

ABB Labrapport

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Oppgave 1

Height

Width

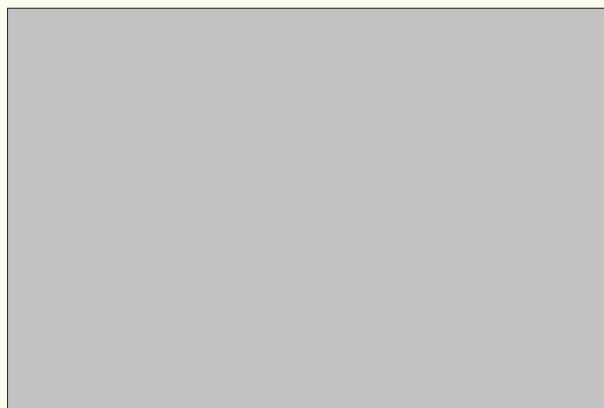
Diag: 1.41



Height

Width

Diag: 14.42



Control Module Type - Rectangle06.DynRectangle_Ctrl

Editor Edit View Insert Tools Window Help

	Name	Data Type	Direction	FD Port	Initial Value	Description
1	height	real	out	yes	0.6	OUT rectangle height
2	width	real	out	yes	0.6	OUT rectangle width
3	diag	real	in	yes	0	IN rectangle diagonal
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

Parameters Variables External Variables Function Blocks

Control Module Type - Rectangle06.DynRectangle_ST_1

Editor Edit View Insert Tools Window Help

	Name	Data Type	Direction	FD Port	Initial Value	Description
1	height	real	in_out	yes	0.6	IN rectangle height
2	width	real	in_out	yes	0.6	IN rectangle width
3	diag	real	in_out	yes	0	OUT rectangle diagonal
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

Parameters Variables External Variables Function Blocks

```

Upper.x := 0.5*width;
Lower.x := 0.5*width;
Upper.y := 0.5*height;
Lower.y := 0.5*height;

diag := sqrt(height**2 + width**2);

```

- 1) System som ble laget ved å gjennomføre Rectangle tutorial.
- 2) Control Module – En modul laget for å styre et system, bruker control module types som er et enkelt element i modulen. I vårt tilfelle har vi en control module med input til height og width, med to control module types i rektangelet og boksen til input. Control module bruker interaction mellom parameterne til forskjellige control module types.

Oppgave 2

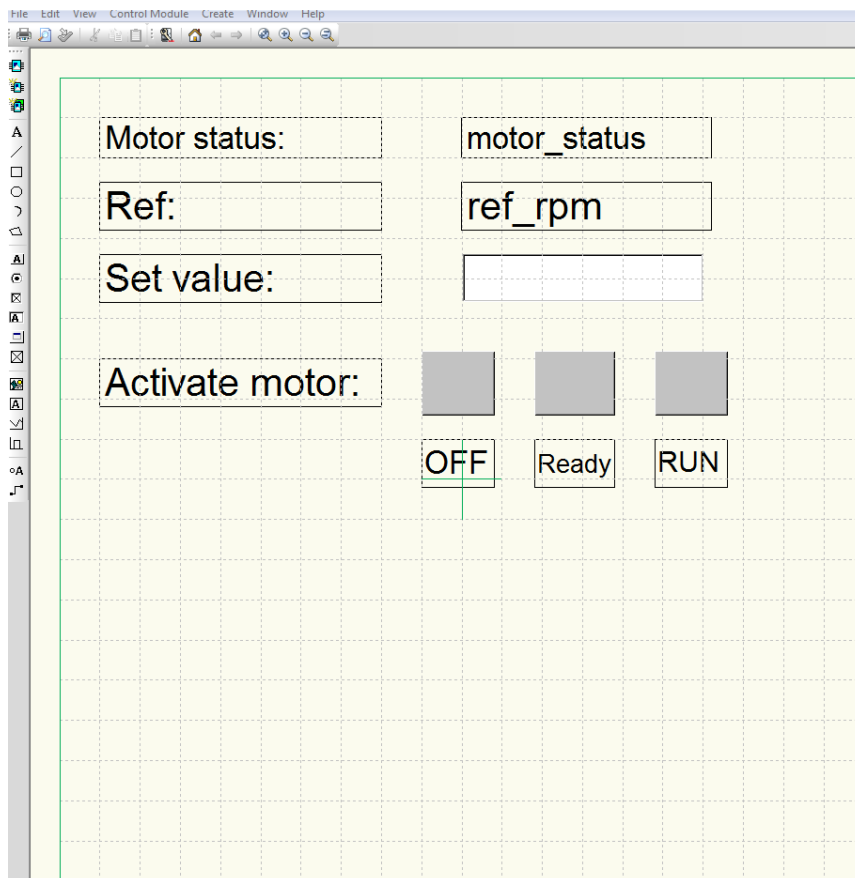
Application_1								
Editor Edit View Tools Window Help								
Name	Current Value	Data Type	Attributes	Initial Value	I/O Address	I/O Description	Access Variables	Description
[-] M1_DP		RealIO	retain		Controller_1.0.11.1.1			
[-] M2_Pressurestate		BoolIO	retain		Controller_1.1.3.1.1			
[-] M3_Tempswitch		BoolIO	retain		Controller_1.1.3.1.2			
[-] M4_PT100		RealIO	retain		Controller_1.0.11.1.2			
[-] Load_on_off		BoolIO	retain		Controller_1.1.3.2.1			
[-] Value	true	bool	retain displayvalue					Value in th
[-] IOValue	true	bool	retain					Value from
[-] Forced	false	bool	retain					Tells if the
[-] Status	16#C0	dword	retain	16#00C0				Error statu
[-] M8_Load		RealIO	retain		Controller_1.0.11.1.2			
[-] Main_status_word		DintIO	retain		Controller_1.1.2.0.8			
[-] Main_control_word		DintIO	retain		Controller_1.1.2.0.10			
[-] Value	15	dint	retain displayvalue					Value in th
[-] IOValue	15	dint	retain					Value from
[-] Forced	false	bool	retain					Tells if the
[-] Status	16#C0	dword	retain	16#00C0				Error statu
[-] Speed_reference		DintIO	retain		Controller_1.1.2.0.9			
[-] Speed_Setvalue		DintIO	retain		Controller_1.1.2.0.11			
[-] PvCC		ControlConnection	retain					
[-] RegCC		ControlConnection	retain					
[-] TempSetCC		ControlConnection	retain					
[-] TempSet	0.0	real	retain					
[-] Global Variables								
[-] Variables								

Row 7, Col 1 800xAService

Endringer gjort i Load_on_off og i Main_control_word.

Oppgave 3

Motor



Control Module Type - Motor06.motorctrl

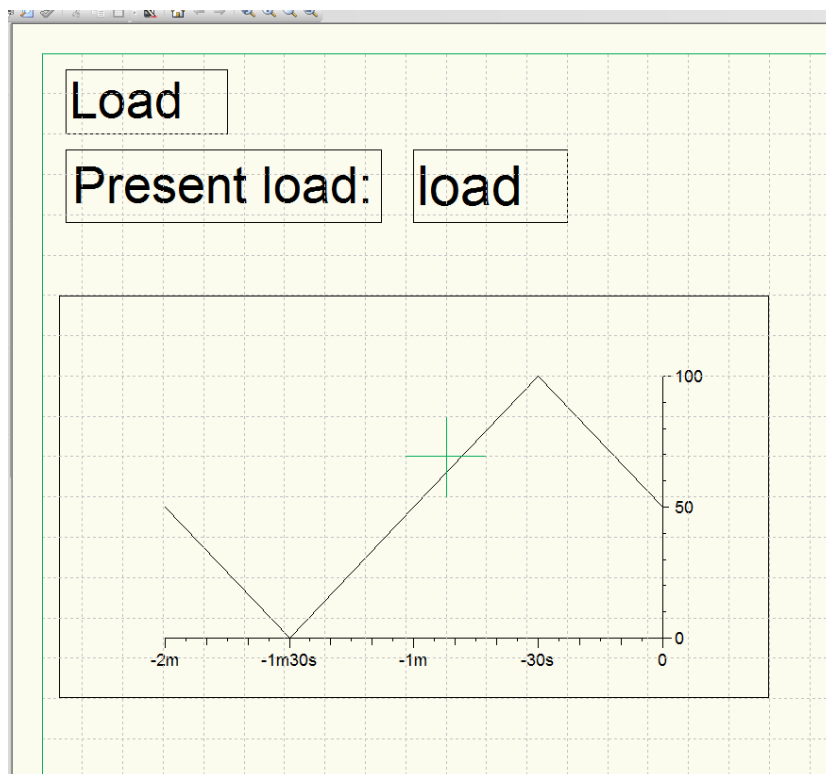
Editor Edit View Insert Tools Window Help

	Name	Data Type	Attributes	Initial Value	Description
1	mot_on_button	bool	retain	false	
2	setValue_RPM	real	retain	0	
3	motor_status	string	retain		
4	ref_rpm	real	retain		
5	mot_off_string	string	retain	'OFF'	
6	mot_ready_string	string	retain	'READY'	
7	mot_run_string	string	retain	'RUNNING'	
8	mot_undef_string	string	retain	'UNDEF'	
9					
10					
11					
12					
13					
14					
15					

Parameters Variables External Variables Function Blocks

```
setValue := real_to_dint( setValue_RPM / 0.075);
ref_rpm := dint_to_real( reference)*0.075;
if controlWord = 6 then
  motor_status := mot_off_string;
elseif controlWord = 7 then
  motor_status := mot_ready_string;
elseif controlWord = 15 then
  motor_status := mot_run_string;
else
  motor_status := mot_undef_string;
end_if;
```

Generator

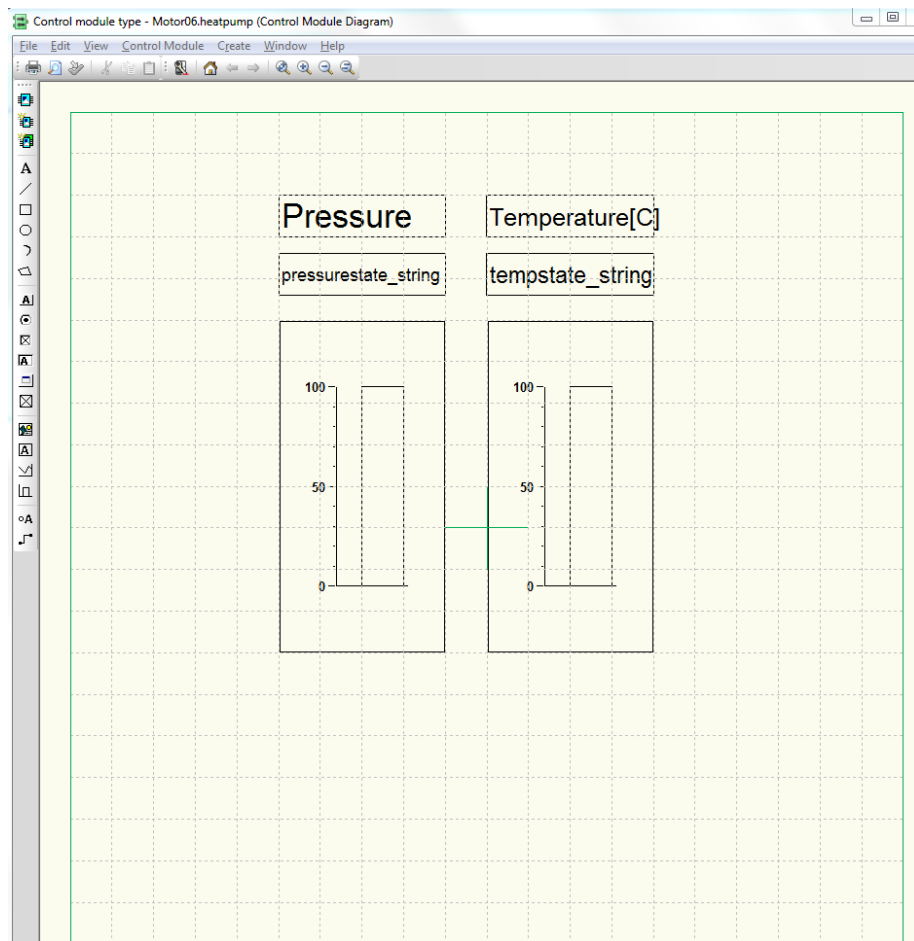


Control module type: motor/generator

	Name	Data Type	Direction	FD Port	Initial Value	Description
1	load	real	in	yes		Sets the load
2	load_on_off	bool	in	yes		Enable/disable load
3						
4						
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15						

Parameters Variables External Variables Function Blocks

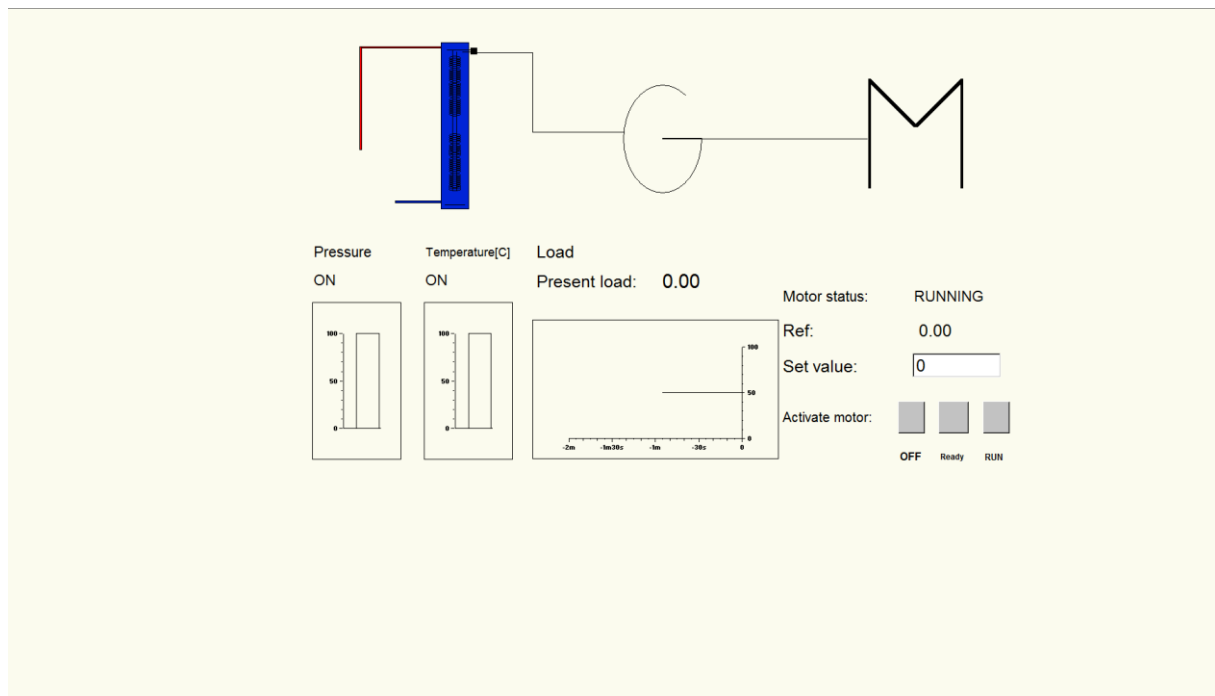
Varmepumpe



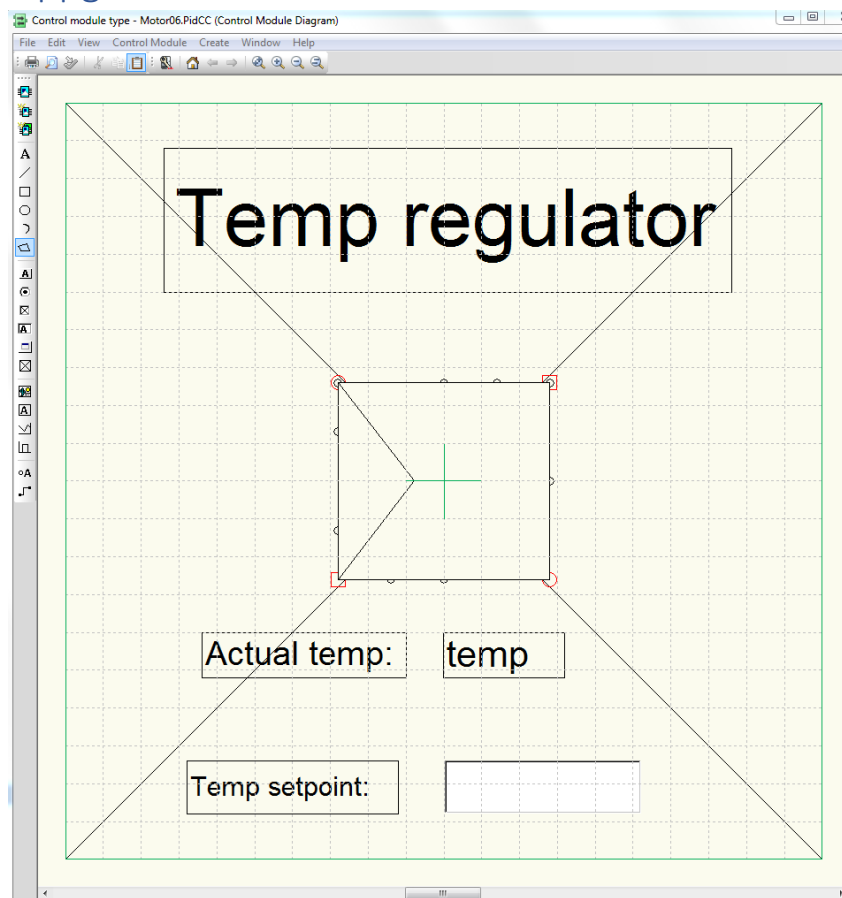
Control Module Type - Motor06.heatpump					
Name	Data Type	Direction	FD Port	Initial Value	Description
1 pressure	real	in	yes		sets pressure
2 pressurestate	bool	in	yes		Enable/disable pressure
3 temperature	real	in	yes		sets temperature
4 tempstate	bool	in	yes		Enable/disable temp
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
<div>Parameters Variables External Variables Function Blocks</div> <pre> if not pressurestate then pressurestate_string := ON_string; else pressurestate_string := OFF_string; end_if; if not tempstate then tempstate_string := ON_string; else tempstate_string := OFF_string; end_if; </pre>					

Alle disse tre modulene har fått de anbefalte parameterne.

Sammensatt system



Oppgave 4



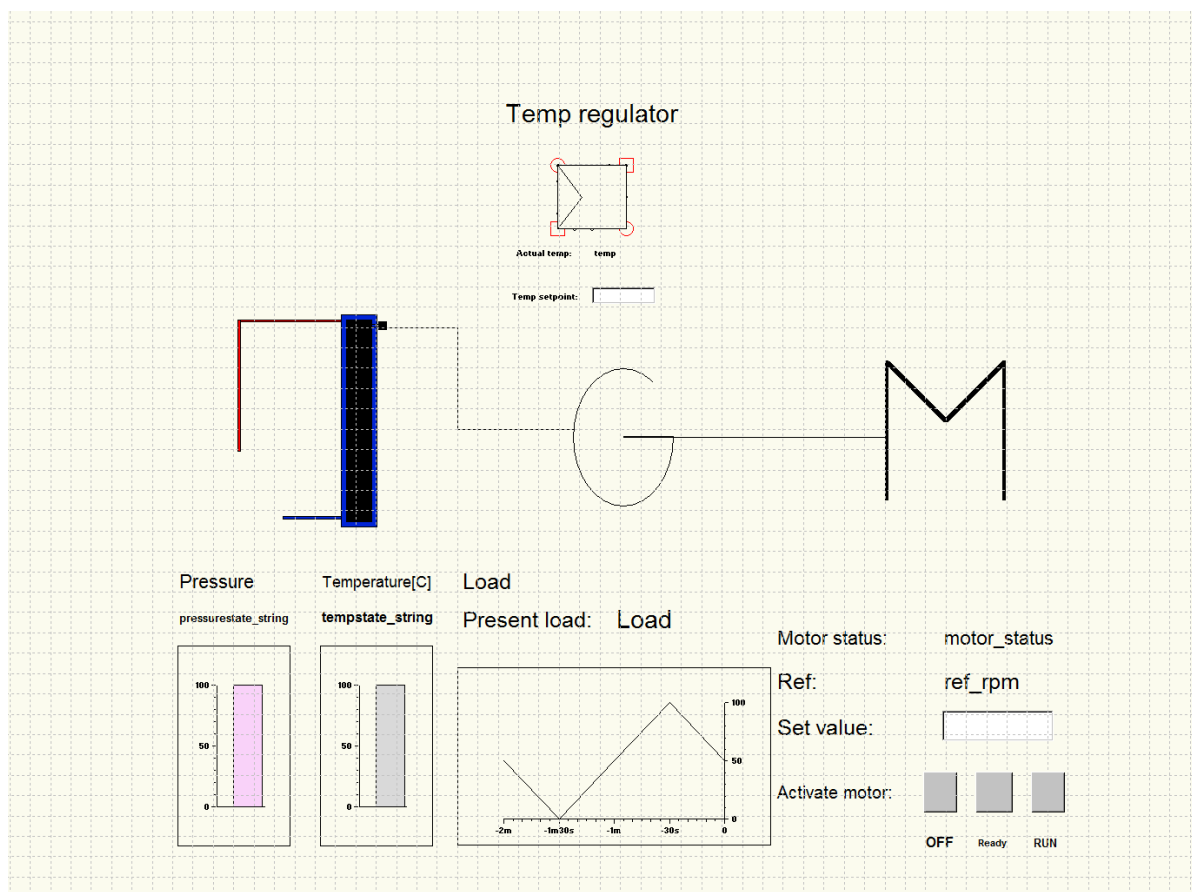
Control Module Type - Motor06.PidCC				
Editor Edit View Insert Tools Window Help				
Name	Data Type	Attributes	Initial Value	Description
1 specc_CC	ControlConnectio	retain		
2 temp_setpoint_C	ControlConnectio	retain		
3 temp_CC	ControlConnectio	retain		
4 speed_scaling	dint	retain	200	
5 unscaled_speed	dint	retain	0	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Parameters Variables External Variables Function Blocks

```

speed := unscaled_speed * speed_scaling;

```



Fullstendig system laget, vi slet med å implementere temperaturregulatoren til å fungere med resten av systemet.

Evaluering

Denne laben var på mange måter både frustrerende og vanskelig å gjennomføre. Vi fikk ikke så mye av dette til å faktisk fungere, selv om vi tror mye av det ble gjort korrekt. Det er mye her som kunne bli bedre forklart, og når det er såpass vanskelig å få tilgang på hjelp som det har vært så blir det vanskelig å gjennomføre laben på en bra måte.