Collecting Data from LabJack devices into the Database

The function ljlist_all() gives a description of all the connected LabJack devices. The information obtained here is used to configure devices later.

$$\text{ljlist\_all}(\text{"ANY"} , \text{"ANY"}) =$$

Serial Number	Device Type	Connection Type	IP Address
"470018874"	"T7"	"ETHERNET"	"192.168.1.7"

Next, the first T7 device AIN temperature configuration form is used to set the thermocouple at pin AIN0.

$$\text{f1} := \text{ljaintT7\_config\_form}(0 , \text{"AIN Form\_301"})$$
$$\text{ljaintT7\_config\_form\_configure}(\text{f1})$$

LabJack - AIN Configuration Form

Device Type   Connection Type   Device ID

T7   ANY   ANY

AI(0:3)   AI(4:7)   AI(8:11)   AI(12:13)   All

AI0

Thermocouple

Offset   0.0

Slope   1.0

Type   Type E

AIN Channel For   T Sensc
T Reading

Temperature Unit   K

AI1   AI2   AI3

Configure

The second LabJack T7 device is configured to read the temperature at AIN0. The same principle as the first device is used.

```
f2 := ljaintT7_config_form(0 , "AIN Form 302")
ljaintT7_config_form_configure(f2)
```

LabJack - AIN Configuration Form

Device Type | Connection Type | Device ID

T7 ▼ | ANY ▼ | ANY

| AI(0:3) | AI(4:7) | AI(8:11) | AI(12:13) | All |

AI0
Thermocouple ▼

Offset | 0.0 ⏶⏷
Slope | 1.0 ⏶⏷
Type | Type E ▼
AIN Channel For T Reading | T Sensc ▼
Temperature Unit | K ▼

AI1
AI2
AI3

Configure

Reading data

The first and second device should be opened. The temperature is read from both devices and stored in appropriate vectors. The devices are set to default values, and closed.

```
1  dev1 :=ljdevice_open("T7", "any", "any")
2  dev2 :=ljdevice_open("T7", "any", "any")
3  A_variable := vector_create(100, false, 0)
4  B_variable :=vector_create(100, false, 0)
5  //Read temperature
6  for(i := 0; i < 100; i += 1)
7  {
8    A_variable[i] = ljdevice_read(dev1,"AIN0_EF_READ_A")
```

```
 9
10    B_variable[i] = ljaddress2type(dev2, "AIN0_EF_READ_A")
11  }
12  ljdevice_write(dev1, "IO_CONFIG_SET_CURRENT_TO_DEFAULT", 1)
13  ljdevice_close(dev1)
14  ljdevice_write(dev2, "IO_CONFIG_SET_CURRENT_TO_DEFAULT", 1)
15  ljdevice_close(dev2)
```

Adding data to the Database

The two vectors that contain the temperature data from the first and second T7 device are added to the database LabjackT4T7.db. MatDeck provides a Database Browser which can be used to access the aforementioned database. The GUI form used for the Database Browser is shown below.

```
16  database_write("LabjackT4T7.db", "T7_dev1", A_variable)
17  database_write("LabjackT4T7.db", "T7_dev2", B_variable)
```

$$f3 := database\_form\big(0\ ,\ "Database\ Toolkit\ 1"\big)$$