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# FCU CONTROLLED WITH SMART PANEL CONFIGURATION

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## 1. FUNCTIONALITY DESCRIPTION

This instruction extends FCU Relay Controlling instruction and shows how we can control Fan Coil Unit with Smart Panel.[1]

Configuration demands:

a. CLU Z-Wave
b. Relay x4
c. Relay x2
d. Smart Panel OLED

## 2. CONFIGURATION

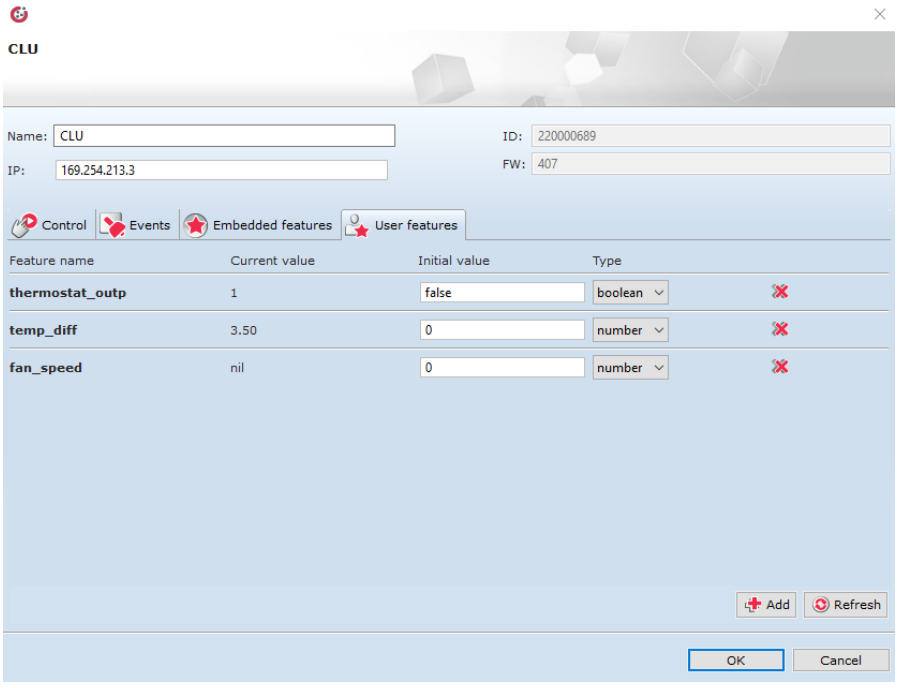
1. Open previous project or create new basing on instruction *FCURelayControllingInstruction*
2. Create script *Page_Manager* (to create script use option *"Add script"* or use button from main menu):

```
CLU->SMARTPANEL->ClearScreen()
SYSTEM.Wait(200)
CLU->SMARTPANEL->PrintText(0, 22, "Set:", 1)
CLU->SMARTPANEL->DrawLine(38, 20, 38, 63, 1)
CLU->SMARTPANEL->DrawLine(0, 20, 123, 20, 1)
CLU->SMARTPANEL->PrintText(40, 22, "Act", 1)
```

[1] Configuration may base on Analog 0-10V controlled fan – in that case, configuration differs

```
CLU->SMARTPANEL->PrintText(100, 3, "[°C]", 1)
CLU->SMARTPANEL->PrintText(10, 0, "Living Room", 2)
CLU->SMARTPANEL->PrintFloat(55, 30, CLU->SMARTPANEL_SENSTEMP->Value, 1,
3)
if(CLU->Thermostat_LivingRoom->Mode == 0 and CLU->Thermostat_LivingRoom-
>State == 1) then
   CLU->SMARTPANEL->PrintText(0, 50, "M", 1)
   CLU->SMARTPANEL->PrintFloat(0, 35, CLU->Thermostat_LivingRoom-
>TargetTemp, 1, 1)
   if(CLU->fan_speed == 1) then
         CLU->SMARTPANEL->DrawIcon(12,50,"~bar1")
   elseif(CLU->fan_speed == 2) then
         CLU->SMARTPANEL->DrawIcon(12,50,"~bar2")
   elseif(CLU->fan_speed == 3) then
         CLU->SMARTPANEL->DrawIcon(12,50,"~bar3")
   end
elseif(CLU->Thermostat_LivingRoom->Mode == 2 and CLU-
>Thermostat_LivingRoom->State == 1) then
   CLU->SMARTPANEL->PrintText(0, 50, "A", 1)
   CLU->SMARTPANEL->PrintFloat(0, 35, CLU->Thermostat_LivingRoom-
>TargetTemp, 1, 1)
   if(CLU->fan_speed == 1) then
         CLU->SMARTPANEL->DrawIcon(12,50,"~bar1")
   elseif(CLU->fan_speed == 2) then
         CLU->SMARTPANEL->DrawIcon(12,50,"~bar2")
   elseif(CLU->fan_speed == 3) then
         CLU->SMARTPANEL->DrawIcon(12,50,"~bar3")
   end
elseif(CLU->Thermostat_LivingRoom->State == 0) then
   CLU->SMARTPANEL->PrintText(0, 50, "OFF", 1)
   CLU->SMARTPANEL->PrintText(10, 35, "-", 1)
end
SYSTEM.Wait(500)
CLU->SMARTPANEL->DisplayContent()
```

3. Add *User Feature* named *fan_speed* after double click on CLU in *User Features'* tab



4. Edit script *System Init* as show below

```
CLU->Thermostat_LivingRoom->Start()
SYSTEM.Wait(1000)
CLU->TemperatureCounting()
CLU->ThermostatMode()
SYSTEM.Wait(1000)
CLU->ElectrovalveMode()
if(CLU->Thermostat_LivingRoom->ControlOutValue == 1) then
   CLU->FAN_2->SwitchOff(0)
   CLU->FAN_3->SwitchOff(0)
   SYSTEM.Wait(500)
   CLU->FAN_1->SwitchOn(0)
   CLU->fan_speed = 1
end

CLU->Page_Manager()
```

5. To script *ThermostatOff* edit as show below:

```
if(CLU->Thermostat_LivingRoom->Mode == 2 or CLU->Thermostat_LivingRoom-
>Mode == 0) then
   CLU->FAN_1->SwitchOff(0)
   CLU->FAN_2->SwitchOff(0)
   CLU->FAN_3->SwitchOff(0)
   CLU->ElectroValve_COLD->SwitchOff(0)
   CLU->ElectroValve_HOT->SwitchOff(0)
   CLU->fan_speed=0
End
```

6. Edit script *ThermostatSet* as show below:

```
if(CLU->Thermostat_LivingRoom->ControlOutValue == 1 and CLU-
>Thermostat_LivingRoom->Mode == 2) then
if(CLU->temp_diff > 0 and CLU->temp_diff <= 1) then
         CLU->FAN_2->SwitchOff(0)
         CLU->FAN_3->SwitchOff(0)
         SYSTEM.Wait(500)
         CLU->FAN_1->SwitchOn(0)
         CLU->fan_speed = 1
   elseif(CLU->temp_diff > 2 and CLU->temp_diff <= 3) then
         CLU->FAN_1->SwitchOff(0)
         CLU->FAN_3->SwitchOff(0)
         SYSTEM.Wait(500)
         CLU->FAN_2->SwitchOn(0)
         CLU->fan_speed = 2
   elseif(CLU->temp_diff > 4) then
         CLU->FAN_1->SwitchOff(0)
         CLU->FAN_2->SwitchOff(0)
         SYSTEM.Wait(500)
         CLU->FAN_3->SwitchOn(0)
         CLU->fan_speed = 3
   end
end
```

7. Add script *"FanUp"*

```
if(CLU->fan_speed == 3 ) then
   CLU->fan_speed = 0
else
   CLU->fan_speed = CLU->fan_speed + 1
end

if(CLU->fan_speed == 0) then
   CLU->FAN_1->SwitchOff(0)
   CLU->FAN_2->SwitchOff(0)
   CLU->FAN_3->SwitchOff(0)
elseif(CLU->fan_speed == 1) then
   CLU->FAN_2->SwitchOff(0)
   CLU->FAN_3->SwitchOff(0)
   SYSTEM.Wait(500)
   CLU->FAN_1->SwitchOn(0)
elseif(CLU->fan_speed == 2) then
   CLU->FAN_1->SwitchOff(0)
   CLU->FAN_3->SwitchOff(0)
   SYSTEM.Wait(500)
   CLU->FAN_2->SwitchOn(0)
elseif(CLU->fan_speed == 3) then
   CLU->FAN_1->SwitchOff(0)
   CLU->FAN_2->SwitchOff(0)
   SYSTEM.Wait(500)
   CLU->FAN_3->SwitchOn(0)
end

CLU->Page_Manager()
```

8. Add script *"Button1"*

```
if(CLU->Thermostat_LivingRoom->Mode == 0 and CLU->Thermostat_LivingRoom-
>State == 1) then
   CLU->Thermostat_LivingRoom->IncreaseDegree()
elseif(CLU->Thermostat_LivingRoom->Mode == 2 and CLU-
>Thermostat_LivingRoom->State == 1) then
   CLU->Thermostat_LivingRoom->SetPointValue(CLU->Thermostat_LivingRoom-
>TargetTemp)
   CLU->Thermostat_LivingRoom->AutoModeStop()
   CLU->Thermostat_LivingRoom->IncreaseDegree()
end
CLU->TemperatureCounting()
CLU->ThermostatMode()
CLU->ThermostatSet()
CLU->Page_Manager()
```

9. Add script *"Button2"*

```
if(CLU->Thermostat_LivingRoom->Mode == 0 and CLU->Thermostat_LivingRoom-
>State == 1) then
   CLU->Thermostat_LivingRoom->Stop()
   CLU->ThermostatOff()
elseif(CLU->Thermostat_LivingRoom->Mode == 2 and CLU-
>Thermostat_LivingRoom->State == 1) then
```

```
   CLU->Thermostat_LivingRoom->SetPointValue(CLU->Thermostat_LivingRoom-
>TargetTemp)
   CLU->Thermostat_LivingRoom->AutoModeStop()
elseif(CLU->Thermostat_LivingRoom->State == 0) then
   CLU->Thermostat_LivingRoom->Start()
   CLU->Thermostat_LivingRoom->AutoModeStart()
   CLU->TemperatureCounting()
   if(CLU->Thermostat_LivingRoom->ControlOutValue == 1) then
         CLU->FAN_2->SwitchOff(0)
         CLU->FAN_3->SwitchOff(0)
         SYSTEM.Wait(500)
         CLU->FAN_1->SwitchOn(0)
         CLU->fan_speed = 1
   end
   CLU->ThermostatMode()
   CLU->ElectrovalveMode()
   CLU->ThermostatSet()
end
CLU->Page_Manager()
```

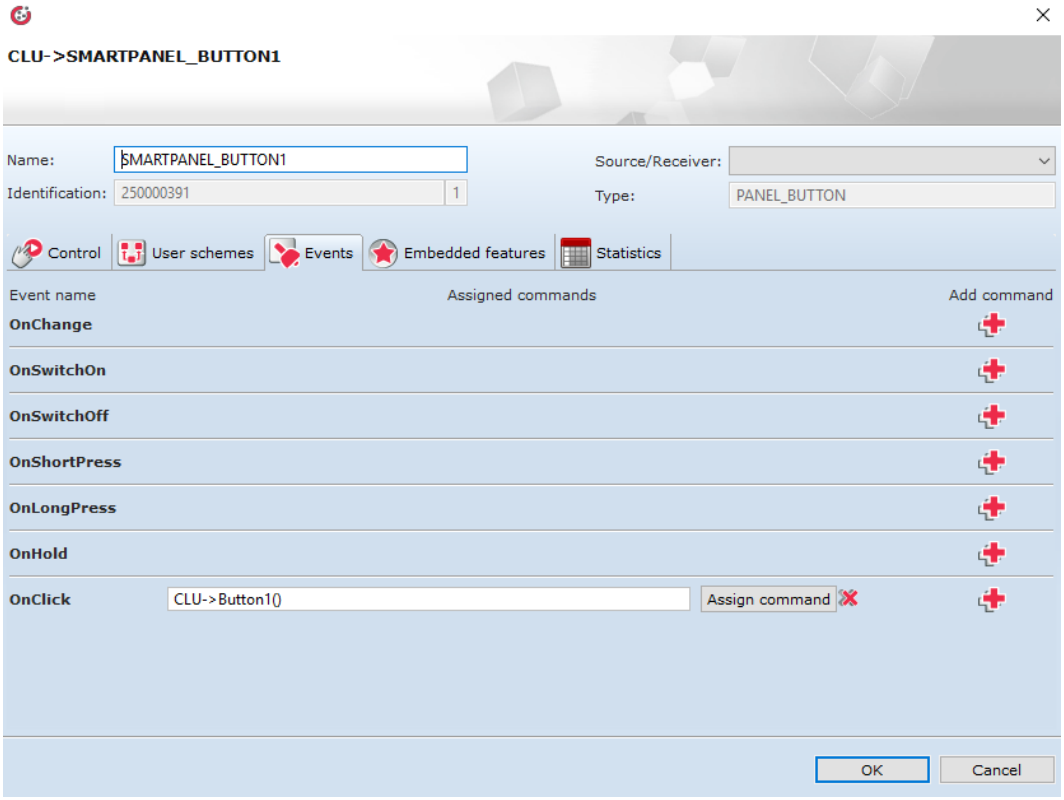
10. Add script *"Button3"*

```
if(CLU->Thermostat_LivingRoom->Mode == 0 and CLU->Thermostat_LivingRoom-
>State == 1) then
   CLU->Thermostat_LivingRoom->DecreaseDegree()
elseif(CLU->Thermostat_LivingRoom->Mode == 2 and CLU-
>Thermostat_LivingRoom->State == 1) then
   CLU->Thermostat_LivingRoom->SetPointValue(CLU->Thermostat_LivingRoom-
>TargetTemp)
   CLU->Thermostat_LivingRoom->AutoModeStop()
   CLU->Thermostat_LivingRoom->DecreaseDegree()
end
CLU->TemperatureCounting()
CLU->ThermostatMode()
CLU->ThermostatSet()
CLU->Page_Manager()
```

11. Add script *"Button4"*

```
if(CLU->Thermostat_LivingRoom->Mode == 0) then
   CLU->FanUp()
elseif(CLU->Thermostat_LivingRoom->Mode == 2) then
   CLU->Thermostat_LivingRoom->AutoModeStop()
   CLU->FanUp()
End
```

12. Assign script *"Button1"*, *"Button2"*, *"Button3"*, *"Button4"* to SMARTPANEL_BUTTONx' s *OnClick* events as show below (by choosing from objects' list particular button and going to *Events* tab):




13. Save project and send configuration to CLU