RACETIME 2

Show Jumping Program

Release 2.00

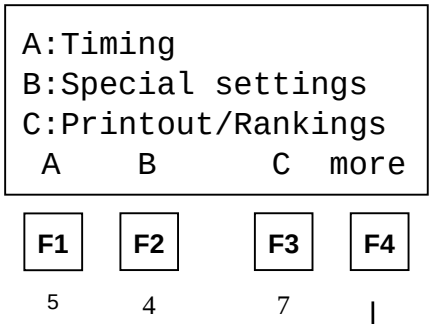
1. Index

2. Introduction

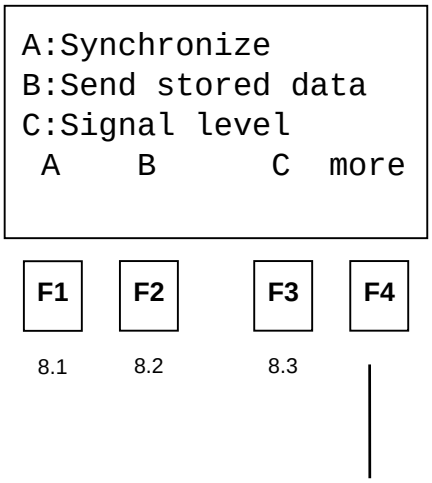
The S*how jumping* program for Racetime 2 is devised for use in show jumping events.
It is an extremely versatile program which can cover the most varied kinds of competition: in conformity with 'Table A' or 'Table C', single phase or multiple phase as well as 'Consecutive barrage'. The management of the input lines also allows maximum versatility of use, making it easy to adapt to the layout of the competition course. The software has been devised to exploit to the utmost the characteristics of the Linkgate system for radio transmission of timing signals.
The program also offers comprehensive management of printouts and rankings.

The S*how jumping* program is selected by pressing **F3** (C: Show Jumping) from the second display of the menu for the selection of function programs (see also section 2.3 of the Racetime 2 User Manual).
After choosing the program, you immediately enter the main menu, from which the various functions available can be selected.

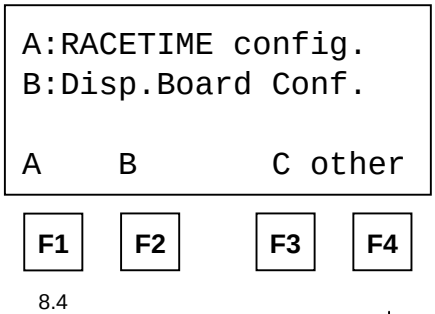
3. Main menu



Select the items with the four function keys.
F1. Enters timing mode.
F2. Accesses the specific settings for the show jumping program.
F3. Allows printing of results of memorised rides and of rankings.
F4. Shows next menu.

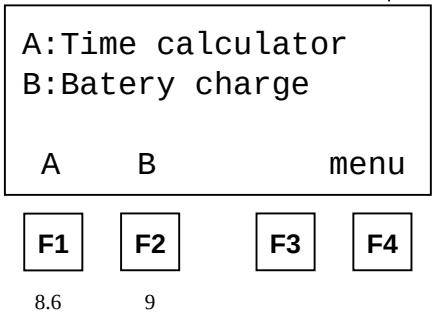


Select the items with the four function keys.
F1. Synchronization of the machine's internal clock.
F2. Transmission of previously memorised data.
F3. Checks efficiency of radio communication (Linkgate transmission system).
F4. Shows next menu.



Select the items with the four function keys.
F1. RACETIME configuration.
F2. Display board configuration

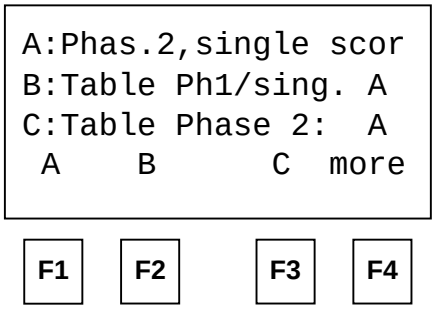
F4. Shows next menu.



Select the items with the four function keys.
F1. Sexagesimal calculator (addition and subtraction of times)
F2. Management of battery recharge.
F4. Returns you to initial menu.

4. Specific settings

'Specific settings' make it possible to modify the specific parameters of the riding program.
To return to the main menu briefly press key CE.



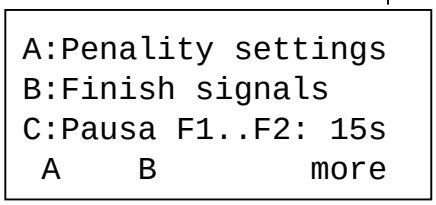
F1 F2 F3 F4

F1. Selection of the competition 'phases'. Pressing on F1 allows you to choose from the following types of competition:
- single phase
- two phases with progressive time (final competition time is calculated by adding up the times of phases 1 and 2; during phase 2, the chronometer does not start again from 0 but continues from the time of phase 1)
– two phases with separate times (the time of phase 2 starts again from 0 at the end of phase 1)
– Consecutive barrage: at the end of the first phase there is a pause (5.6) after which a second countdown for phase 2 starts.

F2. Pressing key F2 allows you to select the type of FEI reference table ('A' or 'C'). Depending on the table selected, the penalty assignment mode is modified ('points' for table 'A' and 'seconds' for table 'C'). **Note**: for specialties with two phases, the setting refers to phase 1.

F3. Selects the type of FEI reference table ('A' or 'C') for phase 2. This configuration does not appear for single phase competitions.

F4. Accesses the following page of specific settings.



F1 F2 F3 F4

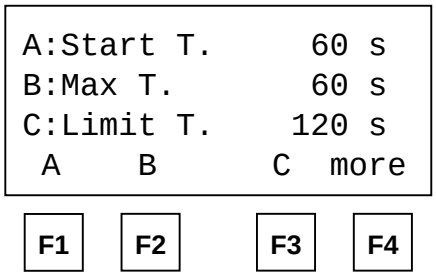
4.1 4.2

F1. Accesses the submenu for the setting of the preset values of time corrections and penalties.

F2. Accesses the submenu for the choice of types of signal used for the finish of phase 1, the start of phase 2 and the final finish.

F3. Allows you to set the pause time between the end of phase 1 and the start of countdown for phase 2. This setting only applies to the '**Consecutive Barrage**' specialty, and so only appears on the display if this specialty has been selected. Press F3 and then modify the value and confirm with Enter.

F4. Accesses the following page of specific settings.



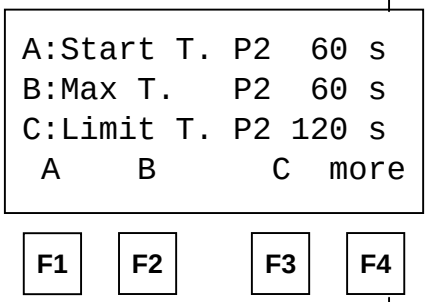
Setting of start times (countdown), the maximum time and the time limit for single phase rides or for the first phase of consecutive phase rides.

F1. Setting of start time. Setting 0 (zero) disactivates the countdown function and the horse can start without time limits.

F2. Setting of the maximum time above which penalties (points or seconds, depending on the table being used) are automatically applied to the competition time.

F3. Setting of time limit above which the horse is automatically eliminated from the competition. It is automatically preset to a value double that of the value of the maximum time. Naturally, it does not accept values lower than the maximum time.

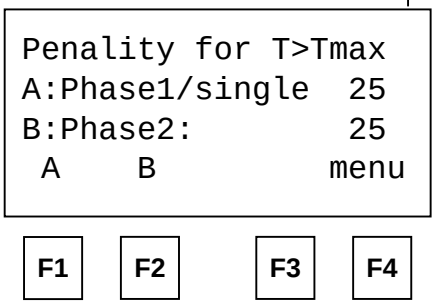
F4. Accesses the following page of specific settings.



If one of the '2-phase' modes has been selected, the maximum times and time limits for the second phase can be set.

Note: if the two-phase mode with progressive time has been selected, the maximum and limit times and time limits refer to the total time (the sum of phase 1 time and phase 2 time).

If, however, the 2-phase mode with separate times or the 'Consecutive barrage' mode is being used, the times refer only to the partial time of phase 2.

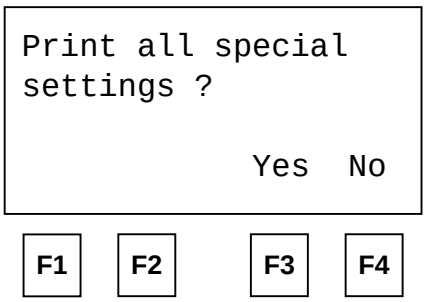


Setting of penalties per second calculated automatically when the maximum allotted time is exceeded. The penalty is expressed in hundredths (of a point or second depending on the table chosen - 'A' or 'C')

F1. Modifies the setting of the penalty set for the single phase specialty or for phase 1 in the two phase specialty.

F2. Modifies the penalty for exceeding the maximum time in phase 2. The setting does not operate if the single phase mode is chosen.

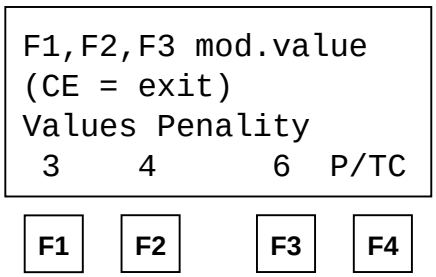
F4. Returns to the main menu, first requesting printing of the configuration.



Answering 'Yes' (F3) allows you to print the current configuration. Printing of the configuration before the start of the competition is recommended, so this additional possibility for verification after the printout of the timing can be included.

4.1 Setting of predefined corrections

The assignment of penalties or time corrections during timing is particularly easy thanks to the possibility of setting standard scores (or time corrections), which can be accessed by means of the function keys (see 4.1).
The function of setting of predefined corrections is accessed from the 'Specific settings' menu.

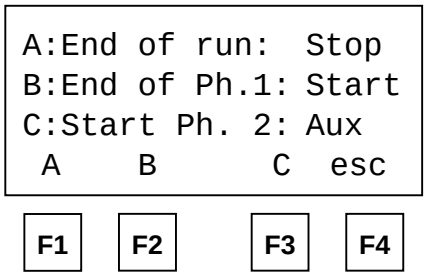


With function keys F1, F2, F3 select the value you intend to modify. The values set will be placed in positions which correspond to those of the relative function keys also during timing.

Pressing F4 allows you to pass from the setting of predefined penalties to the setting of time corrections.

To quit the function, briefly press key CE.

4.2 Selection of finish and phase 2 start signals



Selection of the types of input signal for the end of the ride (or the end of phase 2 in the case of timing with 2 phases), for the end of phase 1 and for the start of phase 2. By selecting the two signals in the appropriate manner, it is possible to configure timing for any type of finish configuration, as shown in the table below.

F1. Selection of end of ride signal (single phase) or of end of phase 2 (2 phases). It is possible to choose between the **Start** or **Stop** signal.

F2. Selection of end of phase 1 signal (**Note**: the setting is active only if one of the two phase modes has been selected). It is possible to choose between **Start**, **Stop** and **Aux/L1** ('Aux' input in the case of timing via cable or Lap 1 when the Linkgate radio system is used).

F3. Selection of the phase 1 start signal (**Note**: the setting is active only in the case of selection of the **'Consecutive barrage'** mode, in which the end of phase 1 does not coincide with the start of phase 2). It is possible to choose between **Start**, **Stop** and **Aux/L1** ('Aux' input in the case of timing via cable or Lap 1 when the Linkgate radio system is used) or L2 (Lap 2 radio signal – connection via cable is not possible).

4.3 Default settings

After the configuration has been annulled, the chronometer is initialized with the following settings:

Mode	Single phase
Phase 1/single phase FEI table	A
Phase 2 FEI table	A
Preset penalties	3, 4, 6
Preset time corrections	6, 8, 10
End of ride signal	Stop
End of phase 1 signal	Aux/Lap 1 radio
Start of phase 2 signal (consecutive barrage only)	Start
Phase 1...phase 2 pause (consecutive barrage only)	15 s
Countdown time	60 s
Phase 1/single phase maximum time	60 s
Phase 1/single phase time limit	120 s
Phase 2 maximum time	60 s
Phase 2 time limit	120 s
Time fault assigned, phase 1/single phase	0.25 Points (tab. A) 1 second (tab. C)
Time fault assigned, phase 2	0.25 Points (tab. A) 1 second (tab. C)

5. Timing

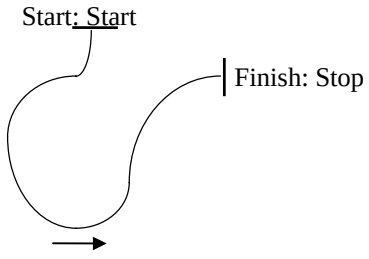
5.1 Connections and setup of Linkgate radio system

As has already been stressed in paragraph 3, the show jumping program offers maximum flexibility in the connection of the photocells, so as to make simple the management of different types of competitions (single phase with separate start and finish; single phase with coinciding start and finish; two phases with separate start, end of phase 1/start of phase 2 and finish; two phases with coinciding start and end of phase 1/start of phase 2; two phases with coinciding end of phase 1/start of phase 2 and finish, consecutive barrage with the possibility of freely configuring the finish of phase 1 and the start of phase 2).
Moreover the various inputs can be commanded with cable connections, or more conveniently, the Linkgate system can be used for the transmission of timing impulses via radio. A mixed configuration is also possible, as the inputs via cable and the signals via radio are managed in a way which is completely transparent to the user.
The only exception is the Lap 2 signal via radio, for which there is no corresponding signal via cable. However, the use of this signal is only necessary in the case (which is anyway rather unlikely) of a competition with 'Consecutive barrage mode' and with all the signals (start of phase 1, finish of phase 1, start of phase 2, finish of phase 2) in different positions.
The table below shows the possible configurations of inputs (to which the different types of timing shown in the figures correspond) and the correspondences between radio signals and 'cabled' inputs. For the selection of the different modes, see section 3.
For the correct setting up of signals on the Linkgate EncRadio transmitters and for their connection, refer to the section 'Linkgate System' in the 'Racetime 2 User Manual' manual.

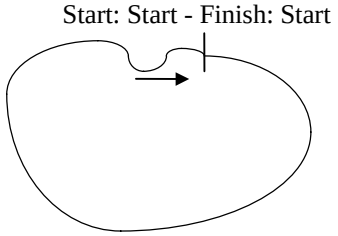
Function	Radio signal	Input line	Diagram ref.
Beginning of start countdown (if required)	Lap E	Lap	
Start of horse	Start	Start	
End of ride (configurable signal)	Stop or Start	Stop or Start	A, C, D, E, G B, F
Intermediate time, only in 'single phase' mode	Lap 1	Aux	
Finish of phase 1 and start of second phase, only in the '2 phases, progressive time' and '2 phases, separate times' modes (configurable signal)	Lap 1 or Start or Stop	Aux or Start or Stop	C, G D, F E
Start of second phase (only for the 'Consecutive barrage' mode (configurable signal)	Lap 1 or Start or Stop or Lap 2	Aux or Start or Stop (Lap 2 is not available via cable)	 G
Interruption and resumption of timing by the judge	Lap E	Lap	

'Single phase' mode

A : Separate start and finish

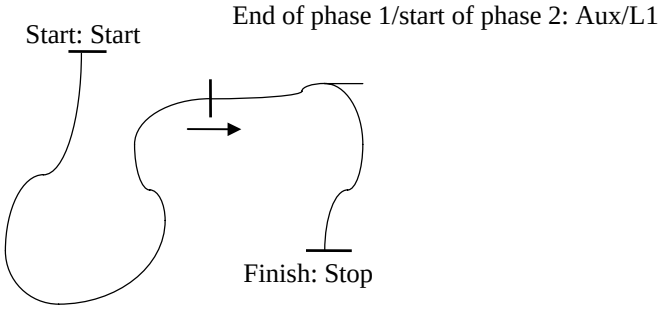


B : Coinciding start and finish

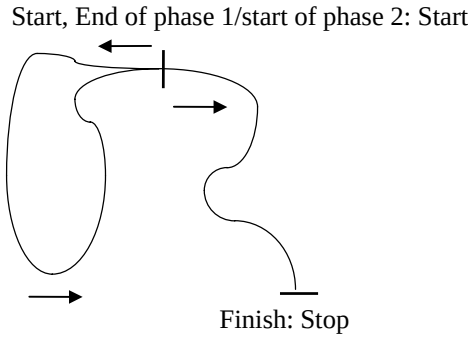


'Two-phase' mode

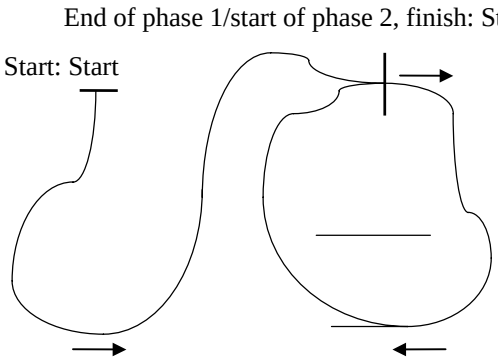
C : Start, phase 1/2 and separate finish



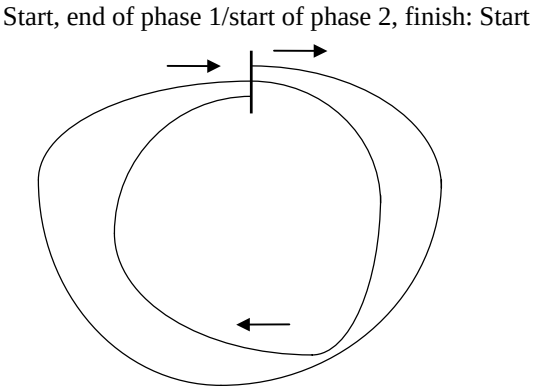
D : Start coinciding with phase 1/2



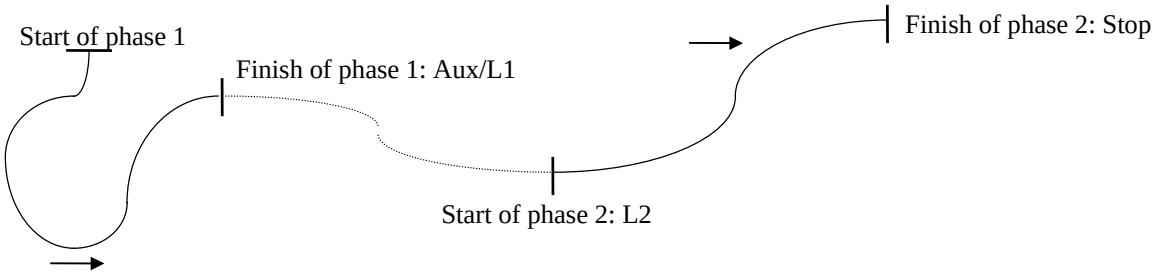
E : Finish coinciding with phase 1/2



F : Start: coinciding finish and phase 1/2

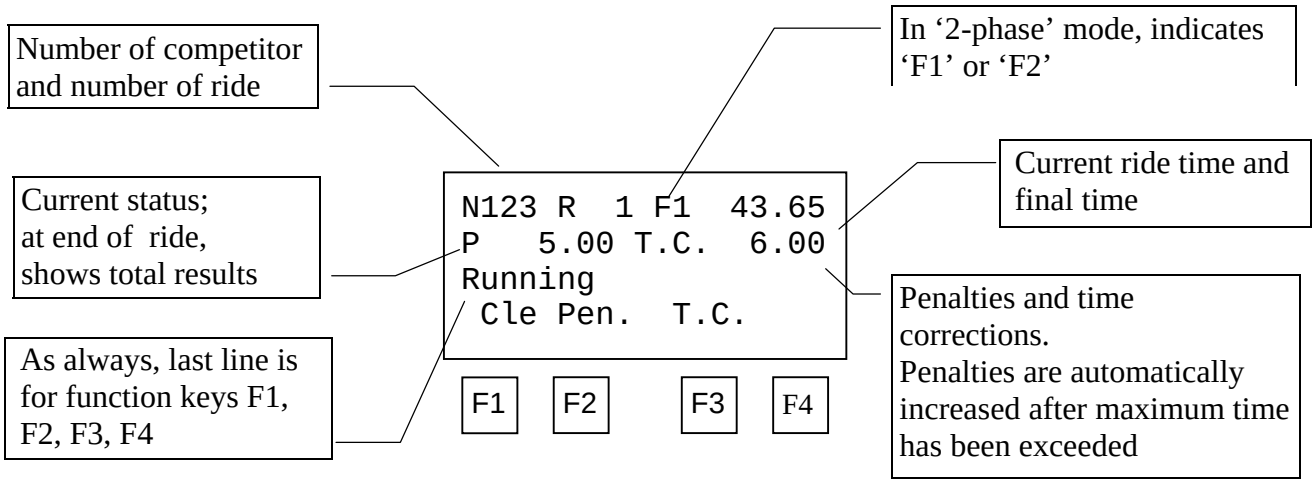


G : 'Consecutive barrage' mode
with start and finish in two different points of the course



5.2 Information displayed, use of keyboard

The information appearing on the display obviously depends on the particular timing phase you are in (countdown, horse during ride, correction, etc.). However, some zones of the display can be distinguished on the basis of the information which is displayed in them.



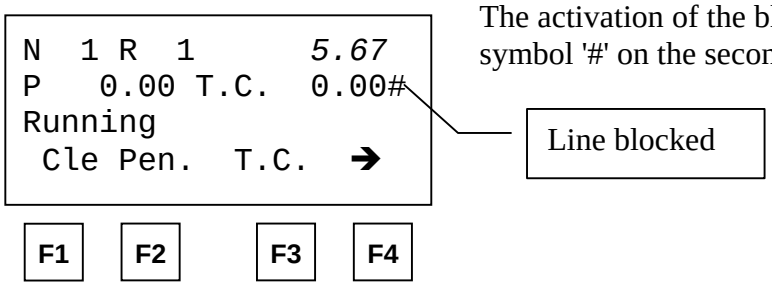
With regard to the keyboard, as always the function keys F1, F2, F3 and F4 give the machine different commands according to the context.

During timing, the CE key allows you to access a **second series of functions** for keys F1, F2, F3 and F4. Usually this is for the functions of cancellation of the current ride or cancellation of previous rides; it is also possible to return to the main menu (key F4) from the second page of functions.

When the chronometer is stopped, the ⇑ and ⇓ arrows allow you to display the results of previously memorised results in sequence.

5.2.1 Blocking of lines with LCK key.

Although it is possible to annul any false events acquired by the chronometer at a later moment, it is also possible to block the active input line by pressing the LCK key.



The activation of the block is shown by the presence of the symbol '#' on the second line of the display.

The blocking of the lines is active on the following input channels:

- Start, Stop, Lap1and Lap2 radio signals
- Aux input (corresponding to the Lap 1radio signal, see also section 5.1)

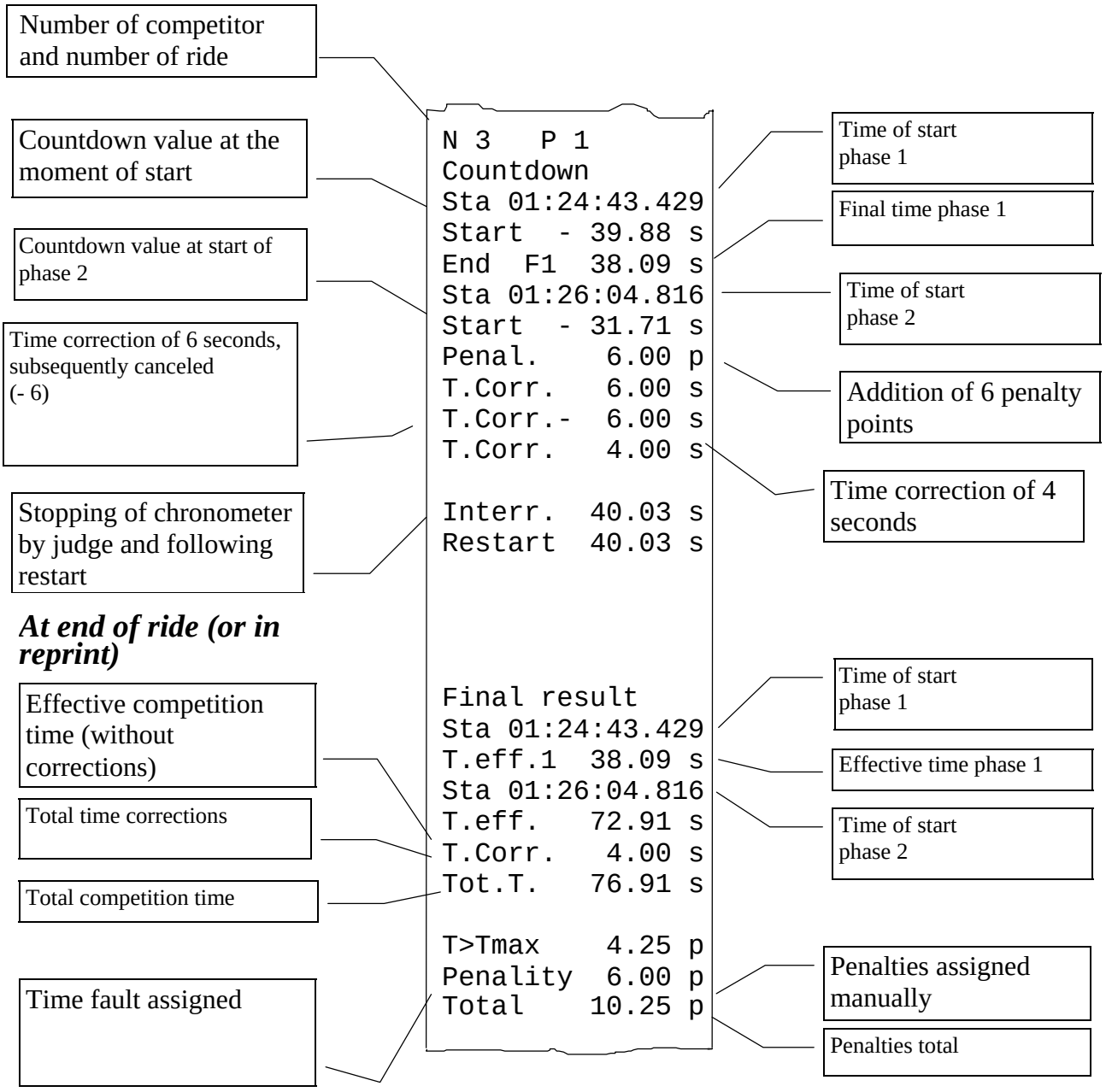
It is not active on the Start and Stop lines (input or keyboard), so as to allow the timekeeper to intervene.

The Lap line (input or keyboard) and the corresponding Lap E radio signal are also not blocked by the LCK key as they are needed to begin Countdown and to interrupt/resume timing (these are manual actions performed by the timekeeper).

5.3 Interpretation of printouts

The timing printout shown below refers to 'Consecutive barrage' timing, according to table A. In the other specialties, the information is presented in a similar way, with the exception of data relative to the start and the countdown of the second phase.

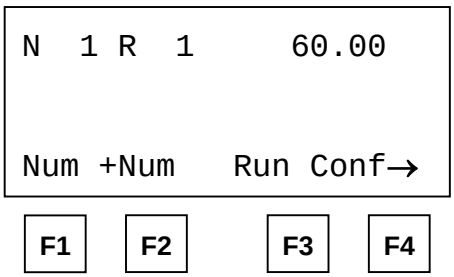
During timing



5.4 Single phase competition

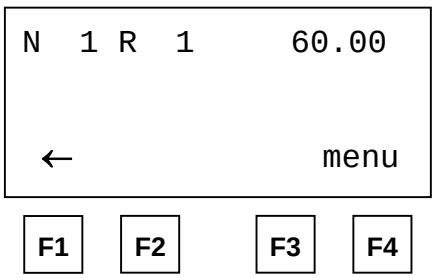
5.4.1 Setting of competitor number and ride number

From the main menu, select ‘A: Timing’ (key F1) to access the timing functions.
The chronometer is in the competitor number and ride number setting mode. In this condition, the chronometer receives no timing signals.
As well as the competitor number and ride number, on the first line at the top of the display, the previously set countdown time appears (see 4).



F1. Allows you to set the competitor number
F2. Increases the number of the horse by one (allows faster setting of the competitor number when the competitor is without a number)
F3. Setting of ride number. Each horse is given a single identity based on its competitor number and ride number. Therefore if the same competitor performs the same ride a number of times, it must be given different ride numbers (unless previous rides are canceled from the memory, as indicated below).
F4. Confirms the competitor set and starts effective timing.

Suggestion: the ride number can be used alternatively as ‘category’ or ‘group’. The printout of rankings allows for the selection of the ride number to which the rankings must refer. (see 7.2)
The arrow at the bottom right of the display indicates that by pressing key CE briefly (remember that prolonged pressing of the same key will cause the paper of the printer to move on), different functions are assigned to the function keys, as indicated by the last line at the bottom of the display.

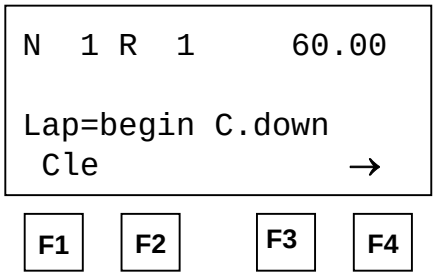


F4. Returns you to the main menu.

Pressing again on key CE returns you to the previous display.

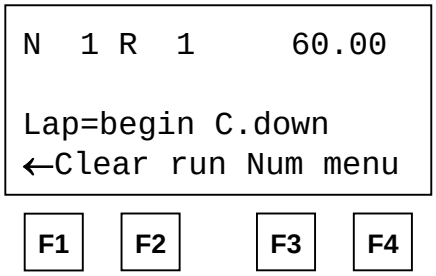
5.4.2 Countdown

After confirming the competitor, the chronometer waits for the signal for the start of countdown (Lap from input/keyboard, or Lap E via radio).

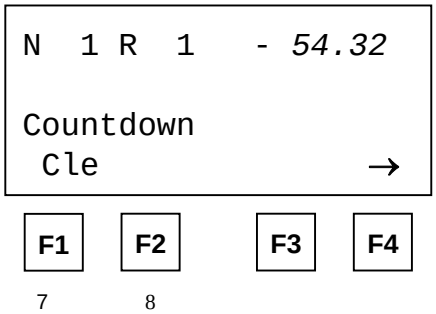


F1. Cancels the previous event, thus returning to the setting of competitor number function. The operation must be confirmed.

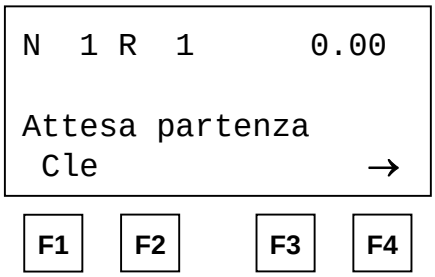
Pressing key CE briefly accesses the functions of current ride cancellation, modification of competitor number and return to main menu. These functions are **always present** in all the subsequent timing 'states'.



F1. Cancels the current ride (Note: during the countdown wait, this function is equivalent to the Cancellation function described above).
F3. Modifies the competitor number.
F4. Returns you to the main menu.



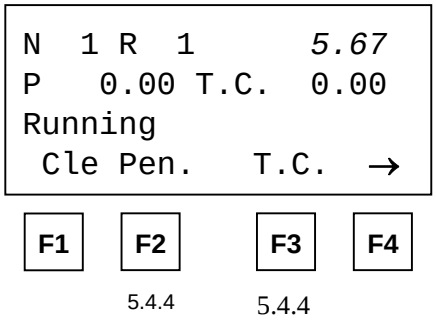
On receiving the start of countdown signal, the chronometer begins countdown. A sign '-' in front of the time indicates that the competitor is still within the established time available for starting. However, the chronometer continues to count up after countdown is terminated (this condition is indicated by the sign '+' on the display), so the horse can start also at the end of the regular time.



If the countdown time is set to zero, the start is free. After confirmation of the competitor the chronometer waits for the start signal.

5.4.3 Competitor during ride

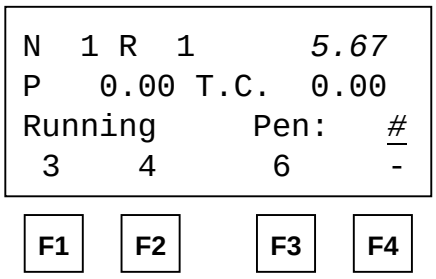
When the start signal arrives, timing of the competitor begins.



F1. Cancels the previous event (in this case, the Start), and so returns to the countdown function. The operation must be confirmed.
F2. Allows you to assign penalties to the competitor (points for Table A, seconds for Table C)
F3. Manual correction of the competitor's time

5.4.4 Assignment of penalties and correction of ride time

The assignment of penalties and the correction of time can be performed rapidly thanks to the preset values on the function keys (see 4.1).
From timing (5.4.3), select 'Pen.' (F2) or 'C.T.' (F3).

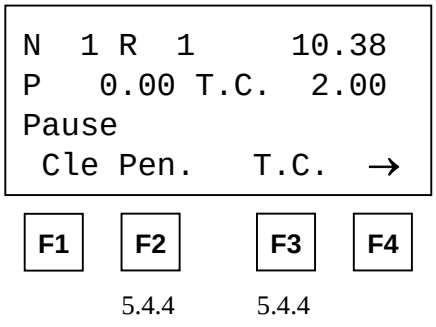


Pressing F1, F2, F3 immediately assigns the penalty (or time correction), which is displayed in a position corresponding to the relative function key. To assign penalties different from those preset, key in the number directly and confirm with Enter.
To quit without making corrections, simply press Enter (naturally before setting a number – if necessary write over, entering zero).

A previous incorrect penalty assignment can be corrected by activating negative correction. To do this, press F4 (-) and then set the required correction (with function keys F1, F2, F3 or by directly keying in the number).

5.4.5 Stopping of chronometer by judge

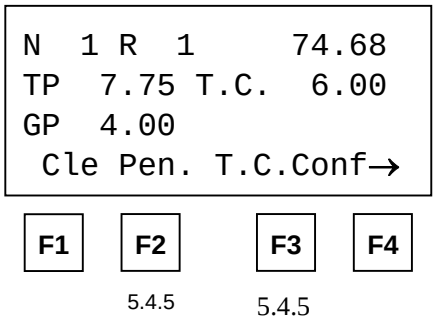
It is always possible to stop the chronometer by activating the Lap line (input/manual) or the Lap E line via radio. Naturally the penalty assignment and time correction functions are available also during the pause. At the end of the timing pause, the duration of the interruption is printed.



F1. Cancels the judge's stopping of the chronometer. If the operation is confirmed, the time restarts as if it had not been stopped.
F2. Allows you to assign penalties to the competitor (points for Table A, seconds for Table C).
F3. Manual correction of the competitor's time.

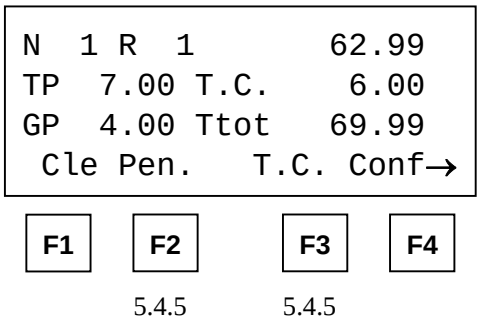
5.4.6 End of ride, confirmation of results

When the end of ride signal is received (configurable, see 4.2), the chronometer stops and the results of the ride are immediately presented.
Before confirming the results, further penalties or time corrections can be assigned (this operation is necessary, for example, when a fence is knocked down in close proximity to the finish).



F1. Cancels the stop signal. If the operation is confirmed, chronometer time restarts as if the finish had not taken place. In this way any false impulses from the finish photocell can be canceled.
F2. Enables you to assign penalties to the competitor (points for Table A, seconds for Table C)
F3. Manual correction of competitor's time
F4. Confirmation of results. After being confirmed, the results are printed and the chronometer is automatically ready to time the next competitor.

On the display the values of the penalties assigned (GP) and the total penalties (TP, the sum of the penalties assigned and of those assigned automatically for exceeding the maximum ride time) are shown, as well as the value of the time corrections made.
If timing is according to table 'C', the total final time, obtained by adding actual time + time correction + penalties assigned + time faults, is also displayed (figure below).



5.4.7 Exceeding of time limit

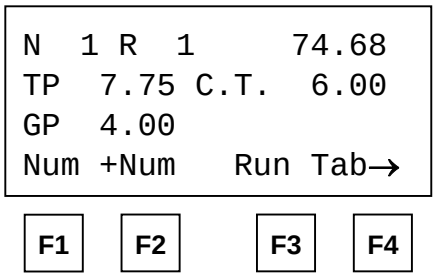
If the time limit is exceeded, the competitor is automatically eliminated. A message is printed and the formula 'T > Tlim' appears on the alphanumeric display board.

5.4.8 Intermediate time

In the ‘single phase’ mode alone, it is possible to include an intermediate time (it must be connected to the Aux input or transmitted via radio as Lap 1, see 4.2). The intermediate time appears for five seconds on the chronometer display (the time blinks) and on the display board, after which normal display of times resumes.
All other events (corrections, end of ride signal) interrupt display of the intermediate time and brings back the normal display.

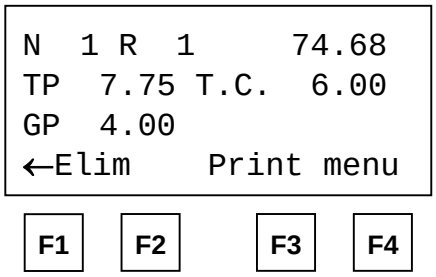
5.4.9 Display, printing and canceling of memorised rides

With the chronometer stopped (5.4.1) memorised rides can be displayed by using keys ⇑ and ⇓ or by retrieving a competitor, in particular with keys F1, F2, F3.



F1. Allows you to enter the competitor’s number.
F2. Increases the competitor’s number by one.
F3. Setting of ride number.
F4. Prints the results for the number displayed.

By pressing briefly on the key CE, you access the functions of displayed ride cancellation and return to main menu.



F1. Cancels the displayed ride. Asks for confirmation.
Attention: once confirmed, the operation is irreversible.
F3. Prints the results for the number displayed.
F4. Returns you to the main menu.

By pressing on key CE again, you return to the previous display.

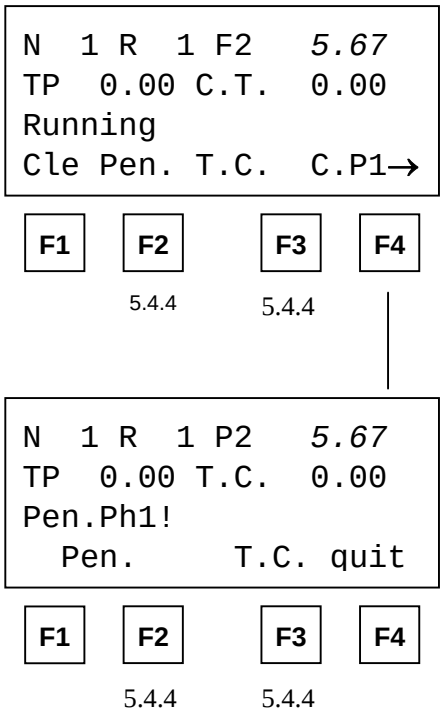
5.5 Two-phase competition

The functioning of the chronometer for the timing of 'two-phase' competitions is very similar to the functioning for the single phase competition already described.
The differences can be summarized as follows:

- On the first line of the display 'F1' or 'F2' is constantly shown to indicate the active phase of timing.
- If the competitor has not finished the first phase without any faults (penalty assigned, time correction or penalty assigned automatically for exceeding the maximum time), he is automatically eliminated and cannot go on to the second phase.
- The cancellation command (F1) in phase 2 makes it possible to cancel the finish of phase 1/start of phase 2 event and therefore to 'bring back' the competitor to phase 1. Also in this case, this operation cancels any false photocell impulses.
- The final competition time is the time of phase 2 alone in the case of the '2 phases, separate times' mode; it is the sum of the phase 1 and 2 times in the case of the '2 phases, progressive time' mode.

5.5.1 Assignment of penalties or time corrections for phase 1 after the start of phase 2

It often happens that faults for phase 1 have to be assigned after the competitor has started phase 2. This occurs in particular when a fence is positioned before the photocell for the end of phase 1 and the start of phase 2.
During correction, the display board shows the final time for phase 1 (even if previously it had already gone on to the displaying of current event time for phase 2). This makes it possible to make corrections with relative calm.

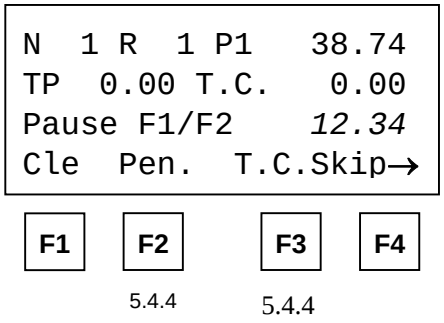


Press **F4** (C.F1) to access the function for the assignment of penalties or time corrections for phase 1.

F2. Allows you to assign penalties to the competitor (points for Table A, seconds for Table C).
F3. Manual correction of competitor's time.
F4. Returns to the correction mode of phase 2. If a correction for phase 1 has in fact been made, timing is stopped when you quit the function (the competitor cannot be admitted to phase 2).

5.6 'Consecutive barrage' competition

Compared to the other two-phase modes, the 'Consecutive barrage' mode has a pause time between the first and second phase, after which there is a second countdown before phase 2 actually starts. Naturally the competitor is admitted to phase 2 only if he has finished phase 1 without any faults.
The pause between the first phase and the beginning of countdown of the second phase can be prolonged by acting on the **Lap** line (**Lap E** if the radio signal is transmitted via radio by the Linkgate system), in a similar way to that of the timing pause (see 5.4.5).
It is also possible to shorten the pause by means of the Skip function.



On the second line a seconds counter is displayed to indicate the pause time between the end of phase 1 and the start of countdown for phase 2.

F1. Cancels the end of phase 1 event, 'bringing back' the competitor into phase 1.

F2. Allows you to assign penalties to the competitor (points for Table A, seconds for Table C) for phase 1.

F3. Manual correction of the competitor's time for phase 1.

F4. Passes immediately to the countdown for phase 2 (cancels the pause)

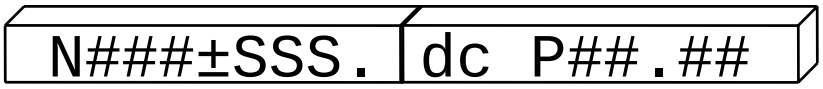
6. Connection of display board

The 'Show jumping' program allows for the management of a double Microgate µTAB display board (master display board + slave display board, or two master display boards with one set up as slave), or a single display board. The two possibilities are managed simultaneously, and the display mode can be chosen by setting the address of the display board.

Display board address	Mode
0	Double display board (master+slave)
1	Single display board

6.1 Data presentation on double display board

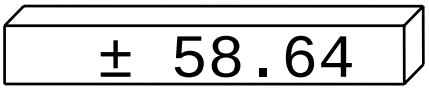
The double display board shows, in this order, number of competitor, time (current event time, intermediate or final) and penalties (sum of the penalties assigned and the penalties given automatically when maximum time is exceeded).



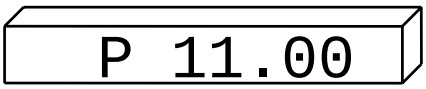
When the time limit is exceeded, the formula 'T>Tlim' appears.

6.2 Data presentation on single display board

The display board usually shows the competitor's time (current, intermediate or final). When a penalty is assigned, this is shown for 5 seconds, after which normal display of times resumes.
At the end of the ride, after confirmation of results, the final time and the penalty are displayed alternately (the final time for 5 seconds and the penalty for 3 seconds).



Time display



Penalty display

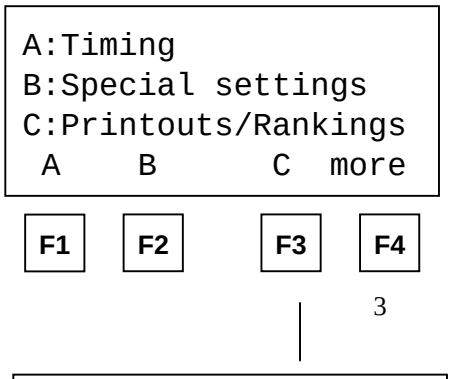
When the time limit is exceeded, the formula 'T>Tlim' appears.

6.3 Data presentation on display boards of other producers

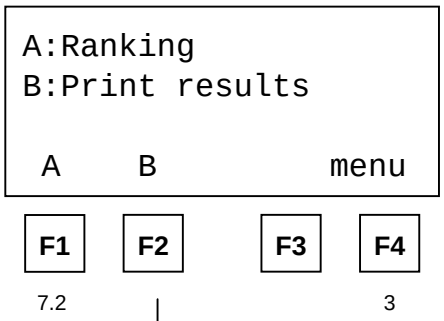
The ‘Show jumping’ program also allows the connection of Telecron or Alge display boards. The presentation of data with these display boards is analogous to presentation on the single Microgate display board (time and penalties are displayed alternately). As they are not alphanumeric, the sign and indication ‘P’ (for ‘Points’) are not shown.
The number of the competitor is displayed.

7. Printouts and rankings

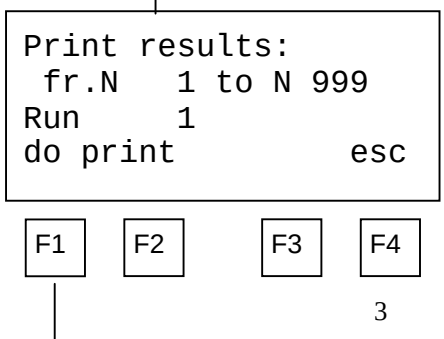
7.1 Printout of results



From the first display of the main menu, press F1 to select ‘C: Printouts/rankings’

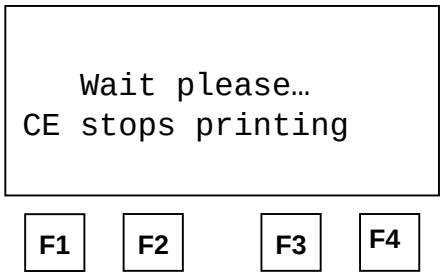


F1. Selects printout of rankings.
F2. Prints results.
F4. Returns you to the main menu.



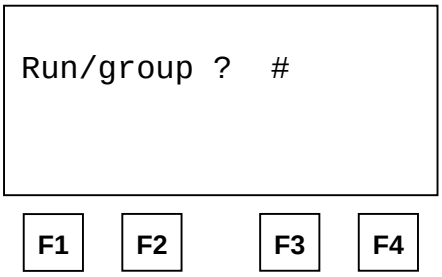
It is possible to ‘filter’ the printout by setting the first and last competitor whose results you wish to print, and the ride.

F1. Carries out printing.
F4. Returns you to the main menu.

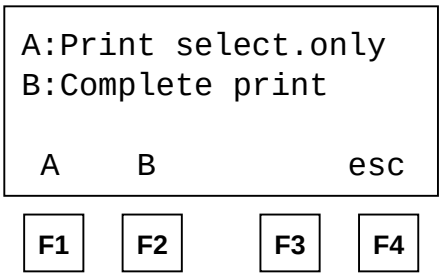


Press CE to interrupt printing

7.2 Printout of rankings



Insert the ride number (or category number) the rankings should refer to.



F1. If 'Selection printout' is selected, in addition to the competitor's position and number, only the total score and the ride time (table A) or the total time and the ride time (table C) will be printed

F2. The 'Complete printout' option makes it possible to print, in the order of ranking, the complete results of the ride.

F4. Returns you to the print menu.

Note:

Example of 'selection printout' (tab. A) …

```
RANKING
RUN/GROUP   1

Rnk Num  Penalty
          T.run

  1   3   0.00 p
         50.49 s

  2   2   4.00 p
         49.48 s

  3   1   8.00 p
         48.23 s
```

the same rankings as 'complete printout'

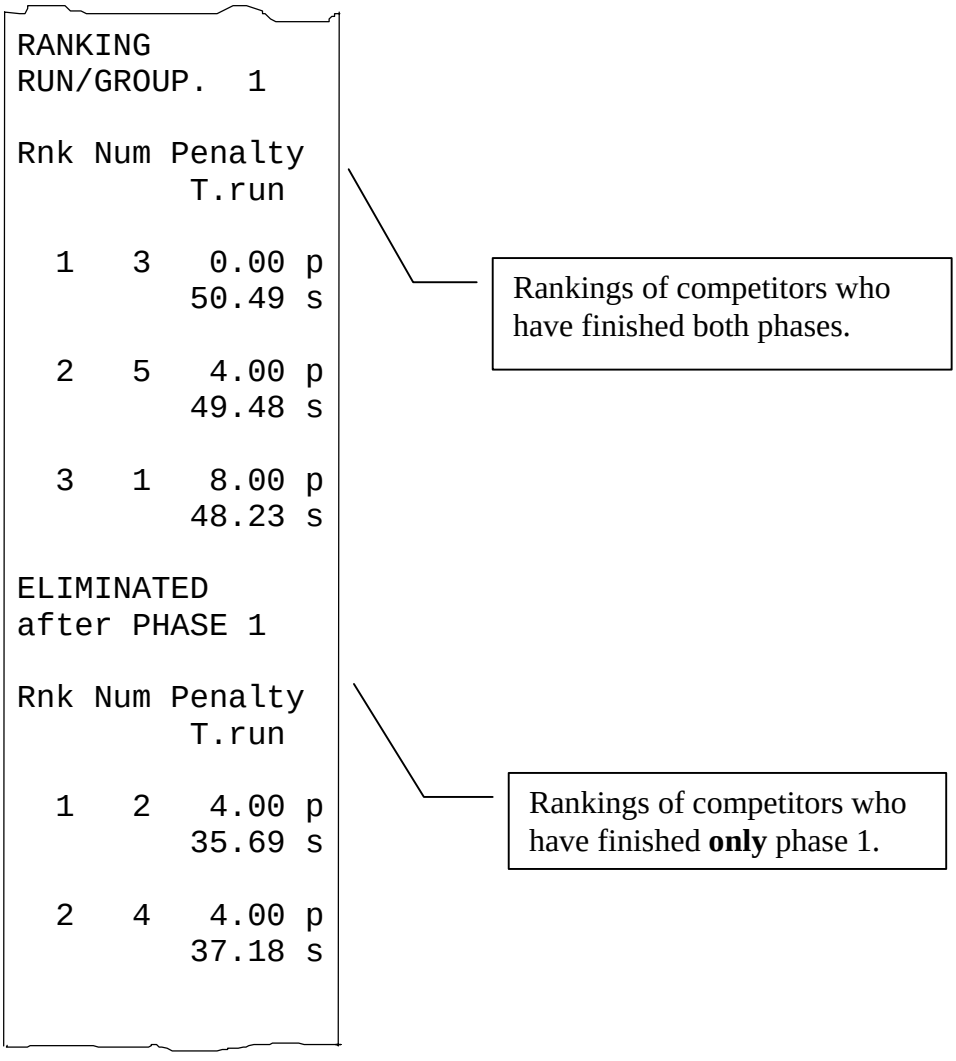
```
RANKING
RUN/GROUP   1

Rank  1 Num    3
Sta 00.47:43.471
Run T.   40.49 s
T.Corr.  10.00 s
Tot.T.   50.49 s

T>Tmax    0.00 p
Penalty   0.00 p
Total     0.00 p

Rank  2 Num    2
  Et cetera…
```

7.2.1 Rankings for two-phase competitions

Racetime 2 also allows simple management of rankings for two-phase competitions.
The following criteria are used:

- for competitors who have finished both phases, the same criteria are applied as for the single phase (if Table 'A' is used, classification by points and, in the case of a tie, by times; if Table 'C' is used, classification based on total times and in the case of a tie, on competition times)
- there then follows the printout of a separate ranking for competitors who have finished only the first phase,. The criteria for classification remain the same, but refer of course to the results of the first phase.

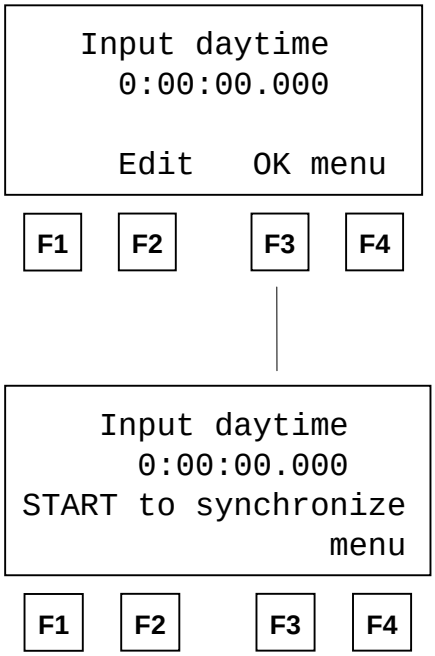
Important note: Racetime 2 does not ascertain whether the data presented in the rankings are homogeneous, that is, that they have all been acquired with the same kind of competition (single phase, two phases, etc.) using the same table. Therefore, if rides which are not homogeneous are made in the same session, it is advisable to differentiate them using the field 'Ride' (for example, single phase with table A → Ride 1; two phases with table C → Ride 2). (See also section 5.4.1).



8. Various functions

8.1 Synchronization

Synchronization of the internal clock of the chronometer is not essential for the functioning of the program, but becomes necessary if devices for the manual backup of times are used.
From the second display of the main menu, select ‘A: Synchronization’ by pressing F1.

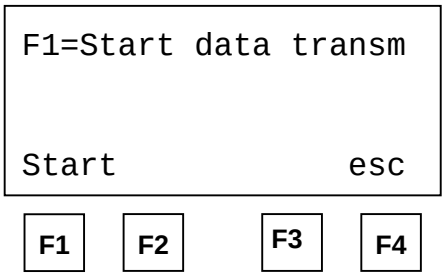


Set the exact time and confirm with F3 (OK). To correct the setting, press F2 (Edit).

Press START or activate the START input to synchronize the internal clock.

8.2 Data transmission

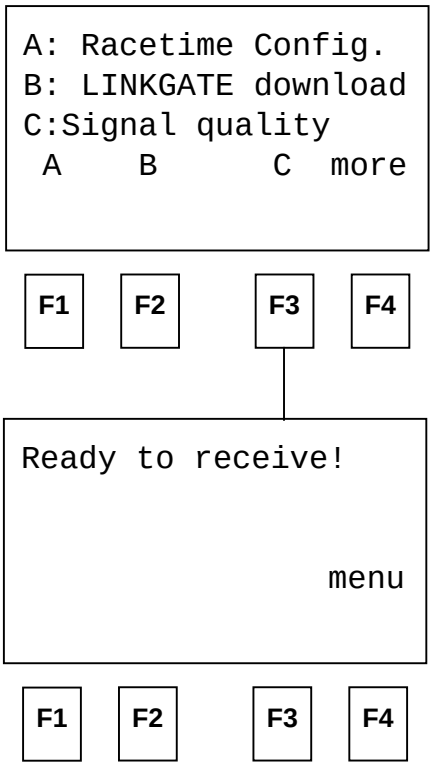
At any moment the memorised times can be transmitted to a Personal Computer. Select ‘B: Send stored data' by pressing F2 from the second screen of the main menu.



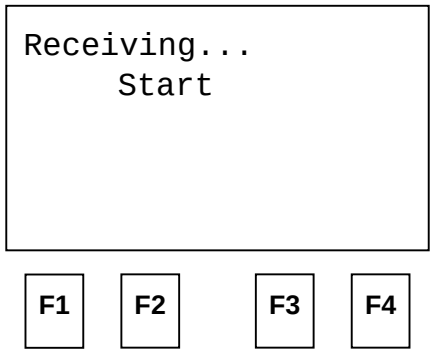
F1. Starts transmission
F4. Returns to main menu

Transmission format is the same as that used by the other Racetime 2 programs (except the OptoJump program). However, the ‘Info’ field contains some special values which are given in the appendix.

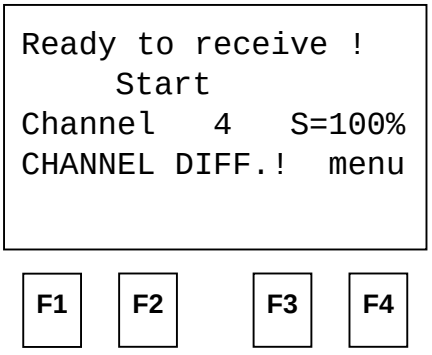
8.3 Signal quality



during reception of signal



after reception of signal



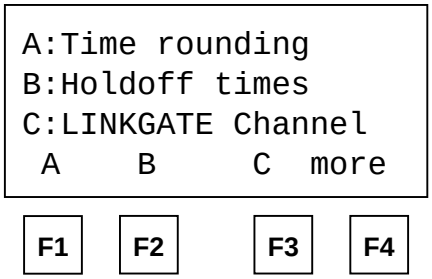
Racetime 2's software has a function for the evaluation of the quality of the radio signal received. This *utility* is particularly useful when the radio signal is particularly disturbed and therefore makes necessary an evaluation of the level of security of the transmission.
Select **'C: Signal quality' (F3)** from the *Second display* of the main menu to access this function. The words 'Ready to receive!' indicate that the system is ready to receive a radio transmitted impulse. After about 3 seconds from the beginning of reception of a signal (during reception 'Receiving....' is shown), on the display the channel of the signal received and the 'quality' of the signal as a percentage is shown. Naturally the closer to 100%, the better the quality. In any case, values above 40% are to be considered 'secure'.
If the channel set on LINKGATE Encoder (see the section on the Linkgate system in the 'Racetime 2 User Manual) does not coincide with the one set on Racetime 2, the message 'CHANNEL DIFF' (channel difference) appears.
If reception is particularly difficult, several adjustments are possible:

- place both the transmitting and receiving radios (those connected to the encoder) in an upright and raised position.
- If the disturbance is generated by interference from other transmitters operating on the same channel, change the working frequency
- Use more efficient antennas (1/4 wave or 5/8 wave, instead of the normal "charged" type), especially for transmission radios.

Note: checking of signal quality should preferably be made with the 'short-long' selector on the Linkgate Encoder device (see the section on the Linkgate system in the 'Racetime 2 User Manual') set to 'long' (L). If the selector is on 'short' (S), the maximum value indicated by the test is 20%.

8.4 RACETIME configuration

Select 'A: RACETIME Config.' from the third display of the main menu to access the Racetime 2 configuration options.
Remember in any case that if you decide to cancel the configuration when turning on the device, all the parameters are set to those values which are normally most suitable in the majority of cases.



8.4.3

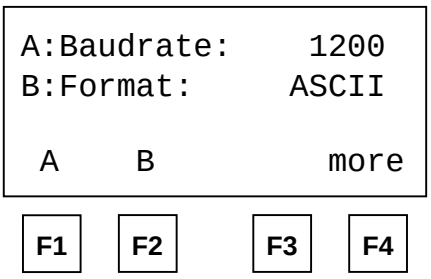
Select the items with the four function keys.

F1. Measure of accuracy. In the show jumping program the measure of accuracy is set at 1/100s, and cannot be modified.

F2. Modifies the disactivation times of the lines.

F3. Configuration of the Linkgate radio transmission channel.

F4. Shows the following menu.

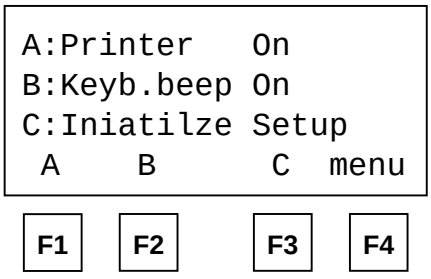


8.4.1 Setup of serial transmission parameters

ATTENTION : this configuration is only present in versions 20.x.yy, 21.x.yy, 22.x.yy and 24.x.yy.

Press F1 to modify speed of serial transmission (1200, 2400, 4800 o 9600 bit/s).

Press F2 to choose between binary and ASCII for the format of transmitted data. Transmission protocols for the two modes are given in the Appendix.



Select the items with the four function keys

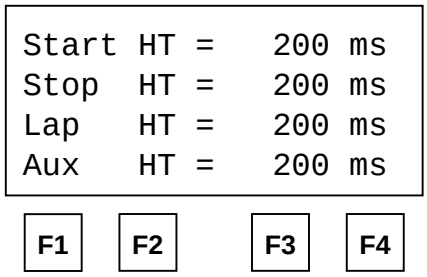
F1. Activates/disactivates the printer.

F2. Activates/disactivates the acoustic signal emitted when the keys are pressed.

F3. When F3 is pressed and the operation is subsequently confirmed, all the configuration parameters with the exception of the 'LINKGATE channel' revert to default values.

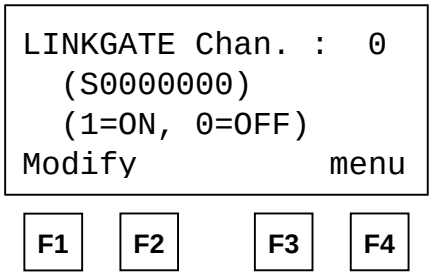
F4. Returns to main menu.

8.4.2 Modification of line disactivation times



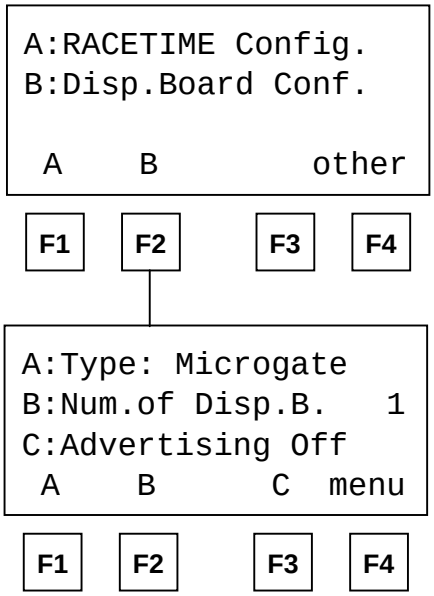
Allows separate modification of input disactivation times after acquisition of an event for the Start, Lap, Stop and Aux lines. The signals acquired via radio, however, have a fixed disactivation time of 2.7s.

8.4.3 Linkgate channel setup



Allows modification of the work channel of the LINKGATE system to enable you to move to another channel if this should be necessary. On the display the setting of the *dip-switch* located on the LINKGATE Encoder appears. The first selector does not affect selection of the channel (its function is to select the signal length), and is therefore displayed with the letter ‘S’. Next the status of the other switches (1=selector up, 0=selector down) is shown. To modify the setting, press ‘Modify’ (F1). Once again remember that it is <u>absolutely essential that the channels set on Racetime 2 and on the LINKGATE Encoder should coincide.</u>

8.5 Display board configuration



Select 'B : Display board Config.' from the third display of the main menu to access display board configuration.

8.5.1 Display board type

ATTENTION : this configuration is only present in versions 20.x.yy, 21.x.yy, 22.x.yy and 24.x.yy.
Select the type of display board you wish to connect to the Racetime 2 chronometer. Remember that for each display board it is necessary to use the appropriate connection, obtainable from Microgate. For connection of the Telecron display board the code $ACC050 interface must also be used.

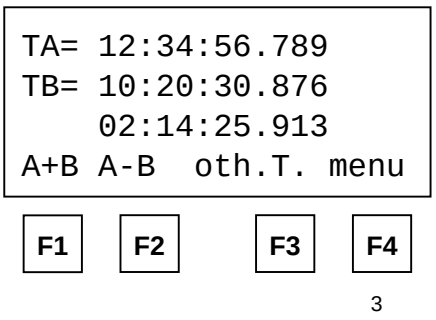
8.5.2 Number of display boards

This option is not active with the ‘Show jumping’ program as the chronometer simultaneously commands a double display board (Master+Slave) or a single display board (see section 6).

8.5.3 Advertising

If a Microgate display board is used, the display program (Prog. 1) previously memorised in the display board itself can be activated by pressing F3. For further information see the instructions on this subject for the Microgate display board µTAB. Press F3 again to disactivate the display program and to reset the display board to the normal working program (Prog. 0).

8.6 Sexagesimal calculator



Key in the first time you wish to add or subtract (TA) ; then key in the second time (TB).
Select the operation to be carried out on the two times:
F1 (A+B) adds the two times
F2 (A-B) subtracts time B from time A
To modify the times, press F3.
If you must modify only one of the times, the time which is not to be modified can be 'skipped' by pressing CE; in this way you avoid pressing ENTER four times.

Note 1: times are 'normalized' at 24.00; for example, 2 :00 :00.000+23 :00 :00.000 = 1 :00 :00.000 and not 25 :00 :00.000! ! !

Note 2: pay attention when keying in the thousandths, especially if the times to be added or subtracted are expressed with an accuracy to the tenth or hundredth; for example, to insert the time 1:02.84 (one minute, two seconds, 84 hundredths of a second) you must key in

0 ENTER (hours)
1 ENTER (minutes)
2 ENTER (seconds)
840 ENTER (thousandths), and NOT 84 ENTER! ! !

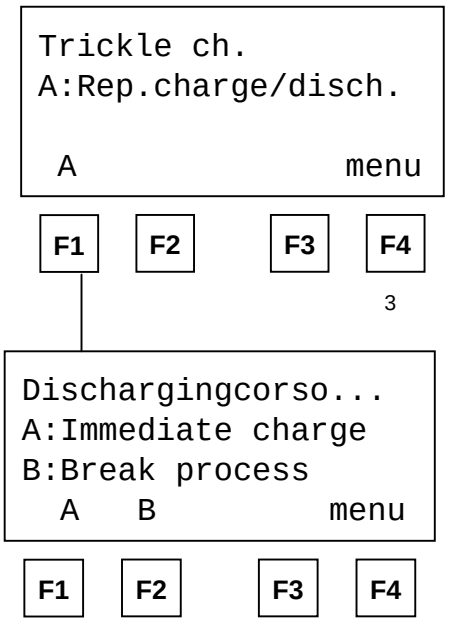
! ! !

9. Battery recharge

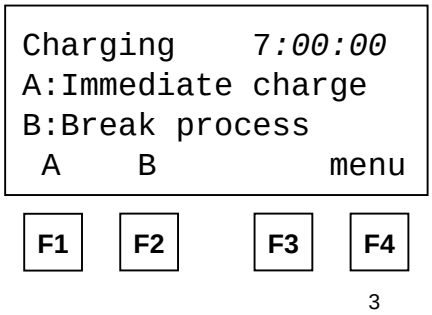
The recharging of Racetime2's internal batteries is managed entirely by the microprocessor which controls all the chronometer's functions. In this way, it has been possible to implement a recharge control which guarantees maximum efficiency of the batteries at all times, at the same time prolonging their working life.
To recharge the batteries, connect the Racetime 2 battery charger to the relative socket on the back of the device.
If the chronometer is off, information on the current status of the battery recharge management functions will immediately be shown on the display.
In particular, the following messages will appear on the first line of the display:

Status/message	**Function description**	**LED status**
Maintenance	the chronometer is supplied by an external power source and, concurrently, the batteries are kept 'fresh' by a weak recharge current	Brief blinking every four seconds
Discharge	at the beginning of the recharge cycle, the batteries are completely discharged before being recharged	LED continuously lit
Recharge	recharge in progress. On the first line of the display, the time still remaining until the end of recharge blinks	Blinking LED

If the letters 'Vext. Ins' blink on the first line of the display, this means that the voltage supplied at the recharge/supply input is insufficient. Attention : if external power is insufficient, recharging is interrupted and so cannot be completed correctly or within the preset time.



If the chronometer is in 'Maintenance', press 'A: Rep.charge/disch.' (F1) to begin a new charge cycle (A :Rep. Charge/disch.) This will immediately start battery discharge. The duration of this phase is variable and depends on how fully the batteries are charged at the time. (The time needed to discharge can last as long as four hours approximately).
After discharging the batteries, Racetime2 automatically begins recharging; this takes 7 hours. After recharging, the words 'Charging terminated – OK' indicate that the process has been correctly completed. If, however, battery malfunction has caused premature interruption of charging, the messages 'Battery error (LV)' (insufficient battery voltage) or 'Battery error (HV)' (battery voltage too high) will appear.



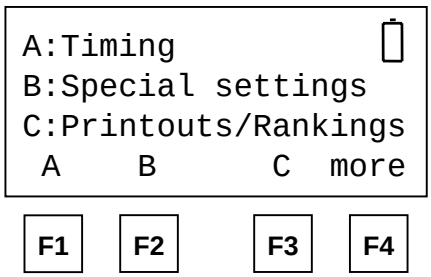
During discharging, it is possible at any time to pass directly to charging by pressing F1 (A: Ripeti scar./ric.) so as to shorten recharging time. However, you are advised not to charge the batteries without first discharging them as this could cause a reduction in the capacity of the batteries (memory effect).
To interrupt discharging/recharging at any moment, press F2 ('B: Interrupt').

Note 1: If the external power source should fail during charging, charging is interrupted and resumed from the same point it had reached before being interrupted. This represents a further guarantee of the reliability of the recharge system.

Note 2: During discharging and recharging, Racetime2 becomes slightly but noticeably warm. This is absolutely normal.

It is also possible to access these functions when the chronometer is on. In this way, you can begin to recharge the device without interrupting a timing session. To access recharge management, select 'C: Battery charge.' from the third display of the main menu.

9.1 Low battery indicator



When the batteries have nearly run down completely and the external power source is not connected**,** a warning symbol blinks at the top of the display. From the moment the symbol begins to blink you still have a considerable amount of time to finish your work, nearly two hours without using the printer but much less if the printer is used frequently.
Remember that when fully charged, the batteries can be used continuously for approximately 8-9 hours if a time is printed every 20 seconds. Length of duration may be less in particularly severe climatic conditions or if the batteries are worn out. It is absolutely normal for battery efficiency to decline after approximately 500-1000 recharge cycles. If you notice a significant reduction in the duration of the batteries**,** please contact Microgate for replacements.

10. Memory limits

Racetime2's memory is large enough to store data for 400 rides (whichever mode is used). When the memory limit has been reached, it is still possible to continue timing and to print the results. The data is not memorised, however.
The memory can be canceled manually by canceling the individual records (see 5.4.9).
To cancel the memory, Racetime 2 must be turned off and the cancellation of data confirmed.

11. Appendix - Racetime 2 protocol transmission

11.1 Binary transmission

The data are transmitted in binary form so as to obtain more efficient compacting of data.

The 'character type' specified below refers to the length of data, in particular:

char	1 byte (8 bit)
integer	2 bytes
long integer	4 bytes

SERIAL PORT SETTING: No parity, 8 data bit, 1 stop bit. Standard baud rate is 1200 bit/s. It can be set to 1200, 2400, 4800, 9600 bit/s.

Description	N° and character type	N°byte	ASCII code	Notes
Header				
STX	1, char	1	02h	Start of Text
Program code	10, char	10		'R2HO' followed by 6 spaces
CR	1,char	1	0dh	Carriage Return
loop start (and on-line start)				
Progressive counter	1, integer	2		Starts from 1
Start N°	1, integer	2		<=65535, starts from 1
Ride/category	1, char	1		<=255, starts from 1
Physical channel	1, char	1		always 0 in the Show
Logical channel	1, char	1		normally 0 =254 in time of day phase 2 start of Consecutive barrage =1 in total time (info=24 or 56) if time limit has been exceeded
Info	1, char	1		0= Chronological start time 23= Phase 1 effective time is different from 0 only if the competition is two-phase and phase 2 has been finished 24=Total time tab. A 56=Total time tab. C (without penalties) 25=Penalties assigned tab. A 57=Penalities assigned (seconds) tab. C 26=Penalities for exceeding maximum time, tab. A 58= Penalities in seconds for exceeding maximum time, tab. C 27=Total penalties, tab. A 59=Final time tab. C (with faults)

Description	N° and character type	N°byte	ASCII code	Notes
Signal origin	1, char	1		always 0 in the Show jumping program
Sign	1, char	1		always 0 in the Show jumping program
Time	1, long integer or 2 integers	4		time in 1/25000 s *,** When the value of the info field is 25, 26, 27, 57, 58 two words (2x16 bit) are transmitted the first is always null the second contains the penalties (points or seconds) in hundredths
CR	1, char	1	0Dh	Carriage Return
end of loop (and end of on-line) car. subtotal 15 (loops)				
Epilogue				
ETX	1, char	1	03h	End of Text
Checksum	1, char	1		(∑ascii) module 128

11.2 ASCII transmission

The data are transmitted in ASCII form (only values< 127 (7Fh))

SERIAL PORT SETTING: No parity, 8 data bit, 1 stop bit. Standard baud rate is 1200 bit/s. It can be set to 1200, 2400, 4800, 9600 bit/s.

Description	N°	ASCII (Dec, Hex)	Notes
Header			
STX	1	2,02h	Start of Text
Program code	10		'R2HO' followed by 6 spaces
CR	1	13,0Dh	Carriage Return
loop start (and on-line start)			
Progressive counter	4		Starts from 1
Start N°	4		<=9999, starts from 1
Ride/category	3		<=255, starts from1
Physical channel	3		always 000 in the Show jumping program
Logical channel	3		normally 000 =254 in time of day phase 2 start of Consecutive barrage =1 in the total time (info=H or h) if the time limit has been exceeded
Info	1	48,30h	0= Chronological start time
		71,47h	G=Effective phase time is different from 0 only if the competition is two phase and phase 2 has been finished
		72,48h	H=Total time tab. A
		104,68h	h=Total time tab. C (without penalties)
		73,49h	I=Penalties imposed tab. A
		105,69h	i=Penalties imposed (seconds) tab. C
		74,4Ah	J=Penalties for exceeding maximum time, tab. A
		106,6Ah	j= Penalties in seconds for exceeding maximum time, tab. C
		75,4Bh	K=Total penalties, tab. A
		107,6Bh	k=Final time tab. C (with faults)

Description	N°	ASCII (Dec, Hex)	Notes
Signal origin	1	32,20h	always ' ' (space) in the Show jumping program
Segno	1		always ' ' (space) in the Show jumping program
Tempo	9		time in 1/1000 s When the value of the info field is I, J, K, i, j the penalty (points or seconds) is transmitted in hundredths, in the form #####.###
CR	1	13,0Dh	Carriage Return
end of loop (and end of on-line) subtotal car.29 (loops)			
Epilogue			
ETX	1	3,03h	End of Text
Checksum	1		(∑ascii) module 128

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