

## Technical Specifications

### STAUBLI Scope of supply:

S.No	Description	Quantity
1.	S3060 Dobby with Harness Motion for 220 cm Rapier loom – As per STAUBLI drg. F435 200 00 B & F390 421 35B	2 Nos
2.	C4D Dobby controller	2 Nos
3.	1858-5 Programming software	2 Nos
4.	Pocket Terminal type 1859-4	2 Nos
5.	Installation & commissioning	For 1 set of Dobby
6.	Training	For 1 set of Dobby
7.	Operation & maintenance manuals (hard copy)	2 Sets

### Dobby Specifications:

Following are the key specifications for the electronic rotary dobbie with undermotion linkages proposed for the development of “High speed Shuttleless loom” operating at 750rpm.

Nominal reed width	: 220 cm
Speed	: 750 rpm (6 frames shall be operational)
Total no of frames	: 20
Density/Total no of yarns	: 180 ends/inch (Yarn range: Ne 118 – Ne 2)
Clamping type	: DRC 10
Dobby mounting	: Right Side

### Dobby Controller Specifications:

1. Power requirement: Voltage 230VAC, Frequency 50Hz
2. List of signals from Weaving machine to C4 Dobby Controller: **Dry contacts** to be provided to Dobby Controller
  - a) Loom running
  - b) Slow motion forward
  - c) Slow motion reverse
  - d) Color Pattern timing
3. List of signals from C4 Dobby to weaving machine:
  - 3.1. Authorisation signals: 4 Relay outputs with contact rating 2A at 30VDC is required
    - 1) Watch dog
    - 2) Authorization general
    - 3) Authorization forward motion
    - 4) Authorization reverse motion
  - 3.2. Auxiliary outputs: S1-S16 signals required is to be of **NPN type**
    - 1) S1-S8: COLOR SELECTOR
    - 2) S9-S10: LENO
    - 3) S11: CRAMMING
    - 4) S12-S13: SELVEDGE
    - 5) S14: TAKEUP SIGNAL
  - 3.3. Timing for electronic outputs required is EPT (externally from weaving machine)

3.4. Cable length:

- 1) From Dobby controller C4D to weaving machine-8m is required
  - 2) From Dobby controller C4D to dobbie machine-5m is required
4. Suitable STAUBLI terminal 1859-4 and Programmer 1858-5 to be provided as per C4 controller specifications.
- 1) Power cable for STAUBLI terminal 1859-4
  - 2) PC connection cable for STAUBLI terminal 1859-4
  - 3) Connection cable between STAUBLI terminal 1859-4 and Dobby controller C4D

For more details refer technical document F39436040C.



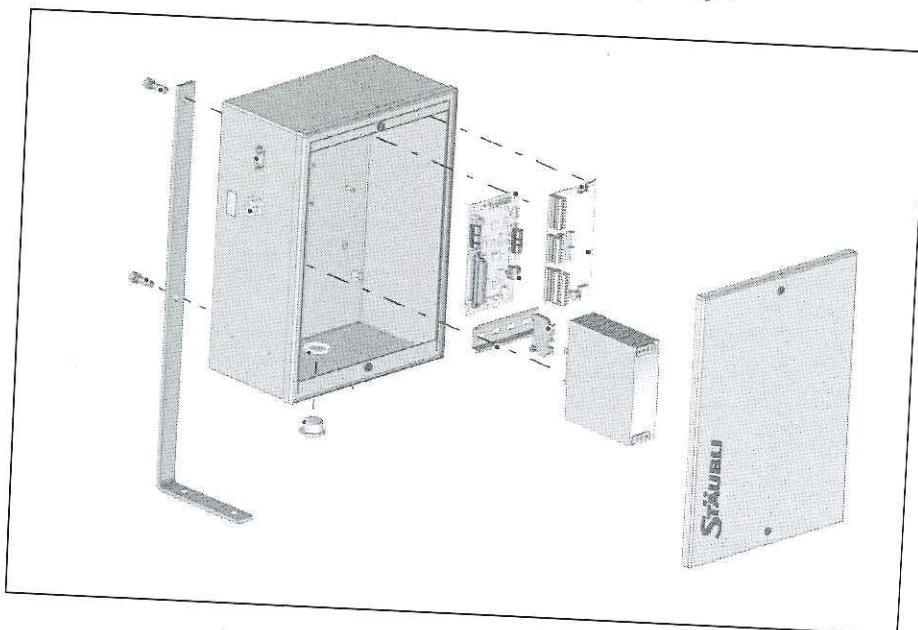
## 1. General

The dobbie controller must be located next to the dobbie machine.  
It is connected to the dobbie machine with a cable for the magnets and sensors signals.  
It is connected to the weaving machine with another cable for the weaving machine status signals.

### Power requirement

The dobbie controller must be connected in the WM cabinet after the main switch to the main customer supply voltage.  
When WM is turned OFF, dobbie controller main voltage must be turned OFF as well  
Voltage according to customer main supply voltage.  
Maximum consumption 160VA.

*Please specify customer main voltage value and frequency :*

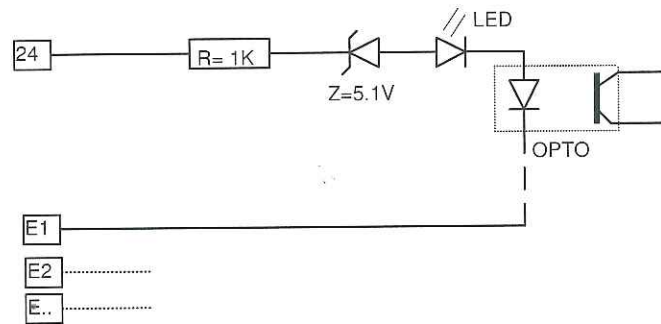


### Dobbie controller specifications:

- Maximum 28 outputs for harness frames
- Maximum 16 outputs for colors, regulator, take up signals
- Maximum 4 relay outputs for authorization signals

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## 2. Signals from Weaving Machine to C4 Dobby controller.



The dobbie controller needs the following signals:

- Loom running
- Slow motion forward
- Slow motion reverse
- Color Pattern timing (option)

The weaving machine should provide them with dry contact or NPN transistor.  
Any weaving machine motion is prohibited without any status information to dobbie controller

## 3. Signals from C4 Dobby to controller Weaving Machine.

3.1) Relays outputs: W1-W2, S10-11, S20-21, and S30-31

Contact rating            0.5A at 125Vac  
                                      2A at 30Vdc

Maximum voltage        125Vac            125Vdc  
Maximum current        2A

The dobbie controller provides the following signals:

- Watch dog. (Contact normally close) this contact must be used on the WM side to disable any motion when it opens.
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- Authorization general (contact normally close) this contact must be used by the WM to disable the forward motion when it opens.
- Authorization forward motion (contact normally close) this contact must be used by the WM to disable the forward motion when it opens.
- Authorization reverse motion (contact normally close) this contact must be used by the WM to disable the reverse motion when it opens.

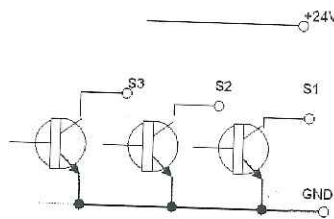
3.2) Electronic outputs: S1 to S16

The electronics signals for the weft selection or any other auxiliary functions are available in two possible types.

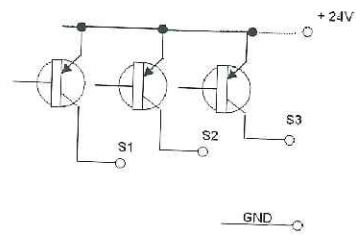
Adaptation doobby controller type C4

NPN open collector transistor (100mA / 24v max)

PNP transistor (500mA / 24V max)



Or



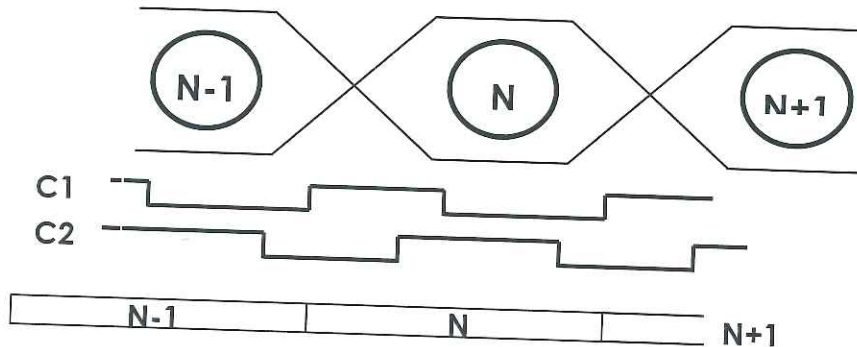
Please specify which one NPN or PNP is suitable for the Weaving Machine  
Please specify How many signals is needed and for each of them the signal name and the function purpose.

3.3) Timing for electronic outputs: S1 to S16

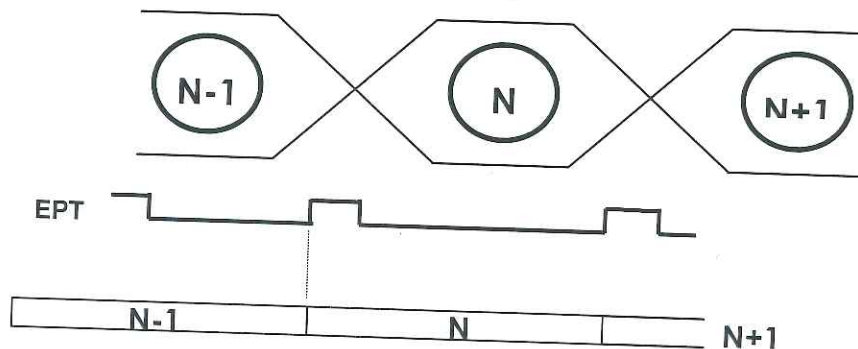
The electronics signals are provided according the doobby pattern.  
There are different possibilities for the timing.

- Internally from the doobby sensors

One of the doobby sensors signal is used to trigger the doobby controller output signals.



- Externally from the weaving machine signal.



The EPT signal of the WM is used to trigger the C4 outputs signal change.

- Specify which timing is suitable for the WM.

- Specify also the output signal synchronization.

(Signal synchronized with the shed opening or in advance of 1, or more pick)

3.4) Cables:

Staubli provides the cables between:

- C4 and the Weaving Machine.
- C4 and the doobby machine.

- Specify for both cables the suitable length.

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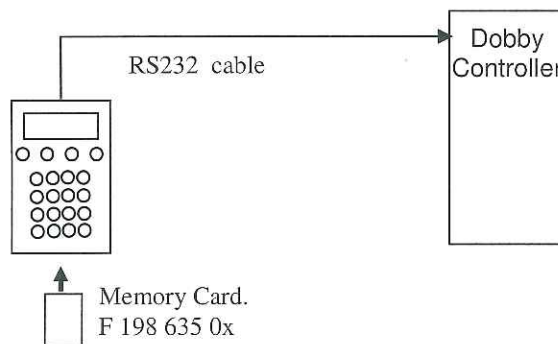
#### 4. Dobby pattern programming.

- Maximum pattern file length is 13000 picks
- C4 controller can use single pattern or weaving program.

The dobby pattern file can be downloaded into the controller memory using any Staubli programming devices 1858-2,3,4 aor 5, or Staubli terminal devices 1859-2,3 or 4. The weaving program file can be edited and downloaded into the controller memory only using Staubli terminal device type 1859-4:

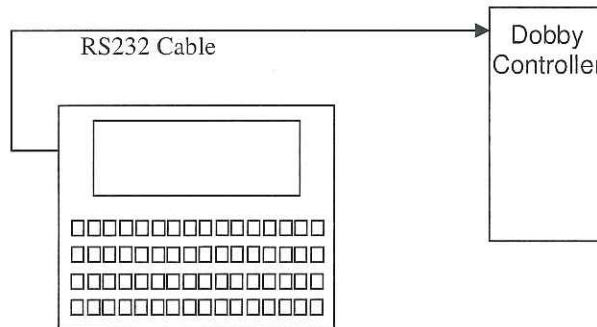
##### 4.1) Staubli Terminal 1859/2 /3 or 4

The file transfer is made using Staubli communication protocol



##### 4.2) Programmer 1858-2 /3 /4 or /5

The file transfer is made using Staubli communication protocol



*Signature*