STAGE CV

STAGE INDICATORS

STAGE COUNT

STAGE GATE MODE

TEMPO

PORTAMENTO

STAGES

GATE TIME / CH2 CV SET

RUN / STOP

RESET / MENU

PREV

NEXT

MODE

SPLIT MODE

VOLTAGE MODE / ● GLIDE PROG

CH1 CV OUT

CH1 GATE OUT

CH2 CV/GATE OUT / SYNC OUT

MIDI OUT

MIDI IN / RESET IN

CLOCK IN/OUT

RYK M185 SEQUENCER

RYK M185 USER MANUAL

The **M185** is a multi-stage dual-channel MIDI & CV sequencer, with stage selectable gate modes.

The **M185** requires a +/- 12V power supply via the supplied standard 2x5 pin-socket ribbon cable .
The red stripe of the ribbon cable, -12V side, must be oriented to the "Red stripe" text on the PCB.

1.1 FUNCTIONS

STAGE CV
Turn the knob to set the CV for the stage.

STAGE INDICATORS
Red = Current stage(s)
Orange = Gate High stage(s)
Green = Glide on

1
2
3
4
5
6
7
8

STAGE COUNT
Slide to select the pulse count for the stage.

STAGE GATE MODE
Slide to select the Gate Out activity for the stage:

- - - - -   **Off:** Gate low

• - - - -   **Single gate:** Gate high on the first clock pulse of the stage, then low for remaining clock pulses of the stage.

• • • • •   **Multiple gate:** Gate high on every clock pulse of the stage.

• - • - •   **Multiple gate / 2:** Gate high on every 2nd clock pulse of the stage.

• - - • -   **Multiple gate / 3:** Gate high on every 3rd clock pulse of the stage.

• - - - •   **Multiple gate / 4:** Gate high on every 4th clock pulse of the stage.

? ? ? ? ?   **Probability / Programmable gate:** Probability: gate is randomly high or low for each clock pulse of the stage.
Programmable: Allow for a programmable gate pattern to be set [*SETTINGS MENUS page5*]

•••••   **Long:** Gate high for the entire length of the stage.

TEMPO
Turn the knob to set the tempo.

PORTAMENTO
Turn the knob to set the amount of glide to the CH1 CV Output. [This can be set on or off per stage, in ● **GLIDE PROG**, see **VOLTAGE MODE** page5].
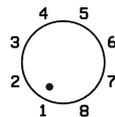
STAGES
Turn this knob to set the number of stages used in the sequence.

When in Fixed mode, the overall length of the sequence is set in multiples of 4 clock pulses. [See below Mode Control - Fixed Sequence Length]
When in Split Mode, this determines the last stage of sequence B.

GATE TIME/CH2 CV SET
Turn this knob to set the length of the gate time.

When in ● **GLIDE PROG**, and the sequence is sopped, turn this knob to set the Stored CV value for the stage indicated by the flashing Green LED.
The Stored CV values are used to control the velocity of MIDI Notes, and CH2 CV when not using ᴬ/ᴮ split mode.

RUN / STOP
Press this button to start or stop the internal sequence clock .

[NB If using an external clock, it is a good idea to stop the internal clock first !]

In the **SETTINGS MENUS**, the R/S button is used to escape the current menu level.

RESET
Push this button to reset the sequence to the first stage.

Press for approx 3 secs, to activate the SETTINGS MENU.

Whilst in a Settings menu, push this button to toggle a function or enter a sub menu.

When in ● **GLIDE PROG** , push this button to toggle On/Off the glide setting for the stage indicated by the flashing Green LED.
Stages with glide set On, are indicated by a solid Green LED indicator.

PREV / NEXT
Push to step back or forward through the Sequence or Menus.
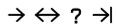
→ ↔ ? →| **MODE**
Slide this switch to set the sequence play mode.

→ **Forward:** Plays forwards in ascending order.
Sequence will reset after the last stage set by the Stages-Control.

↔ **Ping-Pong:** Plays forwards, when reaching the last stage, the direction reverses and plays back towards the first stage.

? **Random:** Plays stages in random order, from the range of stages set by the Stages control.
In AB Split Mode, will randomly choose sequence A or B, to play in Forward mode.
When in Split Mode $\frac{A}{B}$, the sequencer will randomly choose stages from sequence A, whilst sequence B plays in Forward mode.

→| **Fixed Length:** Play forwards, until a fixed number of clock pulses have elapsed, before restarting from the first stage.
The sequence length of clock pulses is determined by the value of the Stages Control multiplied by 4.

FIXED LENGTH TIP: Set the **STAGES** to "4"; the sequencer will play 16 clock pulses of the sequence before resetting.
The sequence length is not afftected by the total value of the Stage Counts.
This mode is great for locking a sequence to a drum-machine for repeating groove type sequences.

A AB $\frac{A}{B}$ *** **SPLIT MODE**
Slide this switch to select and set the Split Mode settings

A **No Split:** Plays without any split.

AB **Serial Split Mode:** Plays Sequence A "X" times, then plays Sequence B "Y" times.

$\frac{A}{B}$ **Parallel Split Mode:** Simultaniously plays Sequence A and Sequence B.
Sequence A CV/GATE are ouput to CH1 and MIDI Note output.
Sequence B CV/GATE are output to CH2.

*** Enables setting the split point and repeat counts for A and B Sequences.

Use ● **PREV/NEXT** controls to move the Green LED cursor to define the Split point [start of Sequence B], then press
● **RESET** to set.

Use ● **PREV/NEXT** controls to move the Green LED cursor to define the repeat count of Sequence A, then push
● **RESET** to set.

Use ● **PREV/NEXT** controls to move the Green LED cursor to define the repeat count of Sequence B, then push
● **RESET** to set.

SERIAL SPLIT MODE TIP: To set up an AAAB type structure, where Sequence A plays STAGES 1-4 three times, then Sequence B plays STAGES 5-8 once;

Set the following values 5, 3, 1 respectively. 5 = Split point, 3 = A repeats, 1 = B repeats.

When in $\frac{A}{B}$ Split Mode, the sequencer will play both A & B sequences simultaneously, but the B repeat count is used as a clock-count multiplier.

Eg. If B repeats are set to 3, and a Stage Count on Sequence B is set to 4, then that stage will play 12 clock pulses. [3 x 4 = 12]

2V Q   ● 5V Q   5V   **VOLTAGE MODE**
Slide this switch to set the voltage range of the CV.
For CH1 this can be set to 2V Quantised, 5V Quantised, or 5V Non-Quantised.
For CH2 2V or 5V Quantised only.

● **GLIDE PROG** is used to set the glide ON/OFF per stage. When the sequencer is **stopped**, Stored CV values for CH2 CV and MIDI Note Velocity can be set.

To set the glide per stage, use 🔵 **PREV/NEXT** controls to select stage, indicated by the flashing Green LED.
Push 🔴 **RESET** to toggle On/Off the Glide setting for this stage. Stages with glide set On are indicated by a solid Green LED.

When the sequencer is **stopped**, the **GATE TIME** control is used to adjust the Stored CV value of the stage indicated by the flashing Green LED. The Stored CV values are used for the velocity of MIDI Note output.
When not in $\frac{A}{B}$ Split Mode, the Stored CV values are output from the CH2 CV output.

NB On the back of the module there is a micro switch to select 2V or 5V for the non-quantised CH1 CV range.

〜⊓   **CH1 CV OUT**
CV output from the current stage in the Sequence.
[NB Stages set to Gate Mode Off do not update the CV Output]

⊓   **CH1 GATE OUT**
Gate output from the current stage.

〜⊓ ⊓⊓   **CH2 CV GATE / SYNC OUT**
CV output for the Stored CV of current stage. Use the supplied Y-cable. CV [Black jack], Gate [Grey jack].

In $\frac{A}{B}$ Split Mode, the CV and Gate from Sequence B are output from CH2.

Sync pulse for start of sequence, is sent via the Gate [Grey jack] when using the supplied Y-cable. Except when using $\frac{A}{B}$ Split mode.

TIP: If using only the CV of CH2, a standard mono jack cable can be used instead.

🕐 ↕   **CLOCK IN / OUT**
Can be used for clock input, or clock output.

[NB If using an external clock, it is a good idea to stop the internal clock first !]

🕐 ↑   **MIDI IN / RESET IN**
Can accept MIDI CLOCK sync from external units such as drum machines, and also MIDI NOTE input for shifting the Root Note key of the sequence.

When the RESET menu option is selected, this input becomes a standard RESET input.

🕐 ↓   **MIDI OUT JACK**
Outputs MIDI NOTES from CH1, and MIDI CLOCK sync, with stop, start, reset commands.

NB On the back of the module PCB are two micro switches to set the type of TRS MIDI. The supplied cable is Type B, which we recommend.

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2.1 SETTINGS MENUS

To access the settings menus, push 🔴 **RESET** for approx 1 sec, until the animation of Red LEDs appears.

2.2 LEVEL 1 TOP MENU

The top level SETTINGS MENU is indicated by Green Toggle ON/OFF LEDs, and a Red cursor LED.

Use 🔵 **PREV/NEXT** controls to move the Red cursor LED to the required item, then push 🔴 **RESET** to toggle the item ON or OFF, or if available enter the sub menu for that item.

When in the SETTINGS MENUS, Push ⚫ **RUN/STOP** to escape the current menu level.

1. Scale Quantise Sub Menu
[see page 5 for sub menu]

2. Programmable Gate Pattern Sub Menu
[see page 5 for sub menu]

3. Long Gate Slur ON/OFF
When set ON, the Gate is not cleared at the end of Long Gate mode, allowing for a continuous gate to the next stage.

TIP: Set glide on for the stage after a Long Gate with slur, to create a TB303 style slide.

4. A + B CV offset ON/OFF
When set ON, the CV from Sequence B is added to the CH1 CV to create root note offsets, or key changes. [NB MIDI NOTE input root note offset will be deactivated]

TIP: Create a looped pattern in Sequence A, then using a slower pattern in Sequence B to change the key of Sequence A.

5. Clock multiply ON/OFF
When set ON the sequencer clock [internal or external] is doubled, enabling 16th notes from 8th note clock. This is especially suited to syncing with units that have 2PPQ clocks such as Korg Volca units or Teenage Engineering Pocket Operator units.

6. MIDI Input / Reset Input Toggle
The MIDI Input jack can be switched between MIDI IN [OFF] or as Reset Input [ON]. When using as a Reset Input please switch the MIDI TRS switch on the back of the module to position 'B'

7. Sequence B Gate -> Reset ON/OFF
When set to ON, this enables Resets of Sequence A to be triggered by a Gate high from Seqeunce B

8 - Pre / Post Scale Root Note offset
Root note, A+B CV, and MIDI IN offsets can be applied Pre [OFF] or Post [ON] scale quantise.

LEVEL 1 TOP MENU

1 - Scale Quantise selection Sub Menu
2 - Programmable Gate Pattern Sub Menu
3 - Long Gate Slur ON/OFF
4 - A + B Sequence CV offset ON/OFF
5 - Clock multiply ON/OFF
6 - MIDI Input / Reset Input Toggle
7 - Seqeunce B Gate -> Reset ON/OFF
8 - Pre / Post Scale Root Note offset

2.3 LEVEL 2 SUB MENUS

The level 2 SUB MENUS are indicated by Red toggle ON/OFF LEDS, and a Green cursor LED. ⬤ **RUN/STOP** is used to escape the Sub Menu, back to the Top Menu.

1. Scale Quantise Sub Menu
Use 🔵 **PREV/NEXT** to move the Green LED to the required stage, then push 🔴 **RESET** to select the scale. Push **once** for scales 1-8 [Red LED], push **twice** for scales 9-16 [Orange LED], see below.

Root Note setting.
Turn the **GATE TIME** knob to adjust the scale root note from C to B in semitones.

2. Programmable Gate Pattern Sub Menu
Allows setting of custom gate patterns for **GATE MODE "?????"**

Push 🔵 **PREV / NEXT** to move the Green cursor LED to the required position, then push 🔴 **RESET** to toggle each position ON/OFF, indicated be lit Red LEDs.

Probability random gate is set by turning off all the positions.

TIP: Tip to set up a gate pattern that plays the 1st, 4th, 5th clock pulses, set the LEDs to the following pattern

🔴 ⚪ ⚪ 🔴 🔴 ⚪ ⚪ ⚪

Once the required settings have been chosen, push ⬤ **RUN /STOP** to exit the menu back to Level 1 menu, push again to return to sequencer mode.

SCALE QUANTISE SUB MENU

1 - OFF/Chromatic 🔴
2 - Major 🔴
3 - Minor 🔴
4 - Major 6th 🔴
5 - Minor 6th 🔴
6 - Major 7th 🔴
7 - Minor 7th 🔴
8 - Iwato 🔴

9 - Diminished 🟠
10 - Pentatonic major 🟠
11 - Pentatonic minor 🟠
12 - Dorian 🟠
13 - Phrygian 🟠
14 - Lydian 🟠
15 - Mixolydian 🟠
16 - Locrian 🟠

5
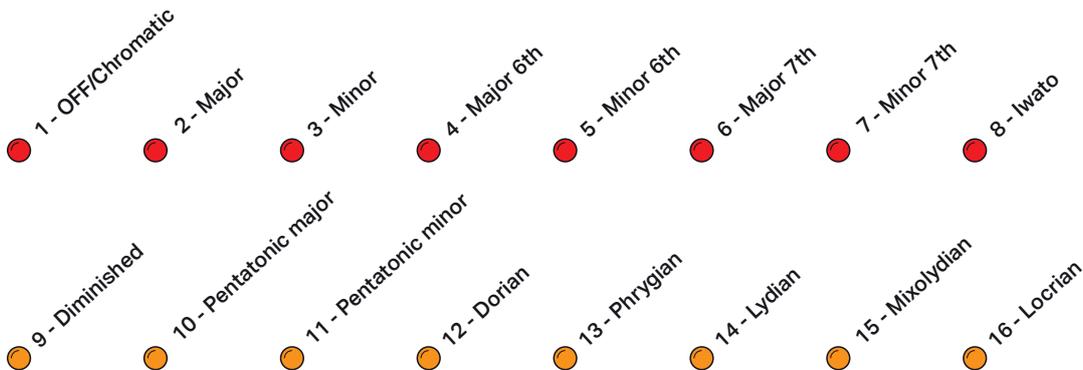
3.1 SEQUENCER UTILITY MODES

There are several utility modes that can be accessed by holding down certain buttons whilst switching on power to the **M185**.

3.2 MIDI TO CV MODE

With this mode the **M185** can be used as a MIDI to CV converter.

Push 🔵 **PREV** [left blue] whilst powering up, continue to hold until the LEDs stop moving, before releasing the button.

Connect a MIDI source such as a keyboard to the MIDI IN socket via the supplied MIDI/TRS cable.
The MIDI note input is converted to CV and GATE output from CH1.
Velocity or modulation CVs are output from CH2.
Slide the **MODE** switch to select one of the following options for the CH2 CV output.

→ CV2 outputs the Velocity of the MIDI note.

↔ CV2 outputs the Bender Wheel data.

? CV2 outputs the Modulation Wheel data.

Turn the **Stages knob** to select the MIDI Channel.

3.3 - UTILITY MENU

Push ⚫ **RUN/STOP** whilst powering up until the LEDs stop moving, before releasing the button.
The UTILITY MENU is indicated by Green Toggle ON/OFF LEDs, and a Red cursor LED.

Use 🔵 **PREV/NEXT** controls to move the Red cursor LED to the required item, then push 🔴 **RESET** to toggle the item ON or OFF, or if available enter the sub menu for that item.

*1. Master / Slave select (*Only available for SMD assembled module)*

Two **M185** modules can be slaved together to create sequences with up to 16 stages.
User a 3x2 ribbon cable, to connect the SLAVE socket on the back of both modules.
DO NOT connect to the Expander socket, this could damage the modules.

Push 🔴 **RESET** to toggle MASTER MODE ON/OFF.
Push ⚫ **RUN/STOP** to boot the sequencer.
If succesfull Red LEDs will animated across the two modules. If there is a problem, try re-powering the modules.

2. MIDI CH & Clock Subdiv Sub Menu

Used to set the MIDI Channel for the MIDI Note output and input. Also the MIDI Clock subdivision for the MIDI clock / internal clock .

For Clock Subdivide
Push 🔵 **PREV / NEXT** to move the Red LED to the required stage to select the subdivide amount.
Each stage represents a multiple of 6, displayed by a lit Red LED.

TIP: Stage 1 = Subdivision of 6 , Stage 4 = Subdivision of 24

For MIDI Channel
Turn the **Gate Time** knob to select the MIDI IN/OUT Channel, indicated by the Green LED.

7. Hardware Test and Calibration
Do not use this menu, unless you are us !

3.4 - FIRMWARE UPDATE MODE

Push 🔴 **RESET** whilst powering up the module. The sequencer will indicate Firmware Update mode with the 2 left-most red LEDs.

Firmware is updated using MIDI sysex files transfered to the module via the MIDI input.

When shipped the firmware version is indicated on the back of the socketed microcontroller chip. Check the RYK shop website or Instagram for firmware updates.

www.rykmodular.bigcartel.com
instagram @ryk_modular