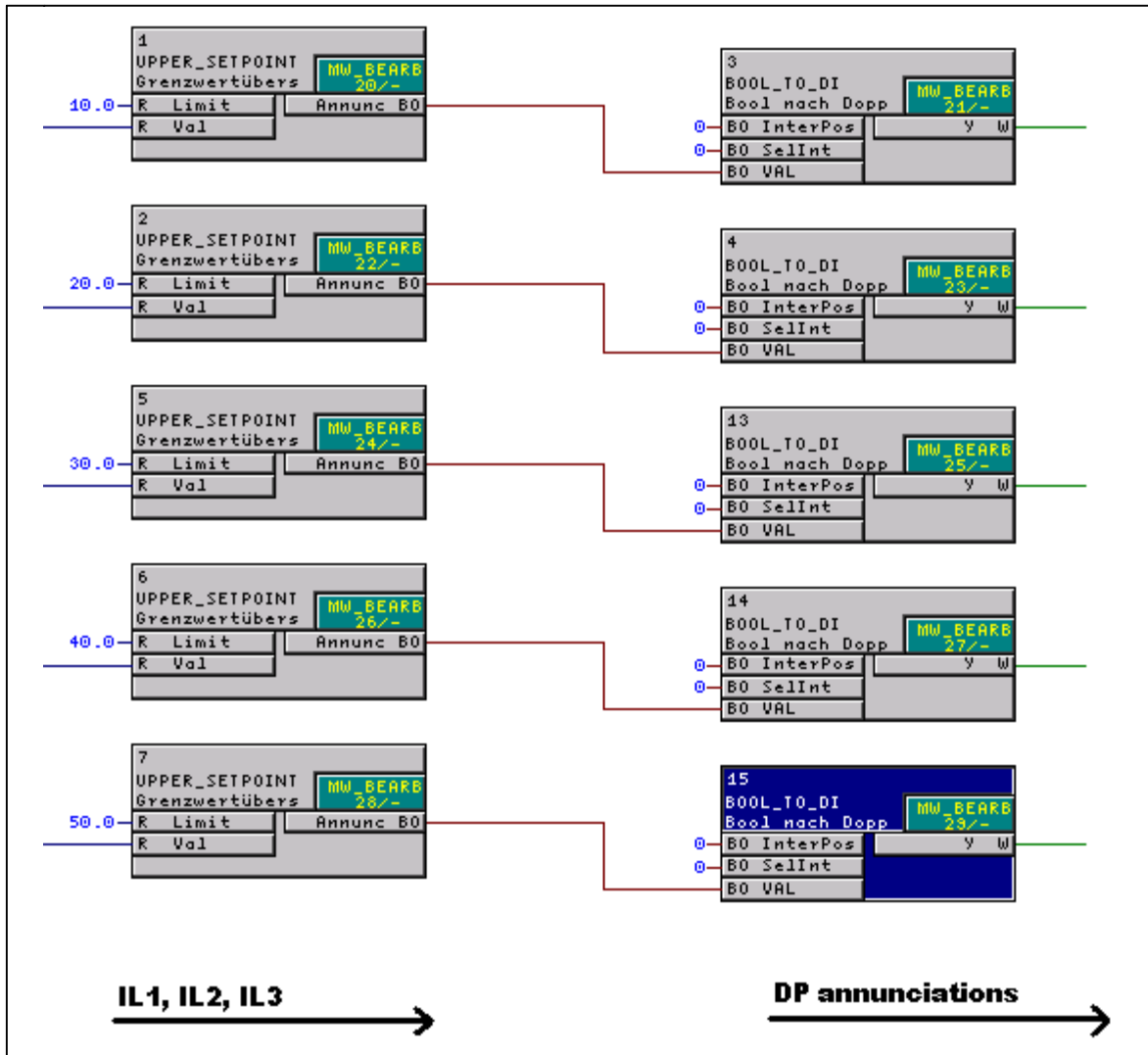
Picture 1: Information catalogue

	Information				Quelle		Ziel										
	Nr	Displaytext	Langtext	Typ	BE	F	C	BA	LE	P			S	C	B	ST	
										B	E	N			A	G	
Device							*						*	*			
P.System Data 1										*				*			
Osc. Fault Rec.							*			*			*	*			
P.System Data 2										*	*	*	*	*			
Overcurrent										*	*	*	*	*			
Directional O/C										*	*	*	*	*			
Measurem.Superv										*			*				
Fault Locator										*	*	*	*	*			
Cntrl Authority										*			*				
Control Device							*			*	*	*	*	*	*	*	*
Process Data										*	*	*	*	*			
Diagramm	IL10	Schaltzust.: 0=nicht aktuell (DM)	DM		X					KG							X
	IL20	Schaltzust.: 0=nicht aktuell (DM)	DM		X					KG							X
	IL30	Schaltzust.: 0=nicht aktuell (DM)	DM		X					KG							X
	IL40	Schaltzust.: 0=nicht aktuell (DM)	DM		X					KG							X
	IL50	Schaltzust.: 0=nicht aktuell (DM)	DM		X					KG							X
	IL60	Schaltzust.: 0=nicht aktuell (DM)	DM		X					KG							X
	IL70	Schaltzust.: 0=nicht aktuell (DM)	DM		X					KG							X
	IL80	Schaltzust.: 0=nicht aktuell (DM)	DM		X					KG							X
	IL90	Schaltzust.: 0=nicht aktuell (DM)	DM		X					KG							X
	IL100	Schaltzust.: 0=nicht aktuell (DM)	DM		X					KG							X

Picture 2: input/output matrix

Now the CFC -chart must be programmed, this will be done in two charts. Each of the charts contains 5 upper set point gates and 5 BOOL\_TO\_DI gates. Each indication stage makes use of one pair of these gates. The upper threshold gates are programmed in steps of 10 percent, starting at 10 and ending at 100. This threshold value is connected to the R LIMIT input of the gate. The second input to the upper set point gates is the measured value, which is connected to R VAL on all the gates. The user may decide which one of the available measured currents this should be. The output of the upper set point gates is connected to the BO VAL input of the respective BOOL\_TO\_DI gates. The other two inputs are 0. Thereby the function of the BOOL\_TO\_DI gate is determined as shown in the table below. The output signals of the BOOL\_DI gates are routed to the previously defined input/output matrix double point annunciations in ascending sequence from the lowest to the highest. The CFC chart was divided into two equal parts because not all gates can be inserted in one chart. Only one half is shown here.

Sellnt	InterPos	VAL	Y	Bedeutung für DM_S	Bedeutung für DM
0	0	0	0001	AUS	AUS
0	0	1	0002	EIN	EIN
0	1	0	0001	AUS	AUS
0	1	1	0002	EIN	EIN
1	0	0	0000	STOER (Störstellung 00)	nicht aktuell
1	0	1	0000	STOER (Störstellung 00)	nicht aktuell
1	1	0	0003	STOER (Störstellung 11)	STOER
1	1	1	0003	STOER (Störstellung 11)	STOER

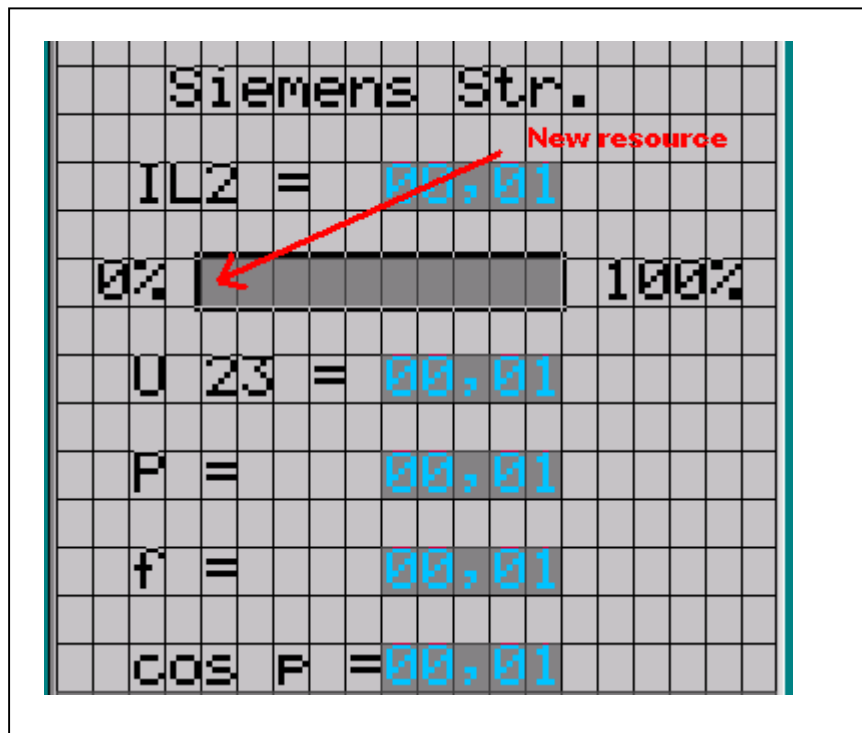


Picture 3: CFC chart-one of two

Information from the CFC-chart can now be used for indication in the default display. A new resource and a new element must be created. The resource consists of a bar in the display which can assume the grey (transparent) or black ON condition. It is defined by a double point annunciation. In the graphic display, 10 such resource elements are positioned next to each other as shown in picture 5. Plain text 0 percent and 100 percent can be written at the left and right hand side of the 10 resource elements. The 10 output signals from the CFC-chart are allocated in turn to the 10 resources in the default display again in ascending order.



Picture 4: New resource construction



Picture 5: Default display