Domoticz

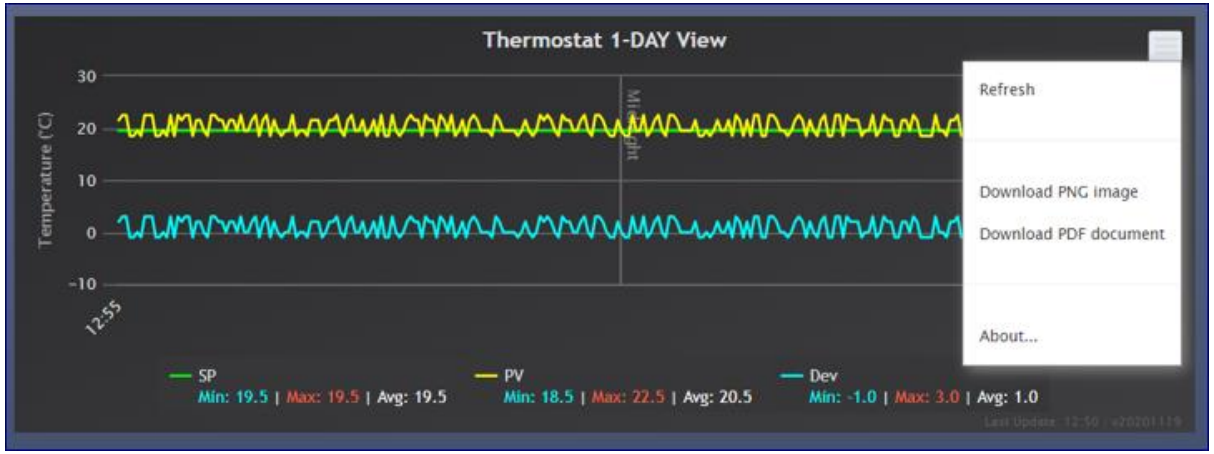
Explore Custom Pages

Highcharts & Google Charts

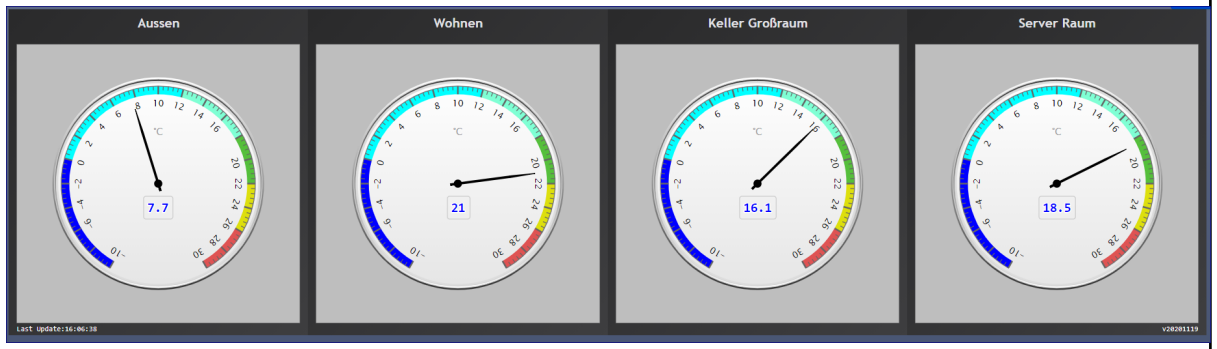
Developed For Personal Use
22.11.2020

Selected Examples

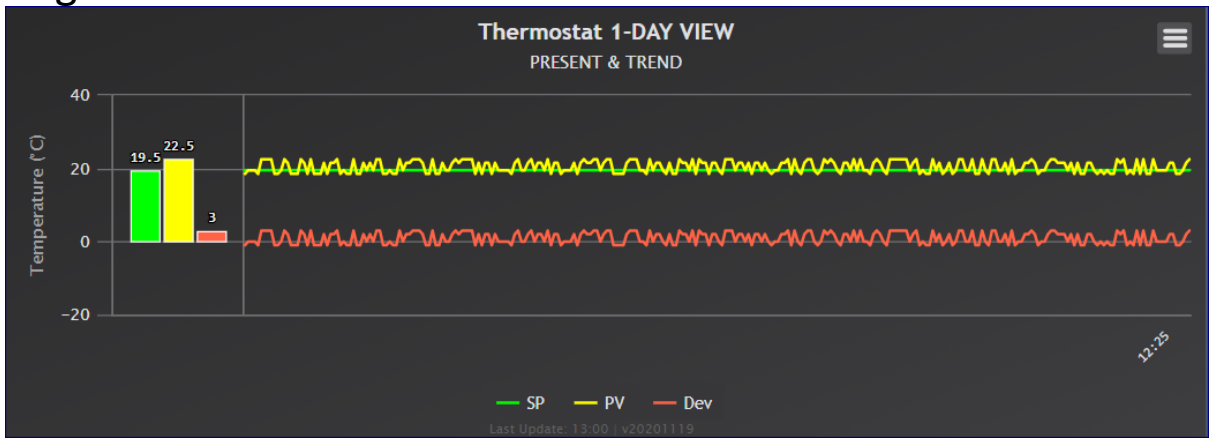
Highcharts Line Chart



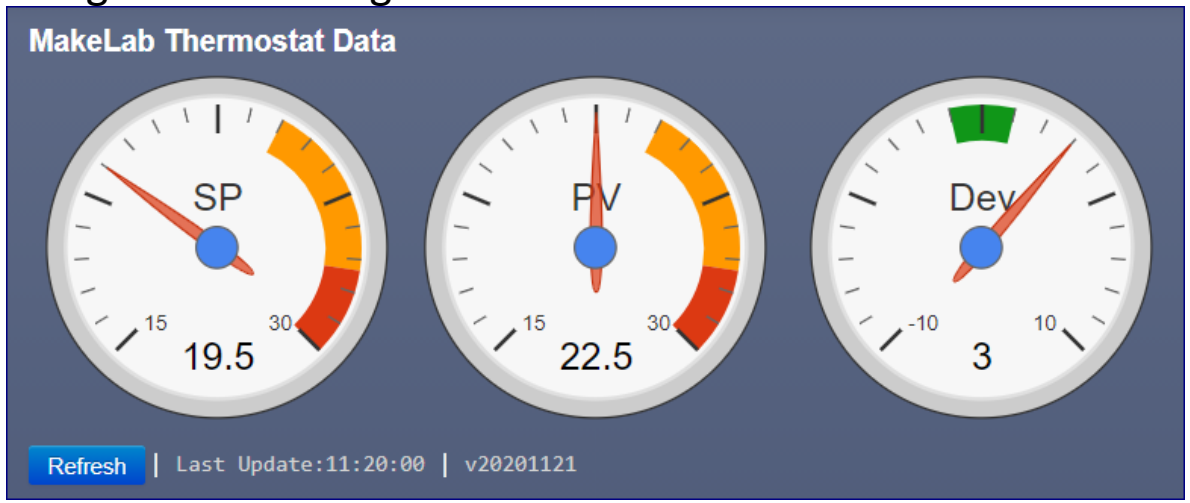
Highcharts Angular Gauges



Highcharts Combined Chart

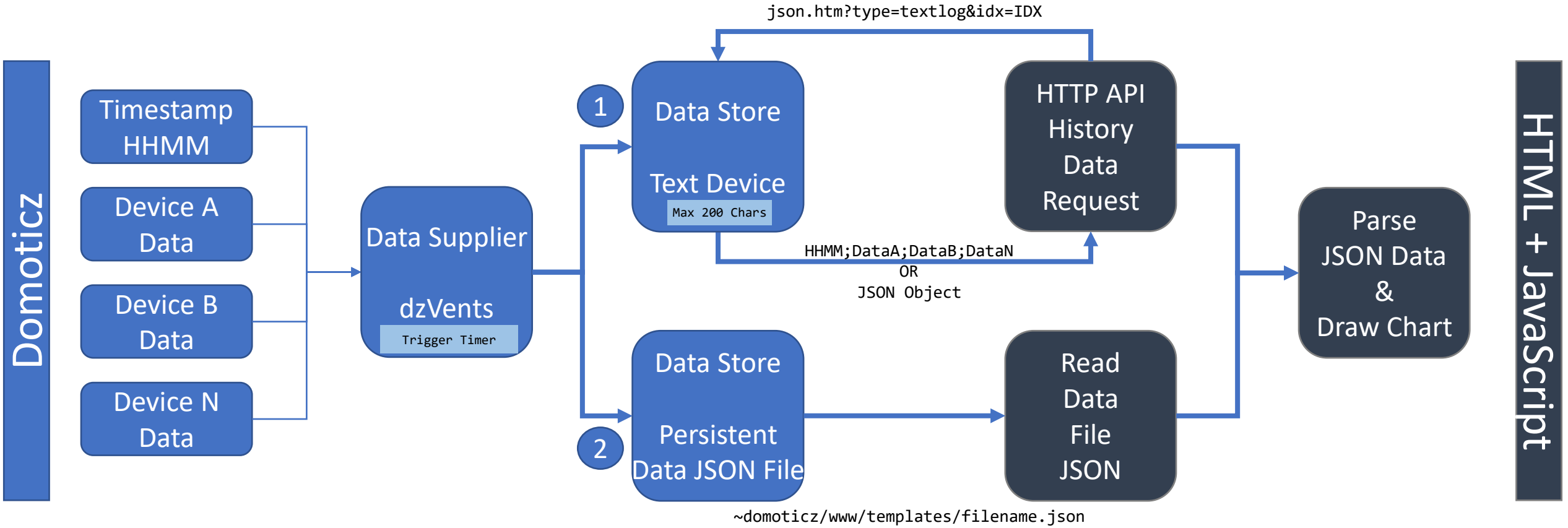


Google Charts Gauges



INFO: More examples in the archive “*explore_custom_pages_charts.zip*”.

Multiple Devices Chart Concept



Two Data Source Solutions:
1. Domoticz Text Device
2. External Data File

Test Scenario

Test Scenario Devices

Idx	Hardware	ID	Unit	Name	Type	SubType	Data
30	VirtualSensors	001406E	1	MakeLab Thermostat Setpoint	Thermostat	SetPoint	21.5
31	VirtualSensors	1406F	1	MakeLab Temperature	Temp	LaCrosse TX3	24.5 C
32	VirtualSensors	00082032	1	MakeLab Thermostat Battery	General	Percentage	30%
42	VirtualSensors	00082042	1	MakeLab Thermostat Data	General	Text	1025;21.5;20.5
43	VirtualSensors	00082043	1	MakeLab Thermostat JSON	General	Text	{"timestamp":"1235", "devices": [{"name":"MakeLab Thermostat Setpoint", "data":17.5}, {"name":"MakeLab Temperature", "data":19.5}]}

Test Scenario Value Flow with dzVents device attributes

IDX 30 setPoint + IDX 31 temperature = IDX 42 HHMM;setPoint;temperature

IDX 30 Name & setPoint + IDX 31 Name & temperature = IDX 43 JSON Object

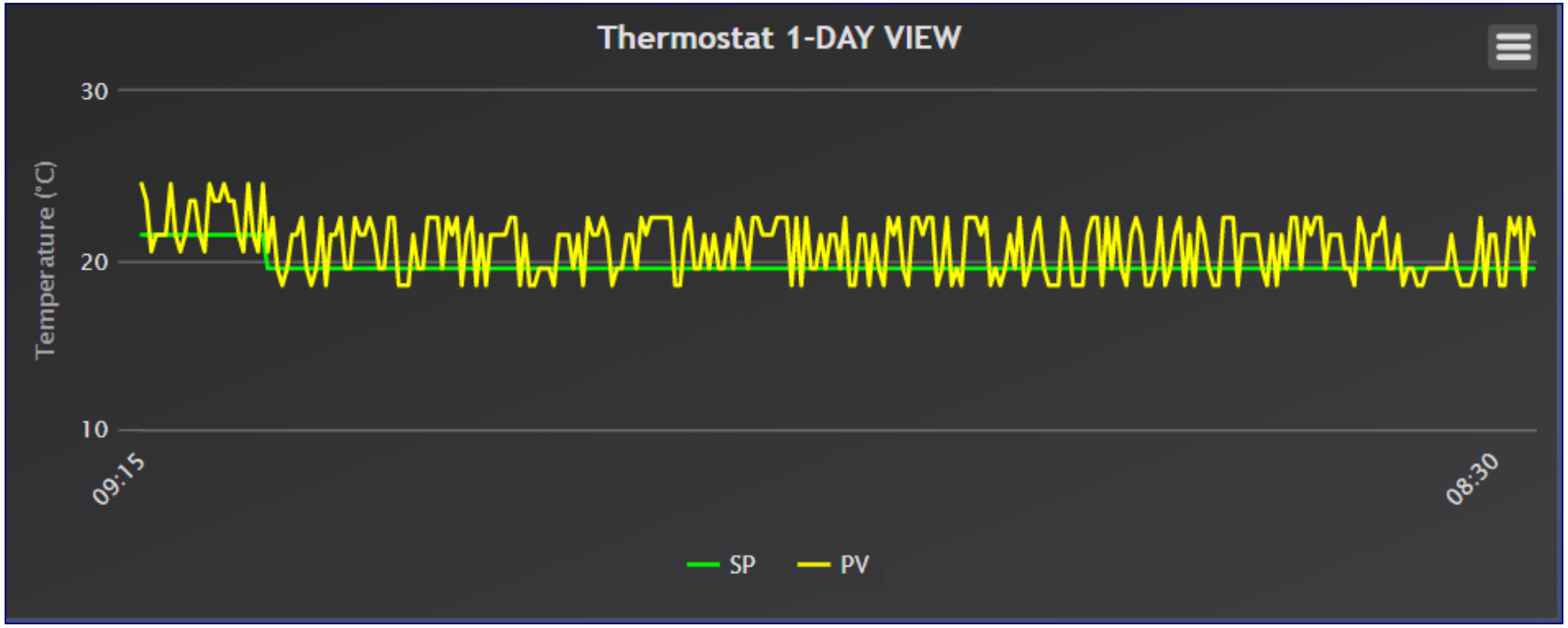
```
{"timestamp": "HHMM“, "devices":[
  {"name":"name", "data":setPoint}, {"name":"name", "data":temperature}
]}
```

IDX 30 setPoint + IDX 31 temperature = External File JSON Object

```
{
  "result" : [
    {"pv":setPoint,"sp":temperature,"time":"12:38"},
    ...
  ],
  "status":"OK",
  "title":"Thermostat Data"
}
```

Highcharts

Set Point (SP) & Temperature (PV) 24 hour data (sample rate 5 mins)



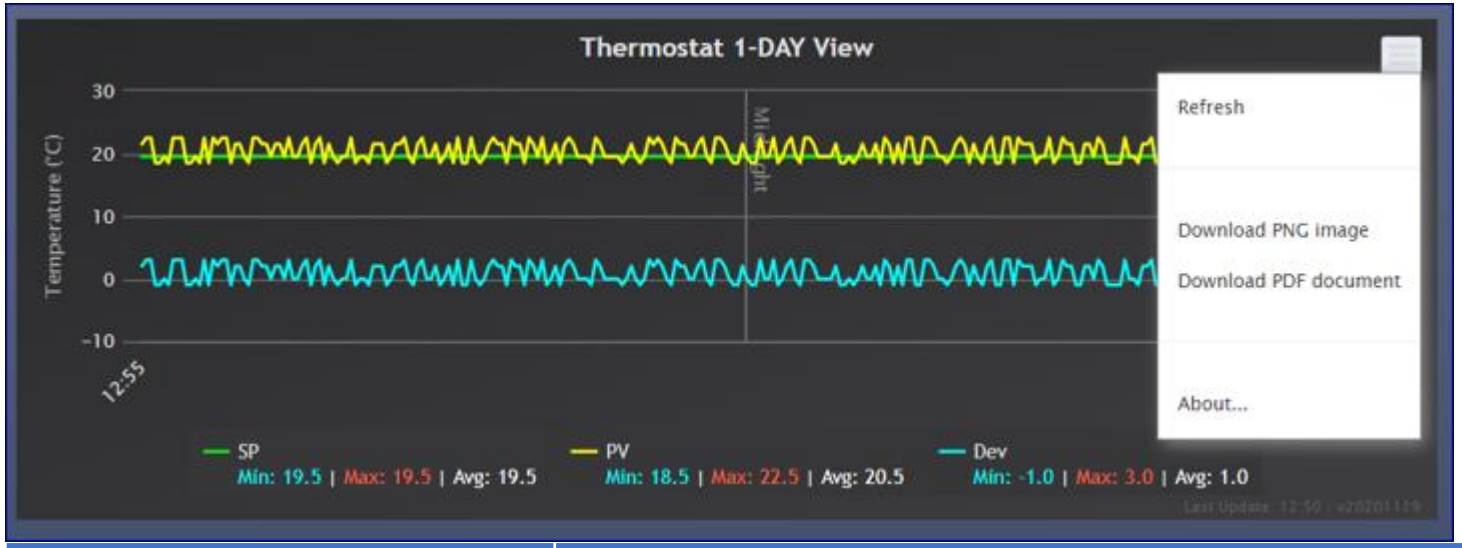

```
Data Content HTTP API Response
{
  "result" : [
  {
    "Data" : "0913;18.5;21.5",
    "Date" : "2020-11-05 09:13:00",
    "User" : "",
    "idx" : "4“
   },
   ... ],
   "status" : "OK",
   "title" : "TextLog“
}
```

Item	Description
File Source	highcharts\linechart\datatextcsv\thermostat-1dayview.html (archive: explore_custom_pages_charts.zip)
Data Source	Domoticz virtual sensor Text Device History Log with 1 day setting (datatextcsv)
Data Source Location	Domoticz HTTP API Request: *http://domoticz-ip:port/*json.htm?type=textlog&idx=IDX Text Device
Data Content	CSV string: HHMM;SP;PV from the HTTP API Response key Data
Chart Additions	xAxis labels first & last only; Credit information disabled

Line Chart - Thermostat 1-DAY VIEW Advanced

Highcharts

Set Point (SP) & Temperature (PV) 24 hour data (sample rate 5 mins) with chart additions.

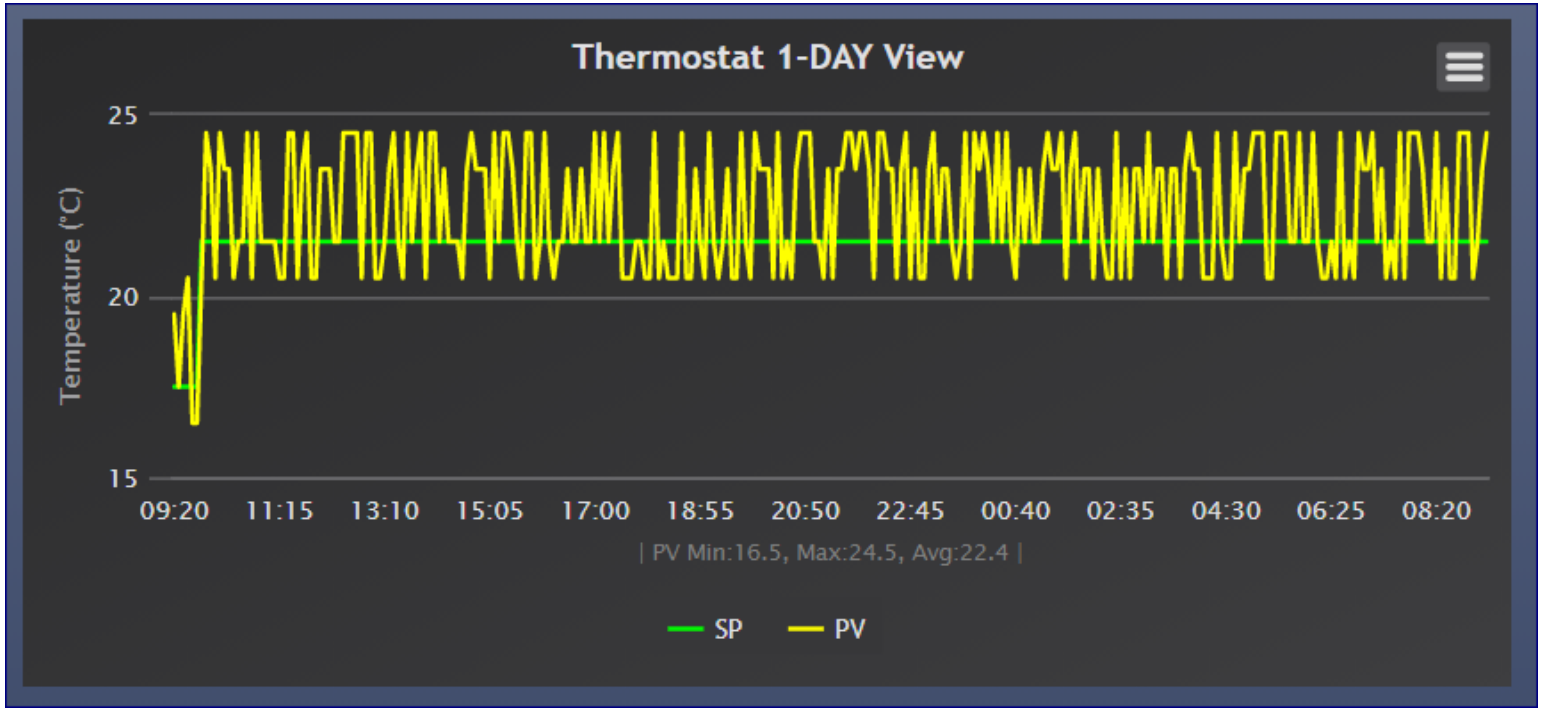


Data Content HTTP API Response

```
{
  "result" : [
  {
    "Data" : "0913;18.5;21.5",
    "Date" : "2020-11-05 09:13:00",
    "User" : "",
    "idx" : "4“
   },
   ... ],
   "status" : "OK",
   "title" : "TextLog“
}
```

Item	Description
File Source	highcharts\linechart\datatextcsv\thermostat-1dayview-advanced.html (archive: explore_custom_pages_charts.zip)
Data Source	Domoticz virtual sensor Text Device History Log with 1 day setting (datatextcsv)
Data Source Location	Domoticz HTTP API Request: *http://domoticz-ip:port/*json.htm?type=textlog&idx=IDX Text Device
Data Content	CSV string: HHMM;SP;PV from the HTTP API Response key Data
Chart Additions	• Data series as array with device name, datapoints, line color • Chart series legend with Min, Max, Avg • Plot line at midnight • Chart credits with last update and link to view the log of the text device with datapoints • Customized context menu with own function Refresh, two standard menu items (Download …) and About Dialog (Bootbox)

Set Point (SP) & Temperature (PV) (sample rate 5 mins)



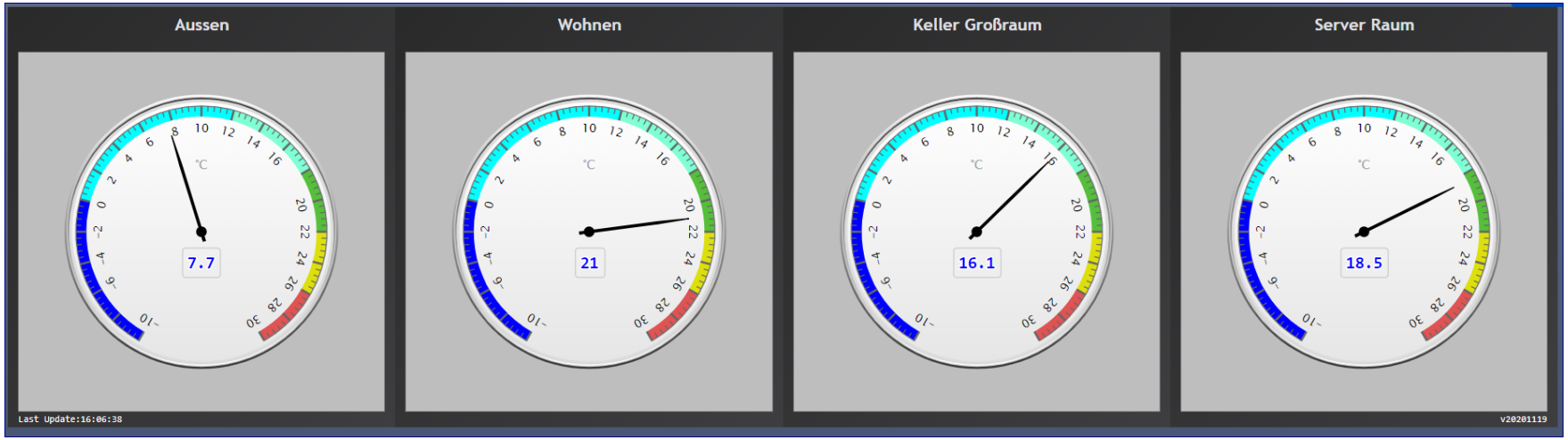

```
Data Content File with JSON Object
{
  "result" : [
    {"pv":16.5,"sp":17.5,"time":"12:38"},
    ...
  ],
  "status":"OK",
  "title":"Thermostat Data"
}
```

Item	Description
File Source	highcharts\linechart\datafilejson\thermostat-1dayview.html (archive: explore_custom_pages_charts.zip)
Data Source	External file with JSON object created in regular intervals by dzVents using persistent data (datafilejson)
Data Source Location	~domoticz/www/templates/thermostat_1dayview_data.json
Data Content	JSON array “result” with key:value pairs = “pv”: NN.N, “sp”: NN.N, “time”: HH:MM
Chart Additions	xAxis title with PV Min, Max, Avg

Temperature Dashboard - Angular Gauges Speedometer

Highcharts

Four Temperature Devices selected from Domoticz Room Plan

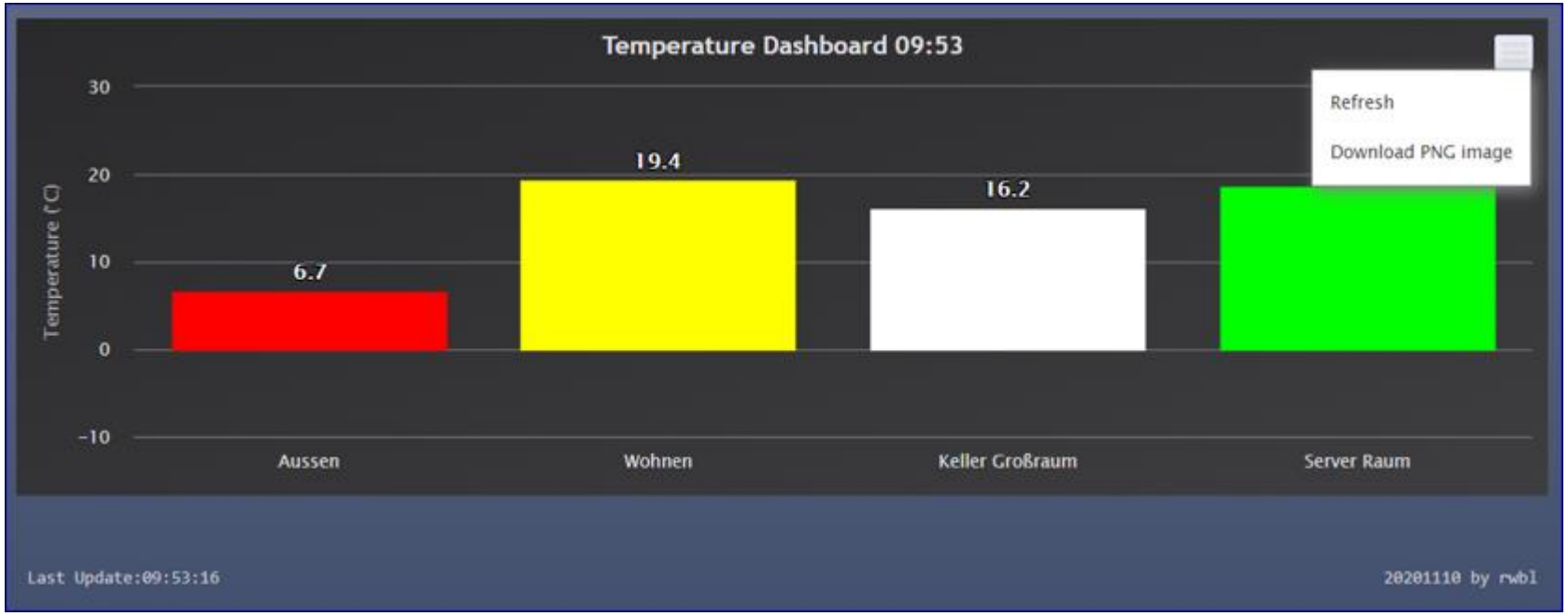


Data Content HTTP API Response


```
{
  "ServerTime" : "2020-11-09 19:28:40",
  "result" :
  [
  {"Name" : "Aussen",
   "Temp" : 7.7,
   "idx" : "344",},
  {"Name" : "Wohnen",
   "Temp" : 21,
   "idx" : "350",},
  {"Name" : "Server Raum",
   "Temp" : 16.1,
   "idx" : "351",},
  {"Name" : "Keller Gro\u00dfraum",
   "Temp" : 18.5,
   "idx" : "356",},
  ],
  "status" : "OK",
  "title" : "Devices"
}
```


Item	Description
File Source	highcharts\angulargaugeschart\datahttpplan\temperature-dashboard.html (archive: explore_custom_pages_charts.zip)
Data Source	Temperature Devices data (datahttpplan)
Data Source Location	Domoticz HTTP API Request: *http://domoticz-ip:port/*json.htm?type=devices&plan=IDX ROOMPLAN
Data Content	JSON array “result” with key:value pairs
Chart Additions	4 Gauges as individual Highcharts Angular Gauges charts added to HTML DIV container as child

Four Devices selected from Domoticz Room Plan



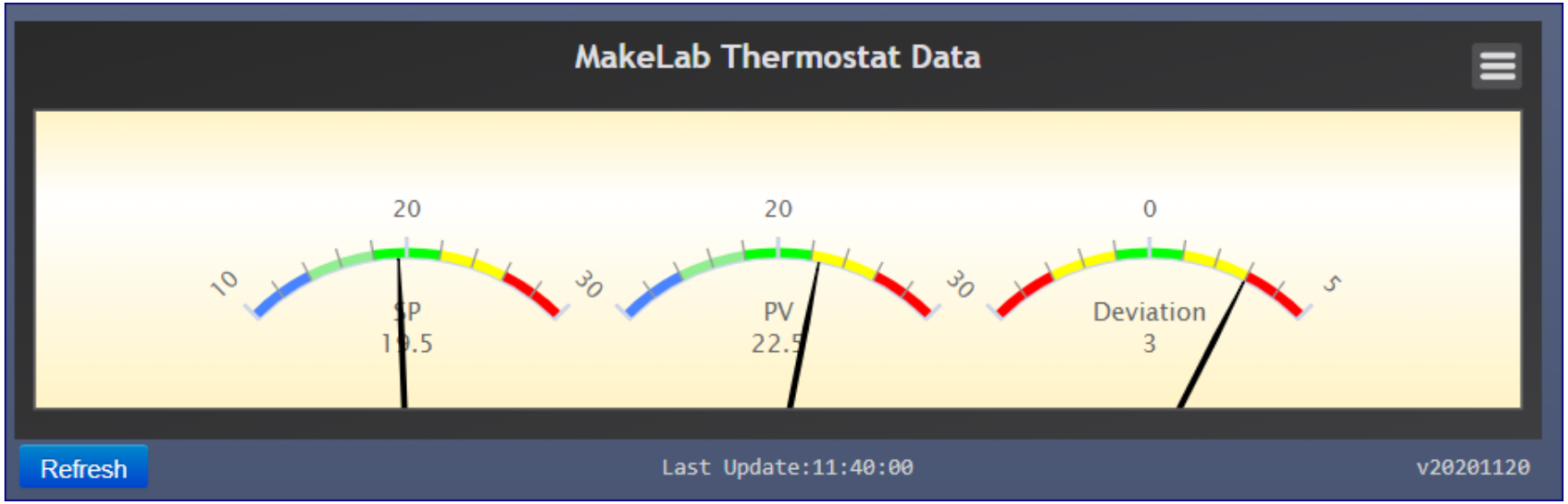
Data Content HTTP API Response


```
{
  "ServerTime" : "2020-11-09 19:28:40",
  "result" :
  [
  {"Name" : "Aussen",
   "Temp" : 7.7,
   "idx" : "344",},
  {"Name" : "Wohnen",
   "Temp" : 21,
   "idx" : "350",},
  {"Name" : "Server Raum",
   "Temp" : 16.1,
   "idx" : "351",},
  {"Name" : "Keller Gro\u00dfraum",
   "Temp" : 18.5,
   "idx" : "356",},
  ],
  "status" : "OK",
  "title" : "Devices"
}
```


Item	Description
File Source	highcharts\columnchart\datahttpplan\temperature-dashboard.html (archive: explore_custom_pages_charts.zip)
Data Source	Temperature Devices data (datahttpplan)
Data Source Location	Domoticz HTTP API Request: *http://domoticz-ip:port/*json.htm?type=devices&plan=IDX ROOMPLAN
Data Content	JSON array “result” with key:value pairs
Chart Additions	Custom menu; Footer as HTML table outside chart area

Thermostat Dashboard - Angular Gauges VU

Set Point (SP), Temperature (PV), Deviation (Dev)



Data Content HTTP API Response

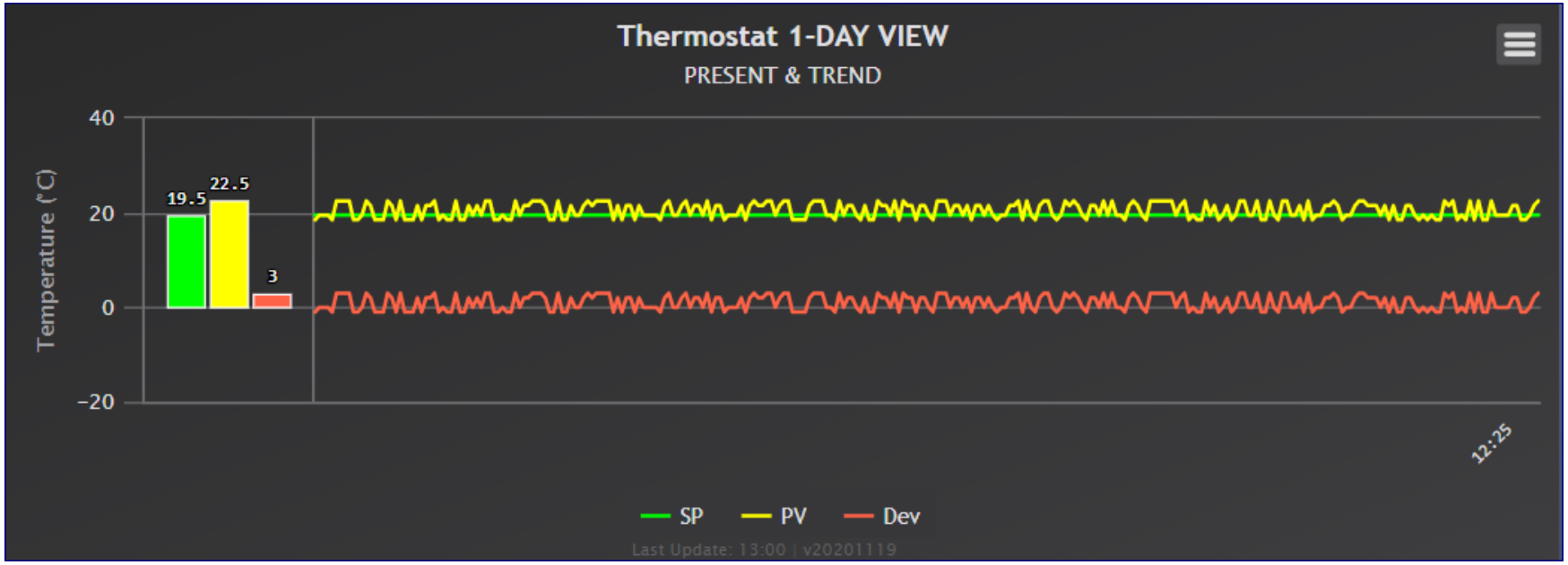
```
{
  "app_version" : "2020.2 (build 12554)",
  "result" : [
    {
      ...
      "Data" : "0913;21.0;24.0",
      "Name" : "MakeLab Thermostat Data",
      ...,
      "idx" : "42"
    }
   ],
   "status" : "OK",
   "title" : "Devices"
}
```

Item	Description
File Source	highcharts\angulargaugeschart\datahttprid\thermostat-dashboard-vu.html (archive: explore_custom_pages_charts.zip)
Data Source	Temperature Devices data (datahttprid)
Data Source Location	Domoticz HTTP API Request: *http://domoticz-ip:port/*json.htm?type=devices&rid=IDX THERMOSTAT
Data Content	CSV string: HHMM;SP;PV from the HTTP API Response key result[0].Data
Chart Additions	Footer with refresh button, Last Update & Version information

Combined Column & Line Chart - Thermostat 1-DAY VIEW

Highcharts

Set Point (SP), Temperature (PV) & Deviation (Dev) 24 hour data (sample rate 5 mins)

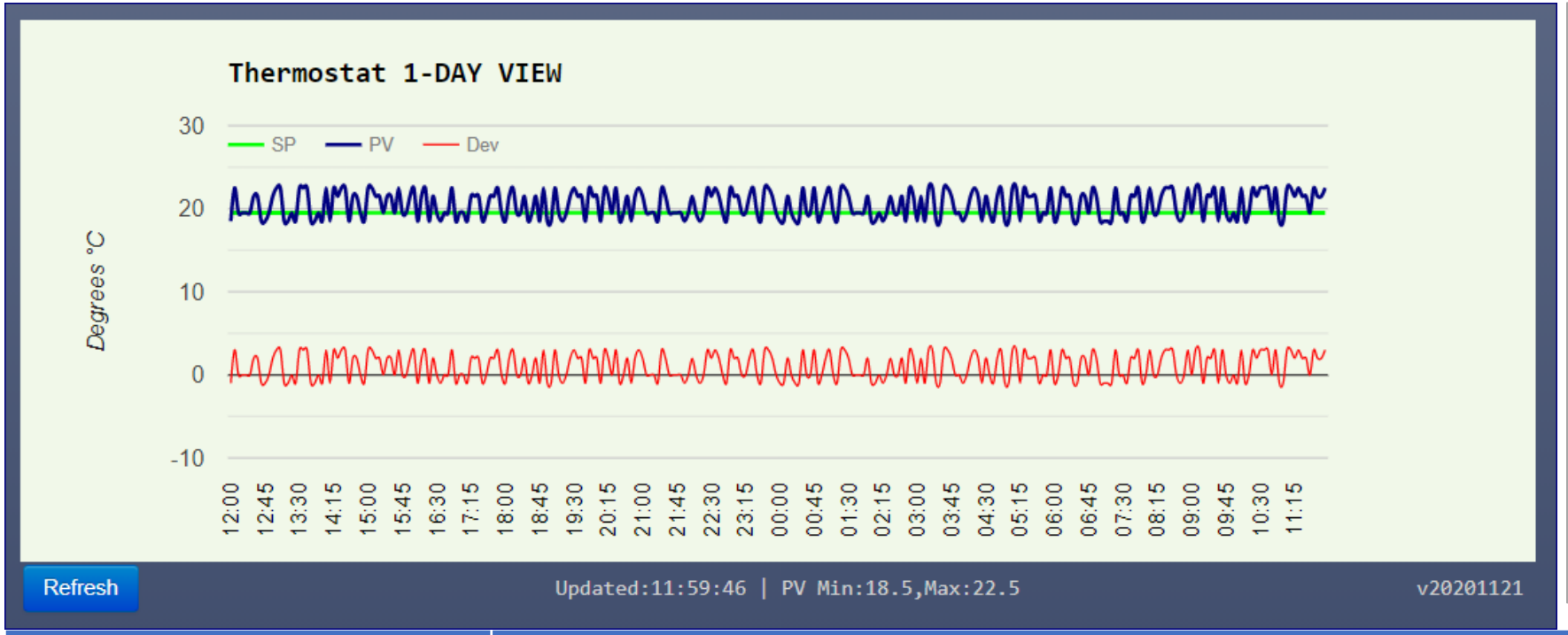



```
Data Content HTTP API Response
{
  "result" : [
  {
    "Data" : "0913;19.5;21.5",
    "Date" : "2020-11-05 09:13:00",
    "User" : "",
    "idx" : "4"
   },
   ... ],
   "status" : "OK",
   "title" : "TextLog"
}
```

Item	Description
File Source	highcharts\columnlinechart\datatextcsv\thermostat-1dayview.html (archive: explore_custom_pages_charts.zip)
Data Source	Domoticz virtual sensor Text Device History Log with 1 day setting (datatextcsv)
Data Source Location	Domoticz HTTP API Request: *http://domoticz-ip:port/*json.htm?type=textlog&idx=IDX Text Device
Data Content	CSV string: HHMM;SP;PV from the HTTP API Response key result[NNN].Data
Chart Additions	Credits bottom centre Last Update + Version; xAxis plot lines to built box around column chart; xAxis label last value only

Google Charts

Set Point (SP) & Temperature (PV) 24 hour data (sample rate 5 mins)

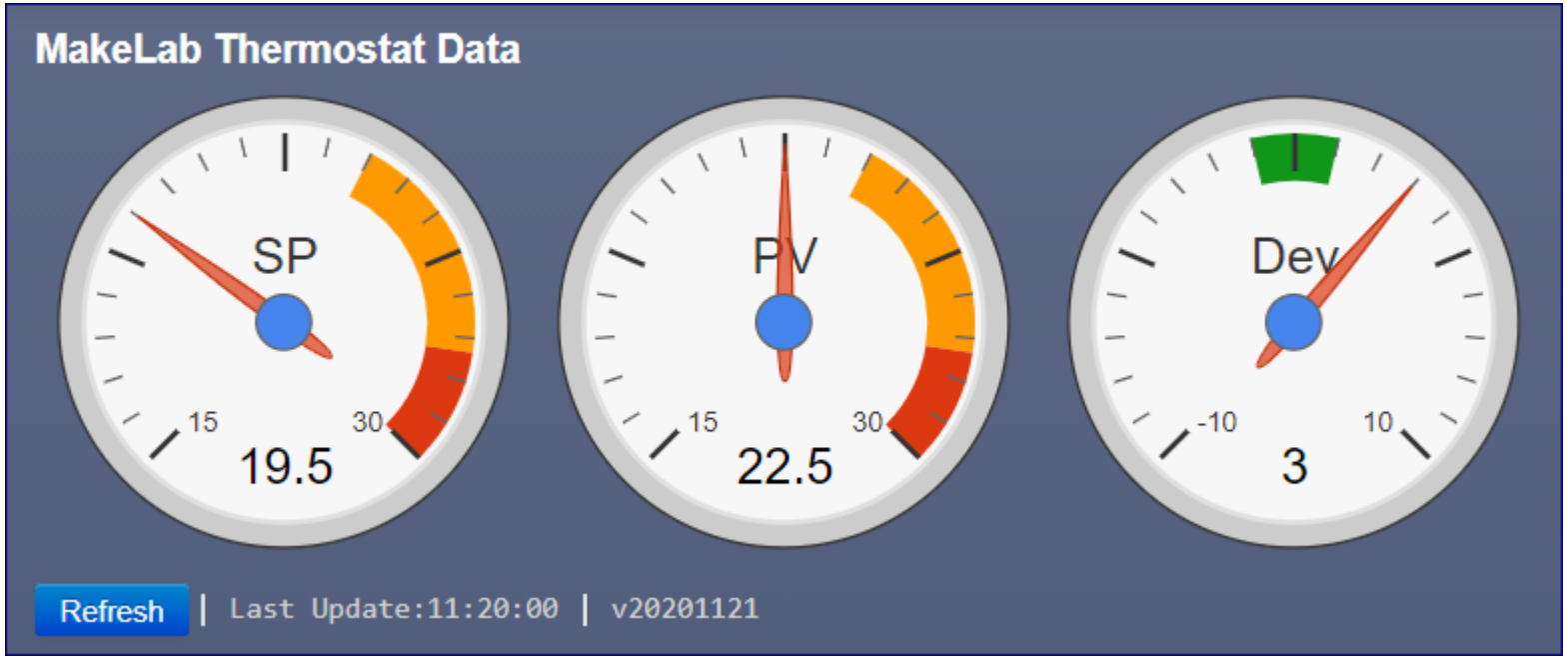


Data Content HTTP API Response


```
{
  "result" : [
  {
    "Data" : "0913;19.5;21.5",
    "Date" : "2020-11-05 09:13:00",
    "User" : "",
    "idx" : "4"
   },
   ... ],
   "status" : "OK",
   "title" : "TextLog"
}
```


Item	Description
File Source	googlecharts\linechart\datatextcsv\thermostat-1dayview.html (archive: explore_custom_pages_charts.zip)
Data Source	Domoticz virtual sensor Text Device History Log with 1 day setting (datatextcsv)
Data Source Location	Domoticz HTTP API Request: *http://domoticz-ip:port/*json.htm?type=textlog&idx=IDX Text Device
Data Content	CSV string: HHMM;SP;PV from the HTTP API Response key Data
Chart Additions	Table footer with refresh button, update & PV min/max/avg and version information

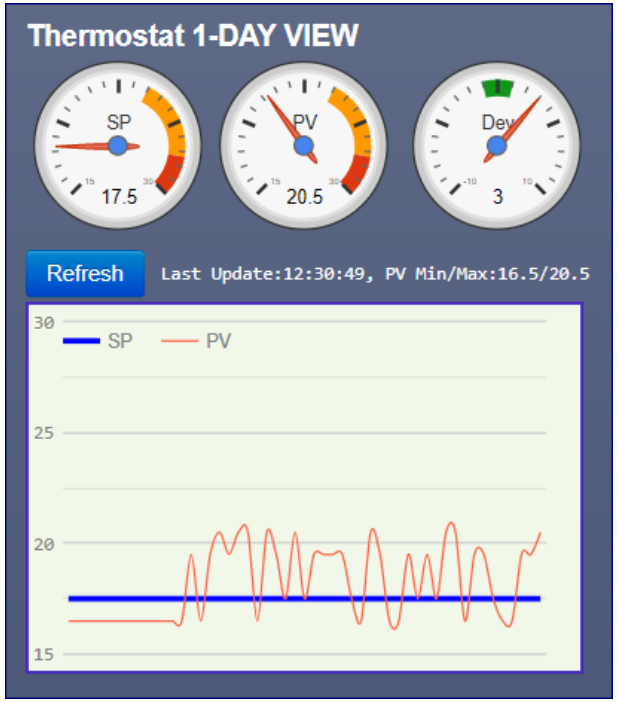
Set Point (SP), Temperature (PV) & Deviation (Dev)




```
Data Content HTTP API Response
{
  "app_version" : "2020.2 (build 12554)",
  "result" : [
  { ...
    "Data" : "0913;21.0;24.0",
    "Name" : "MakeLab Thermostat Data",
    ...,
    "idx" : "42"
   }
   ],
  "status" : "OK",
  "title" : "Devices"
}
```

Item	Description
File Source	googlecharts\gaugeschart\datahttprid\thermostat_dashboard.html (archive: explore_custom_pages_charts.zip)
Data Source	Domoticz virtual sensor Text Device Status (datahttprid)
Data Source Location	Domoticz HTTP API Request: *http://domoticz-ip:port/*json.htm?type=devices&rid=IDX Text Device
Data Content	CSV string: HHMM;SP;PV from the HTTP API Response key Data
Chart Additions	Chart device name; Table footer with refresh button, update & PV min/max/avg and version information

Set Point (SP), Temperature (PV) & Deviation (Dev) & line chart 24 hours data (sample rate 5 mins)



Data Content JSON File

```
{
  "result" : [
  {"pv":22.0,"sp":22.0,"time":"11:17"},
  {"pv":25.0,"sp":22.0,"time":"11:16"},
  ...],
  "status":"OK",
  "title":"Thermostat Data"
}
```

Item	Description
File Source	googlecharts\gaugeslinechart\datajsonfile\thermostat_1dayview.html (archive: explore_custom_pages_charts.zip)
Data Source	External file with JSON object created in regular intervals by dzVents using persistent data (datajsonfile)
Data Source Location	~domoticz/www/templates/thermostat_1dayview_data.json
Data Content	JSON array “result” with JSON data in key result.Data
Chart Additions	Table with row gauges; row refresh button + info; row table 1 day view

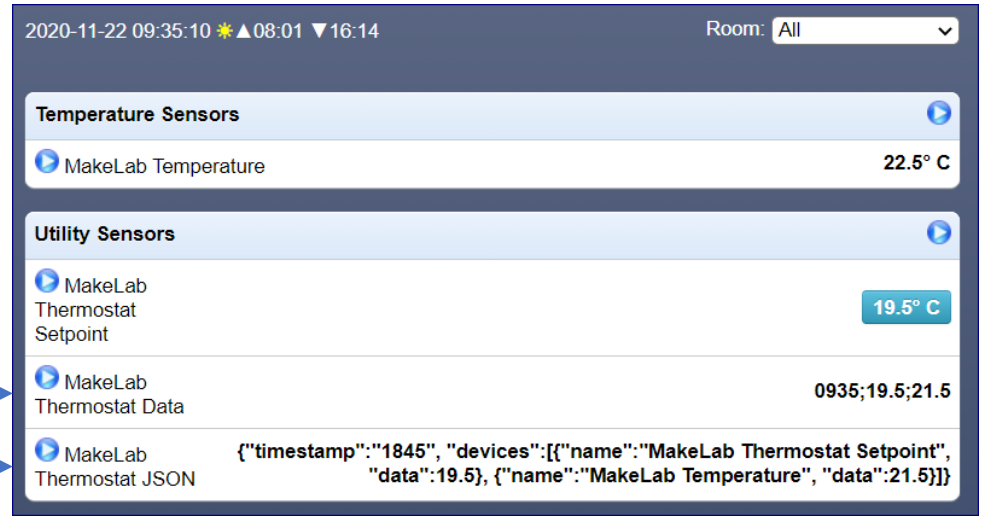
Automation Scripts dzVents

On Off thermostat_data_textcsv

```
]]--

-- Idx of the devices
local IDX_SP = 30   -- Thermostat Temperature SetPoint (SP); Device: Thermostat, SetPoint
local IDX_PV = 31   -- Thermostat Temperature Process Value (PV); Device: Temp, LaCrosse TX3
local IDX_TS = 42   -- Text device holding the data as CSV string; Device: General, Text

return
{
    on =
    {
        timer =
        {
            'every 5 minutes at 00:00-23:59',
            -- 'every minute',
        },
    },
    logging =
    {
        level = domoticz.LOG_INFO,
        marker = 'THERMOSTATDATATEXTCSV',
    },
    execute = function(domoticz)
        -- Store the new data in the virtual text sensor as CSV string (max length 200)
        -- Content is: hhmm,sp,pv
        local data = ("%s%s;%.1f;%.1f"):format(
            string.format("%02d", domoticz.time.hour),
            string.format("%02d", domoticz.time.minutes),
            domoticz.utils.round(domoticz.devices(IDX_SP).setPoint, 1),
            domoticz.utils.round(domoticz.devices(IDX_PV).temperature, 1)
        )
        -- Log the value & update text device
        domoticz.log(data)
        domoticz.devices(IDX_TS).updateText(data);
    end
}
```

On Off thermostat_data_textjson

```
local IDX_SP = 30   -- Thermostat Temperature SetPoint (SP); Device: Thermostat, SetPoint
local IDX_PV = 31   -- Thermostat Temperature Process Value (PV); Device: Temp, LaCrosse TX3
local IDX_JSON = 43   -- Text device holding the data JSON string; Device: General, Text

return
{
    on =
    {
        timer =
        {
            'every 5 minutes at 00:00-23:59',
            -- 'every minute',
        },
    },
    logging =
    {
        level = domoticz.LOG_INFO,
        marker = 'THERMOSTATDATATEXTJSON',
    },
    execute = function(domoticz)
        -- Store the new data in the virtual text sensor as JSON object (max length 200)
        local jsonData = (
            '{"timestamp":"%s%s", "devices":[{"name":"%s", "data":%.1f}, {"name":"%s", "data":%.1f}]}'):format(
            string.format("%02d", domoticz.time.hour),
            string.format("%02d", domoticz.time.minutes),
            domoticz.devices(IDX_SP).name,
            domoticz.utils.round(domoticz.devices(IDX_SP).setPoint, 1),
            domoticz.devices(IDX_PV).name,
            domoticz.utils.round(domoticz.devices(IDX_PV).temperature, 1)
        )
        -- Log and Update
        domoticz.log(jsonData)
        domoticz.devices(IDX_JSON).updateText(jsonData)
    end
}
```



dzVents - CSV String

Example Text Device Value CSV String HHMM;Value1;ValueN

```
0913;18.5;21.5
```

Example snippet dzVents timer trigger to create the CSV string & update the text device

```
local IDX_SP = 30   -- Thermostat Temperature SetPoint (SP); Device: Thermostat, SetPoint
local IDX_PV = 31   -- Thermostat Temperature Process Value (PV); Device: Temp, LaCrosse TX3
local IDX_TS = 42   -- Text device holding the data as CSV string; Device: General, Text

return
{
  on = {
    timer = {
      'every 5 minutes at 00:00-23:59’
    },
  },
  logging = {
    level = domoticz.LOG_INFO, marker = 'THERMOSTATDATA’,
  },
  execute = function(domoticz)
    -- Store the new data in the virtual text sensor as CSV string (max length 200): hhmm,sp,pv
    domoticz.devices(IDX_TS).updateText(("%s%s;%.1f;%.1f"):format(
      string.format("%02d", domoticz.time.hour),
      string.format("%02d", domoticz.time.minutes),
      domoticz.utils.round(domoticz.devices(IDX_SP).setPoint, 1),
      domoticz.utils.round(domoticz.devices(IDX_PV).temperature, 1)
   ));
   -- Log the value
   domoticz.log(domoticz.devices(IDX_TS).text)
  end
}
```

Date	
2020-11-22 09:10:00	0910;19.5;22.5
2020-11-22 09:05:00	0905;19.5;18.5
2020-11-22 09:00:00	0900;19.5;18.5

dzVents - JSON Object

Example Text Device JSON Object – each datapoint has a JSON object with in this case 2 devices

```
{
  "result" :
    [{"Data":"SEE BELOW","Date":"2020-11-13 18:00:00","User":"","idx":"1999"}, ... ],
  "status":"OK","title":"TextLog“
}
The Data key is a JSON string:
"Data" : "{
    "timestamp":"1800","devices":[
    {"name":"MakeLab Thermostat Setpoint", "data":17.5},
    {"name":"MakeLab Temperature", "data":16.5}]
  }"
```

Example snippet dzVents timer trigger to create the JSON object & update the text device

```
local IDX_SP = 30   -- Thermostat Temperature SetPoint (SP); Device: Thermostat, SetPoint
local IDX_PV = 31   -- Thermostat Temperature Process Value (PV); Device: Temp, LaCrosse TX3
local IDX_JSON = 43   -- Text device holding the data JSON string; Device: General, Text

local jsonData = (
  '{"timestamp":"%s%s", "devices":[{"name":"%s", "data":%.1f}, {"name":"%s", "data":%.1f}]}'):format(
  string.format("%02d", domoticz.time.hour),
  string.format("%02d", domoticz.time.minutes),
  domoticz.devices(IDX_SP).name,
  domoticz.utils.round(domoticz.devices(IDX_SP).setPoint, 1),
  domoticz.devices(IDX_PV).name,
  domoticz.utils.round(domoticz.devices(IDX_PV).temperature, 1)
)
domoticz.devices(IDX_JSON).updateText(("%s"):format(jsonData))
```

Date	Data
2020-11-21 18:45:00	{"timestamp":"1845", "devices":[{"name":"MakeLab Thermostat Setpoint", "data":19.5}, {"name":"MakeLab Temperature", "data":21.5}]}
2020-11-21 18:40:00	{"timestamp":"1840", "devices":[{"name":"MakeLab Thermostat Setpoint", "data":19.5}, {"name":"MakeLab Temperature", "data":22.5}]}
2020-11-21 18:35:00	{"timestamp":"1835", "devices":[{"name":"MakeLab Thermostat Setpoint", "data":19.5}, {"name":"MakeLab Temperature", "data":22.5}]}