# Surface unit user documentation

### General

- Main user is “drill” with password “raspberry”

- The terminal is opened by:

Start button (lower left corner) → System tools → LXTerminal

- Data-sheets and manuals for instruments are located at ~/surface-unit/documentation

### Start-up script

- Launches automatically on startup

* 1. - Located at ~/drill-bootstrap.sh

1. - Sets static IP address to 10.2.3.10 (needed for EGRIP camp communication)
2. - Synchronizes wall clock (needed for log file timestamps)
3. - Launches scripts that communicate with the (1) load cell, (2) winch encoder (depth counter) , and (3) drill. All values are set in the local REDIS server. These scripts must run for the drill control software to be functional!
4. - Launches drill control graphical software that interacts with drill through the REDIS server. Newest drill software loads by default (to launch old version, see below).

### New drill software (2022+)

To launch the drill control software, run the follow command in the terminal:

python3 ~/surface-unit/drill-control.py

If date is not set correctly, the software might not start but leave error messages in the terminal (this often happens if the time-keeping battery dies in cold conditions). In that case, set the time manually by running in the terminal:

sudo timedatectl set-ntp false

sudo timedatectl set-time “2022-1-1”

### Old drill control software (2018/2019)

To launch the older drill control software used in 2018/2019, run the follow command in the terminal:

python3 ~/surface-unit/legacy/drill\_surface.py

Notice that this version of the software requires the start-up script to have run so that communications are live with the load cell, winch encoder, and drill.

### Logs and drill plots

Logs are always backed up on the EGRIP “bob” server at:

10.2.3.1/public/drill-logs

Daily and sub-daily plots are generated automatically by “bob” and stored at:

10.2.3.1/public/drill-logs/plots

To plot daily logs yourself, run:

python3 ~/surface-unit/logging/plot-log.py /mnt/logs/drill.log.YYYY-MM-DD HOUR\_START HOUR\_END PLOT\_ORIENTATION /output/path

e.g.:

python3 ~/surface-unit/logging/plot-log.py /mnt/logs/drill.log.2022-07-13 8 24 1 ./

### Scripts that are run on regular interval (crontab -e)

See crontab file for details; in short, it synchronizes the computer clock (if internet is available) and drill log with “bob” server at:

smb://10.2.3.1/public/drill-logs

### Software repository

All drill computer software (including logs plotting scripts) can be found at:

https://github.com/nicholasmr/surface-unit

or

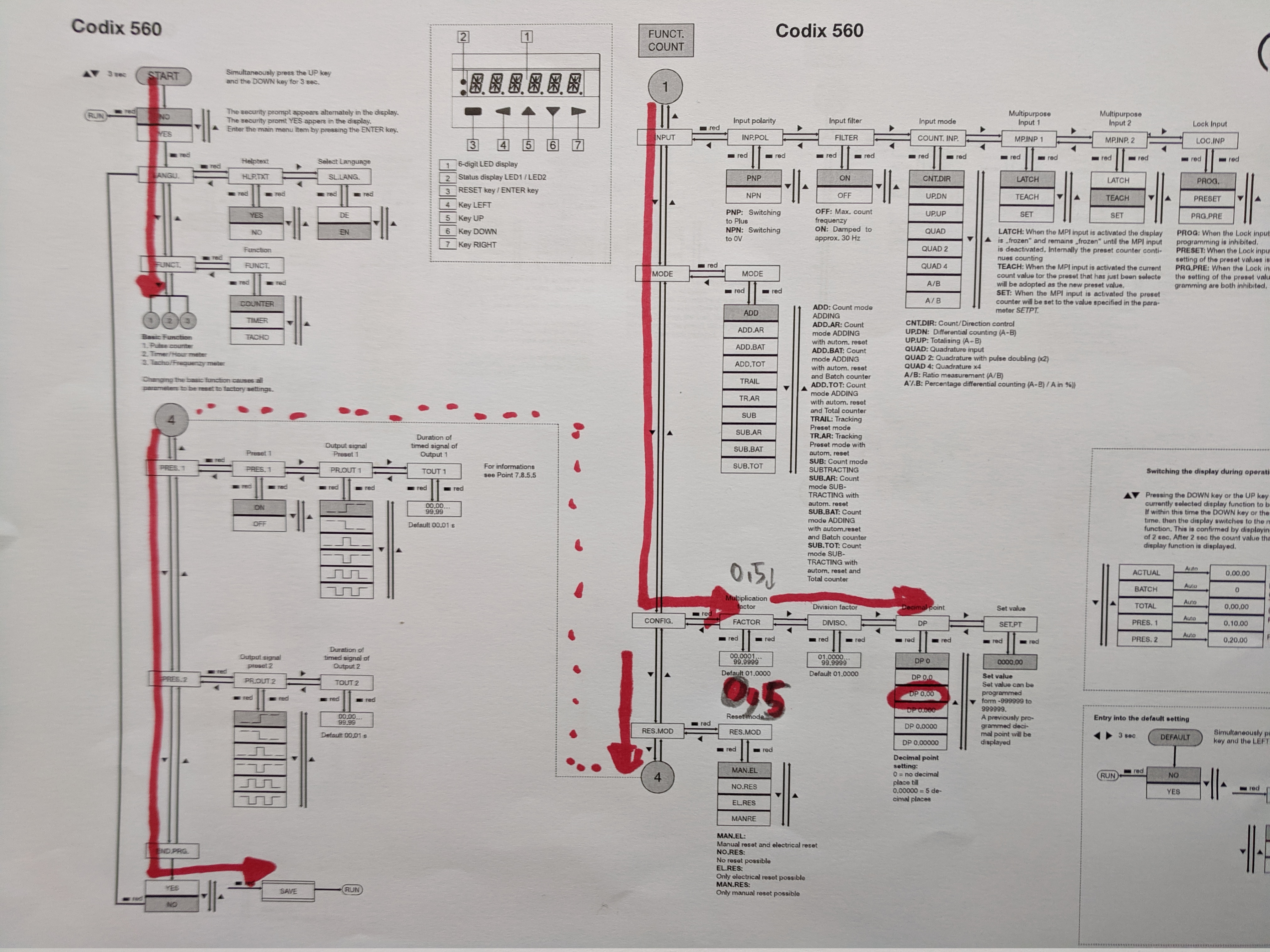
smb://10.2.3.1/public/EGRIP%20drill/software/

### If unable to resolve hostnames

Move “dns” forward (immediately after “myhostname”) in */etc/nsswitch.conf*

### How to calibrate depth counter

Full manual available at *~/surface-unit/documentation*



### Connections – what is what

