

NEUTRALISATION MANUAL

Simulated demolition device — C4 and C4 PRO models

Revision 2.0 — October 2026 — Edition issued to operations teams

WARNING — This document must be read in full before any operation. The device does not forgive improvisation. A cut made outside the prescribed sequence is recorded and may cause an immediate reduction of the remaining time, or detonation.

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0. REVISION HISTORY

Rev.	Date	Subject of the change	Sign.
5.0	03/2017	Document created — series 5 models	LT. R.
5.2	11/2017	Procedure Δ added (annex C)	LT. R.
6.0	06/2019	Yellow and orange shades merged under the single name YELLOW	CNE M.
6.4	02/2021	Correction of the audio frequency conversion table	CNE M.
7.0	09/2024	Double flash introduced — series 5 procedures dropped	ADJ. B.
7.3	10/2026	Update of the "Show" protocols	ADJ. B.
8.0	10/2026	Device interrogation (serial no., channel), evolving indicator, backup table. This edition cancels and replaces all previous ones	ADJ. B.

Editions prior to revision 2.0 must not be used under any circumstances. The protocols they contain are incompatible with current-series devices. Only reference MAG-NTR-C4-V2, printed in the footer, is valid.

This manual is intended solely for personnel who have completed the level 2 awareness module. Unqualified personnel must stay at least 25 metres from the device and must not attempt to interpret the light or sound signals it emits.

1. DEVICE OVERVIEW

The C4 and C4 PRO models take the form of a compact block fitted with a four-digit countdown display, a multicolour indicator, a sounder, two unmarked interrogation buttons set on either side of the display, and a terminal block taking up to six trigger cables. The display shows the remaining time in minutes and seconds. The countdown rhythm and the display brightness may vary during the operation; such variation is not in itself a fault.

Unlike previous revisions, the indicator state evolves: it is redefined after each cable cut and may change, or sometimes stay the same. Every cut therefore calls for a fresh reading of this manual.

Some versions are fitted with a motion sensor. On those versions, any movement, shock or tilting of the device makes the countdown accelerate sharply. Leave the device flat, on the surface where it was found.

2. TECHNICAL SPECIFICATIONS

Parameter	Nominal value	Tolerance	Remark
Empty mass	1,240 g	± 35 g	Excl. simulated charge
Supply voltage	9.0 V	± 0.6 V	6LR61 battery or mains unit
Countdown signal frequency	4,800 Hz	± 150 Hz	May be altered during the operation
Alarm frequency	3,500 Hz	± 50 Hz	Continuous signal
Loop resistance per cable	0.8 Ω	± 0.2 Ω	Measuring not advised
Operating temperature	-10 °C to +45 °C	—	Non-condensing
Protection rating	IP42	—	Do not immerse
Cable cross-section	0.22 mm ²	—	AWG 24
Display	4 digits, 7 segments	—	Remaining time mm:ss
Adjustable countdown time	5 to 90 min	in 5 min steps	Set by the organiser
Coding channels	3	—	See section 4.2
Stored protocols	2 × 24	—	Primary and backup tables

3. PREPARING THE OPERATION

3.1 — Device orientation

Stand facing the terminal block, with the indicator above the cables. In this position the cable positions are numbered 1 to 6, from left to right. This numbering is fixed: it does not depend on the number of cables present, nor on their colour, nor on their length. An empty position keeps its number.

Position	1	2	3	4	5	6
Location	Far left					Far right

3.2 — Remaining cables

At each reading, count the number of cables still connected at that moment (1 to 6). This number falls as the operation goes on: it must be recounted before every cut.

3.3 — Cable colour

The colour of the cable insulation has no meaning on these models. The wire-colour correspondence tables published in revisions 5.x must not be applied.

3.4 — Recommended equipment

Insulated cutters, white-light head torch (coloured light distorts the reading of the indicator), pencil and paper to note the serial number and the channel, this manual.

4. DEVICE INTERROGATION AND GENERAL PROCEDURE

Once armed, the device can be interrogated freely using its two buttons. Each press shows one item of information for three seconds, then the display returns to the countdown. The presses have no effect on the device: they may be repeated as often as needed.

4.1 — LEFT button: serial number

Button to the left of the display, on the side of cables 1, 2 and 3. Shows a four-character serial number made up of digits and possibly letters. The only possible letters are A, C, E, F, H, L, P and U. The serial number is assigned at arming and does not change during the operation.

4.2 — RIGHT button: coding channel

Button to the right of the display, on the side of cables 4, 5 and 6. Shows "CH 1", "CH 2" or "CH 3". The channel designates the conversion table to use in section 5. It is assigned at arming and does not change during the operation.

4.3 — Rules linked to the serial number

For the rules below, the letters of the serial number are ignored in the calculations. Depending on the device, no rule, one rule or several rules may apply at the same time.

Rule	Condition	Effect
α	The serial number contains at least one letter	Read the column for the number of remaining cables + 1. With 6 remaining cables, read the "2 cables" column.
β	The sum of the digits is greater than or equal to 15	Use the backup table (section 7) instead of the primary table (section 6).
γ	The last digit of the number is odd	Read the sequence from right to left.
δ	The number contains the letter B or D	Apply procedure Δ (annex C). Series 5 models only — not applicable on these models.

4.4 — General procedure

Step	Action
1	Interrogate the device: note the serial number (left button) and the channel (right button). Determine once and for all which of rules α , β and γ apply.
2	Observe the indicator (colour and rhythm). In the conversion table for the channel (section 5), read off the protocol code.
3	Choose the table: primary (section 6), or backup (section 7) if rule β applies.
4	Count the remaining cables. Select the matching column, shifted by +1 if rule α applies.
5	Read the sequence from left to right, or from right to left if rule γ applies. Ignore numbers matching an empty or already cut position.
6	Cut the first cable still connected in that sequence, and that one only.
7	The indicator is redefined (rising sound signal): its new state may differ from the previous one or match it. Return to step 2. The serial number and the channel stay the same.

Mandatory order of application: CHANNEL → TABLE (β) → COLUMN (α) → READING DIRECTION (γ).

4.5 — Hacking Device

On devices fitted with a communication interface, connecting a Hacking Device makes it possible to hack the device. The hack is signalled by two sound sweeps and the message "PIrA" on the display. Its effect depends on the security level of the device.

Effect of the hack	How to recognise it	What to do
Neutralisation	Steady green indicator and countdown stopped.	Operation complete.
Indicator frozen	After each cut, the indicator keeps the same state (the rising signal is still emitted).	Carry on as normal: the protocol code no longer changes, only the number of remaining cables changes.
Serial no. reset	The left button shows a number different from the one noted before the hack.	Note the new number and redo section 4.3 with it: the rules that applied are dropped (below).
Rule active before the hack		Effect of a serial number reset
α — the number contained at least one letter		The new number contains none: α is cancelled. The column is again the exact number of remaining cables, without the + 1.
β — the sum of the digits reached 15		The sum of the new number is below 15: β is cancelled. Return to the primary table (section 6).
γ — the last digit was odd		The last digit of the new number is even: γ is cancelled. The sequence is read from left to right again.

A rule inactive before the hack stays inactive after it. In practice, after a serial number reset no rule is active at all: read the remaining-cables column directly in the primary table, from left to right.

5. IDENTIFYING THE INDICATOR STATE

After each cut the indicator is redefined: its state, given by a colour and a rhythm, may change or stay the same. Observe it for at least five seconds before deciding, preferably shielded from direct light.

Name	Rhythm description	Code
STEADY	Indicator lit permanently, without interruption	F
SLOW	Regular flashing, about 1 flash per second	L
FAST	Regular flashing, about 5 flashes per second	R
DOUBLE FLASH	Two short flashes close together, then a pause of about one second	D

Possible colours: red, blue, purple (red and blue mixed), yellow (seen, depending on the lighting, as yellow, yellow-orange or orange — any orange shade must be read as YELLOW), cyan (light blue, blue-green) and white (cold shade, slightly bluish). Green is never used to designate a protocol: a steady green indicator means the device is neutralised.

5.1 — Conversion table — CHANNEL 1

CH 1	STEADY (F)	SLOW (L)	FAST (R)	DOUBLE (D)
RED	PP-39	ZC-62	MZ-89	VW-90
BLUE	LP-66	FN-98	CV-13	VR-26
PURPLE	PC-69	WH-32	WC-16	JV-58
YELLOW	UK-10	XF-45	MC-51	GV-81
CYAN	XN-43	TF-91	RG-21	FF-70
WHITE	EC-12	JP-86	MR-63	KW-80

5.2 — Conversion table — CHANNEL 2

CH 2	STEADY (F)	SLOW (L)	FAST (R)	DOUBLE (D)
RED	XN-43	UK-10	JP-86	ZC-62
BLUE	WC-16	PP-39	VW-90	MR-63
PURPLE	MZ-89	GV-81	TF-91	PC-69
YELLOW	EC-12	LP-66	JV-58	KW-80
CYAN	FF-70	FN-98	VR-26	CV-13
WHITE	MC-51	RG-21	XF-45	WH-32

5.3 — Conversion table — CHANNEL 3

CH 3	STEADY (F)	SLOW (L)	FAST (R)	DOUBLE (D)
RED	EC-12	MR-63	WC-16	ZC-62
BLUE	GV-81	KW-80	JV-58	TF-91
PURPLE	RG-21	PP-39	JP-86	PC-69
YELLOW	CV-13	FN-98	XF-45	VW-90
CYAN	FF-70	LP-66	MZ-89	UK-10
WHITE	XN-43	MC-51	VR-26	WH-32

The indicator rhythm is independent of the countdown beep rhythm: an accelerated countdown never changes the indicator rhythm.

6. PRIMARY PROTOCOL TABLE

To be used when rule β does NOT apply. Find the row for the protocol code (section 5), then the column for the number of remaining cables (shifted by +1 if rule α applies). Read the sequence in the direction set by rule γ and cut the first cable still connected.

Protocol	2 cables remaining	3 cables remaining	4 cables remaining	5 cables remaining	6 cables remaining
AJ-25	6-4-2-3-1-5	5-4-6-2-3-1	3-2-5-1-6-4	4-2-3-1-5-6	5-2-6-4-1-3
CC-68	2-4-1-6-3-5	2-4-5-3-6-1	1-2-3-5-6-4	6-5-1-4-2-3	4-3-5-2-6-1
CV-13	3-5-2-1-4-6	1-2-4-6-5-3	5-3-6-4-2-1	3-5-1-2-6-4	1-3-6-4-5-2
EC-12	3-4-2-1-6-5	4-3-1-2-5-6	5-3-1-2-6-4	6-2-3-4-1-5	1-2-5-4-3-6
EW-64	4-3-5-6-1-2	4-6-2-1-3-5	5-3-4-1-2-6	3-1-4-5-6-2	3-1-4-5-6-2
FF-70	3-1-5-2-6-4	3-2-5-4-6-1	5-2-4-3-1-6	6-1-3-5-4-2	3-2-1-4-6-5
FN-98	1-6-5-3-2-4	1-5-6-2-3-4	5-1-4-6-2-3	6-4-2-1-3-5	2-5-6-3-1-4
GV-81	2-1-5-6-3-4	3-5-4-6-2-1	6-1-4-3-5-2	2-6-4-1-5-3	2-5-1-6-4-3
JP-86	2-3-1-6-4-5	5-3-1-2-6-4	6-3-2-1-4-5	4-5-6-3-1-2	5-2-4-3-1-6
JV-58	3-2-1-6-4-5	2-1-3-6-5-4	1-2-3-6-5-4	2-1-5-6-3-4	5-3-4-2-1-6
KP-19	4-2-5-6-3-1	6-1-4-2-3-5	4-6-3-1-2-5	5-1-2-4-6-3	2-6-4-5-3-1
KW-80	1-5-4-3-2-6	2-4-3-6-1-5	2-4-3-5-6-1	4-1-6-5-2-3	5-4-1-3-6-2
LP-66	1-5-4-3-6-2	1-2-6-5-3-4	1-5-6-2-3-4	5-6-4-3-2-1	3-6-1-4-5-2
MC-51	1-6-2-3-5-4	4-2-6-5-1-3	6-1-3-5-2-4	5-4-6-2-3-1	5-3-2-6-4-1
MR-63	5-2-1-3-4-6	6-2-4-5-3-1	5-3-4-2-6-1	6-1-4-3-5-2	3-4-2-6-1-5
MZ-89	1-3-5-2-4-6	6-2-3-5-4-1	1-5-4-2-6-3	2-3-6-1-5-4	1-2-6-3-4-5
PC-69	6-5-4-1-2-3	5-2-4-3-1-6	4-3-1-6-5-2	3-1-2-6-5-4	5-4-6-3-2-1
PP-39	4-1-3-5-6-2	4-1-3-2-5-6	6-4-2-3-5-1	4-6-2-1-5-3	3-5-6-1-2-4
RG-21	3-4-2-6-1-5	6-1-2-4-5-3	1-4-3-2-5-6	1-5-3-2-4-6	2-5-3-6-4-1
TF-91	4-1-5-3-6-2	1-4-2-5-6-3	2-3-5-4-1-6	5-1-6-2-4-3	3-2-1-5-6-4
TU-35	5-3-1-2-6-4	4-2-5-1-6-3	1-3-4-5-2-6	3-2-6-1-5-4	1-6-2-5-3-4
UK-10	6-1-2-4-5-3	3-5-2-1-4-6	2-5-3-6-4-1	3-5-1-2-6-4	5-1-6-3-2-4
VR-26	2-5-6-4-1-3	1-3-4-2-6-5	3-2-5-4-1-6	3-1-6-5-2-4	4-1-2-3-6-5
VW-90	2-1-5-3-6-4	5-1-6-4-2-3	5-4-6-3-2-1	6-3-5-2-4-1	6-1-3-2-5-4
WC-16	3-4-6-2-5-1	4-1-5-2-6-3	3-6-5-1-2-4	5-4-1-2-3-6	4-5-1-6-2-3
WC-37	5-3-2-6-4-1	2-5-6-4-3-1	2-5-6-4-3-1	1-5-3-6-2-4	3-2-5-4-6-1
WH-32	2-3-1-4-5-6	5-1-2-3-6-4	2-6-3-4-5-1	4-5-6-1-2-3	4-3-2-5-1-6
XF-45	2-3-6-1-4-5	2-6-4-3-5-1	3-1-2-5-4-6	4-2-5-1-3-6	4-1-3-6-5-2
XN-43	5-1-4-3-6-2	6-1-5-2-3-4	3-4-6-1-2-5	3-6-2-5-1-4	3-4-6-1-5-2
ZC-62	6-2-5-3-4-1	2-4-3-6-5-1	6-3-2-5-4-1	2-6-3-4-1-5	6-3-1-4-2-5

The columns are indexed on the cables still connected at the time of reading, not on the number of cables at the start of the operation. This number falls with each cut: recount it before each reading.

Protocols absent from the conversion tables in section 5 relate to series 5 devices and must not be used.

7. BACKUP PROTOCOL TABLE

To be used **ONLY** when rule β applies (sum of the serial number digits ≥ 15). The protocol codes are the same as in the primary table, but the sequences differ. Same reading rules as in section 6.

Protocol	2 cables remaining	3 cables remaining	4 cables remaining	5 cables remaining	6 cables remaining
AJ-25	4-5-3-1-2-6	4-3-6-2-1-5	2-5-1-3-6-4	4-6-3-1-5-2	2-3-1-6-4-5
CC-68	1-2-3-6-5-4	6-4-3-2-5-1	5-4-3-2-1-6	4-6-1-5-2-3	4-2-6-3-5-1
CV-13	1-6-5-3-2-4	5-2-6-1-3-4	2-3-5-4-6-1	4-2-5-3-1-6	3-4-5-2-6-1
EC-12	5-2-6-4-3-1	6-3-1-5-4-2	1-5-6-4-2-3	3-2-6-1-4-5	2-1-4-6-3-5
EW-64	5-4-3-2-6-1	1-3-5-4-2-6	6-5-3-1-4-2	5-6-2-1-3-4	2-1-3-6-4-5
FF-70	5-6-2-4-1-3	1-3-4-5-2-6	6-4-2-3-1-5	2-4-1-6-5-3	3-1-4-5-2-6
FN-98	3-1-4-2-6-5	6-4-5-3-2-1	2-3-5-4-1-6	4-6-2-1-3-5	2-1-6-3-4-5
GV-81	3-2-6-5-1-4	5-6-4-3-1-2	1-2-5-4-6-3	4-5-2-3-6-1	6-2-1-5-3-4
JP-86	3-4-2-5-6-1	5-2-1-3-6-4	6-4-2-3-1-5	4-6-3-2-1-5	1-2-3-6-4-5
JV-58	4-2-6-1-5-3	6-2-4-1-5-3	2-1-3-5-4-6	3-6-1-5-4-2	6-1-5-3-2-4
KP-19	5-2-1-4-6-3	6-3-2-5-1-4	1-3-2-6-5-4	4-5-1-2-6-3	6-1-3-4-2-5
KW-80	2-1-6-3-5-4	4-2-5-3-6-1	2-6-3-4-5-1	1-5-6-3-2-4	3-5-6-2-1-4
LP-66	3-1-2-4-5-6	1-5-3-4-2-6	2-3-6-4-5-1	3-2-5-1-4-6	5-4-1-3-2-6
MC-51	5-4-3-6-2-1	5-3-2-1-4-6	2-6-3-5-1-4	1-4-5-3-6-2	1-2-3-4-5-6
MR-63	6-5-2-4-1-3	6-1-3-5-2-4	4-2-6-3-5-1	6-3-4-2-5-1	5-1-6-3-2-4
MZ-89	2-5-4-3-6-1	5-2-3-1-6-4	1-3-2-5-4-6	5-6-2-3-1-4	4-5-6-2-1-3
PC-69	6-3-2-1-5-4	2-4-6-5-1-3	1-4-6-3-5-2	6-1-3-5-2-4	1-3-4-2-6-5
PP-39	6-4-2-3-5-1	1-2-6-4-3-5	3-5-4-6-2-1	2-6-5-4-3-1	5-1-4-6-3-2
RG-21	3-2-1-5-6-4	4-1-6-3-2-5	3-4-5-6-1-2	4-6-1-3-5-2	3-4-6-5-1-2
TF-91	5-2-1-3-4-6	6-1-3-4-5-2	1-6-4-5-3-2	5-4-2-1-3-6	6-3-4-2-1-5
TU-35	2-3-6-4-1-5	5-4-3-2-6-1	3-5-1-4-6-2	1-2-3-5-6-4	1-3-5-6-2-4
UK-10	5-2-4-6-3-1	3-4-1-2-5-6	6-2-1-5-3-4	3-5-4-1-6-2	1-2-3-4-5-6
VR-26	5-1-4-6-2-3	2-3-6-4-5-1	5-1-6-4-3-2	4-5-3-6-2-1	1-2-3-5-4-6
VW-90	2-6-1-4-3-5	3-1-2-4-5-6	3-2-4-1-6-5	5-2-6-1-3-4	5-4-3-6-1-2
WC-16	6-5-2-3-4-1	4-5-3-1-6-2	6-1-2-4-5-3	5-1-4-3-6-2	1-4-3-5-6-2
WC-37	4-6-3-1-2-5	5-1-3-4-6-2	1-3-2-5-6-4	3-2-5-1-4-6	4-1-3-2-5-6
WH-32	1-4-6-3-5-2	5-4-3-1-6-2	5-3-1-6-4-2	5-6-4-2-1-3	2-5-1-6-3-4
XF-45	2-3-5-1-6-4	3-2-1-6-5-4	6-2-4-1-5-3	3-1-5-4-6-2	3-6-2-4-5-1
XN-43	5-6-2-1-4-3	6-5-4-3-2-1	6-5-3-4-1-2	2-3-5-4-6-1	6-4-2-5-1-3
ZC-62	2-3-6-4-5-1	5-4-3-1-6-2	1-6-4-3-5-2	4-5-3-2-6-1	4-2-6-3-5-1

The columns are indexed on the cables still connected at the time of reading, not on the number of cables at the start of the operation. This number falls with each cut: recount it before each reading.

Caution: confusing the primary table with the backup table is the leading recorded cause of failure in exercises.

8. ADDITIONAL INSTRUCTIONS, ANNEXES AND EXAMPLE

- 8.1 — Never move the device. On versions fitted with a motion sensor, the penalty is immediate.
- 8.2 — An out-of-sequence cut does not reset the operation: the indicator is redefined as after any cut, resume the procedure at step 2.
- 8.3 — Depending on the programmed security level and the number of cables present at arming, the device tolerates two, one or no out-of-sequence cuts. The fewer the cables, the lower the tolerance. This level is shown by no indicator. Assume you are allowed no mistake at all.
- 8.4 — Never cut two cables at the same time, and wait for the end of the rising sound signal before reading the new indicator state.
- 8.5 — The penalties following a mistake are random: time reduction, loss of the countdown sound signal, irregular signal, faulty display or countdown acceleration.
- 8.6 — Hacking Device: a hack is possible only once per operation. Its effects are described in section 4.5

Annex A — Sound and light signals

Signal	Meaning
Regular short beep	Countdown running (1 beep = 1 second, unless accelerated)
Very short high beep	Interrogation button pressed
Brief green + double high beep	Cut matching the sequence
Flashing red indicator + falling glissando	Out-of-sequence cut — penalty applied
Three rising notes	Indicator redefined — new reading required
Burst of rapid beeps	Motion detected — countdown accelerated
Two sweeps + "PIrA"	Hacked by Hacking Device — see section 4.5
Continuous signal	Detonation
Permanent steady green	Device neutralised

Annex B — Worked example (fictitious values)

Serial number 4C27, channel CH 2. The number contains a letter (α applies). Sum of the digits $4 + 2 + 7 = 13$, below 15: primary table (β does not apply). Last digit 7, odd: read from right to left (γ applies).

Cyan indicator, double flash → in the CH 2 table, protocol KD-00 (fictitious). Remaining cables: 3 (positions 2, 4 and 6) → rule α : "4 cables" column. Sequence read: 5-3-2-6-1-4. Rule γ : 4-1-6-2-3-5. First cable still connected: 4. After the cut, the indicator is redefined: resume at step 2 with 2 remaining cables ("3 cables" column).

Annex C — Procedure Δ (series 5 models)

On series 5 models, the cable to cut is found by adding the digits of the minutes shown and then subtracting the number of red cables. This procedure is not applicable on the C4 and C4 PRO models and is reproduced for reference only (service note no. 14/2019).

Annex D — Glossary

Term	Definition
Left / right button	Unmarked interrogation buttons on either side of the display (left: cables 1-3 side, right: cables 4-6 side).
Channel	State → protocol conversion table assigned at arming (CH 1 to CH 3).
Remaining cables	Cables still connected at the time of reading.
Neutralisation	Cutting of all connected cables. Confirmed by a steady green indicator.
Protocol	Priority order of the positions, specific to one indicator state and one cable count.

END OF DOCUMENT — If in doubt, re-read sections 3, 4 and 5. Any other information in this manual is given for guidance only.