

Reset to Default Values

At times it may be desirable to reset a Qdecoder to its default values (factory settings). This can be done with the programming button (if there is one) or by writing the value 8 in CV8.

! This deletes all previous settings of the decoder.

For resetting a Qdecoder to its default values with the programming button simply press it for about 10 seconds. Observe the LED:

- After 1 second the LED lights up continuously and the decoder possibly switches into the programming mode.
- After ca. 5 seconds the LED starts to flash. The LED flashes faster and faster until it extinguishes after about 10 seconds and the decoder is reset to its default values.

Overload, Short Circuit and their Consequences

Qdecoder are protected against short circuits and overload on the function outputs. In case of a short circuit (the current raises to more than 2 Amps) all outputs currently turned on will be switched off and can only be activated again after having reset the overload protection (see below).

If an overload or a short circuit is detected then the LED of the decoder blinks once for each function output (A0 through A7/A15) followed by a short pause. Short blinking pulses indicate function output that must be checked. In the case of "F" decoder the LED blinks for the function outputs that are not subject to a short or to an overload.

In this case you should

- Eliminate the short circuit.
- Press the programming button briefly (if it exists).
Alternatively you can turn off the system for a moment by pressing the „Stop“ button on the command station or write the value 7 in CV8.

Qdecoder are not toys and are not intended for children under 14 years.

Due to small parts that may be swallowed they are not suitable for children under 3 years. Inappropriate use may cause the risk of injury due to functional sharp edges and points! Only suitable for use in dry rooms. We reserve the right to make changes due to error, technical progress, ongoing product development or different production methods. We are not liable for any damages or consequential damages due to inappropriate handling or use, non-observance of this user manual, operation with modified or faulty transformers or other electrical equipment that has not been approved for the use with model trains, unauthorised interference, use of force, overheating, humidity or similar. All the above makes our warranty null and void. Decoder no longer needed may be disposed of at communal collection centres as electronic scrap.

Please keep this manual for later use!

Decoder Series

	F0 (mini)	Z1	Z2
Lamps and LEDs	✓	✓	✓
Daylight signals / LED modules (common anode)	✓	✓	✓
(Magnetic) turnouts, semaphore signals, relays	✗	✓	✓
Daylight signals / LED modules (common cathode)	✗	✗	✓
Motorised turnout drives / model motors	✗	✗	✓

Decoder Types

	N	Standard	Signal	+
Suitable for us with the Qdecoder Programmer system	✓	✓	✓	✓
Supports DCC and Märklin/Motorola	✓	✓	✓	✓
Quick programming with programming button (Z decoder)	✓	✓	✓	✓
CV programming	✓	✓	✓	✓
Accessory addresses freely available	✓	✓	✓	✓
Flashing mode / alternate flashing / pulsed mode	✗	✓	✓	✓
Dimmable brightness (adjustable revs)	✗	✓	✓	✓
Adjustable fade-in and fade-out times	✗	✓	✓	✓
Ausgänge mit Lok-Funktionstasten schaltbar	✗	✓	✓	✓
Programmable automated sequence control	✗	✗	✗	✓
Freely programmable function generator	✗	✗	✗	✓
Lighting effects	✗	✗	✗	✓
Supports control with push buttons and contacts	✗	✗	✓	✓
Pre-configured signal aspects	✗	✗	✓	✗

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Qdecoder

Commissioning of a Qdecoder

This manual is valid for all Qdecoder

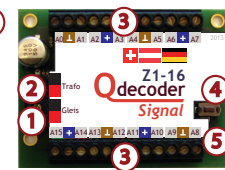
! Important information is marked with a pin.

! Information that must be adhered to is marked with an exclamation mark.

We congratulate you to choosing a Qdecoder. In conjunction with the attached leaflets this overview contains the most important information for commissioning a Qdecoder. How to use a Qdecoder is described in detail in the Qdecoder handbook. You may download the handbook at any time free of charge from our website at www.qdecoder.de or, if you prefer, purchase a printed version.

Please read this manual carefully prior to commissioning a Qdecoder. If Qdecoder are used different to what is described in the manual you will lose the warranty for the decoder. Never exceed the stated values for voltage and current. That way you risk the destruction of the decoder. The decoder may not be exposed to humidity or direct sunlight.

Construction of Qdecoder



- 1 digital signal
- 2 energy supply
- 3 function outputs
- 4 programming key
- 5 LED



Commissioning of a Qdecoder

1. Installation of a Qdecoder

Qdecoder of the “Z”series are completely flat on the underside without any projecting parts that could scratch the base. They may be fixed to the layout sub structure either with screws or with double sided adhesive tape. **Qdecoder** of the “F” series are operated without fixing them to the layout and are held by the electrical plug respectively the cable. If you wish, you may also fix them with double sided adhesive tape.

2. Connecting a Qdecoder

The decoder gets the required electrical energy as well as the control signals via the terminals **Gleis** resp. **Digital** ① and **Trafo** ②. The devices to be controlled are wired to the function outputs **A0** through **A7/A15** ③ of the decoder. The electrical connections of the different decoder types are also different and are described in detail in the leaflet “Electrical connections”: The wiring diagrams shown in this leaflet illustrate all supported applications of the function outputs of the decoder.

You may mix all types of supported devices (wiring schematics) and connect them to the **Qdecoder**.

3. Configuration of the Decoder

The properties of a **Qdecoder** are set with so called configuration variables (abbreviated CVs). You read and can set them either with the **Qdecoder** programmer or another digital command station. Please refer to the user manual of your command station for more detailed information.

The leaflet “Overview about configuration variables” lists all CVs supported by **Qdecoder**.

! Please observe the particular remarks in the leaflet “CV overview” regarding the use with *Lokmaus* / *Multimaus* and various types of Lenz systems.

Ex works **Qdecoder** for model trains are configured for the DCC data protocol, which can be changed to the Märklin/Motorola protocol by writing the value “2” into CV57.

Decoder of the “F” series and the “Z” series store the short locomotive address and the first accessory address in different CV addresses:

- “F” series: CV1: short loco address; CV50: first accessory address
- “Z” series: CV1: first accessory address CV50: short loco address

3.1 OPERATION AS ACCESSORY DECODER

Every **Qdecoder** can be used as accessory decoder. An accessory decoder switches its outputs due to so called accessory commands issued by the command station or by push buttons connected to the function outputs.

Decoder of the “Z” series and decoder with **signal extension** are set ex works as accessory decoder. In “F” decoder you must change CV60 to the value “4”.

In an accessory decoder one must program two settings for each signal, each turnout, each individual lamp, etc.:

- The required switch mode (CV550, CV553 ...) and
- The accessory address to be used for switching that output.

You will find all necessary information for configuring a decoder as accessory decoder under CV addresses 550ff in the leaflet “Configuration overview”. The leaflet “Switch modes” lists all possible switch modes supported by the decoder.

You may mix all types of switch modes on a **Qdecoder**, which are supported by the decoder.

Accessory commands issued by a digital system are marked as “1 ■” or “1 ■” in the manuals. The number indicates the accessory respectively the turnout address to be set at the command station. “■” stands for the command setting a signal to “Stop”. Subject to the make of the command station or the handheld controller the corresponding push button is marked in red and/or white or one of the following symbols: “-”, “◀” or “→”. “■” indicates the switch command for setting a signal to “Proceed”. The corresponding push button is either green and/or bears the symbol “+”, “▶” or “◀”.

3.2 OPERATION AS ACCESSORY dDECODER: QUICK START - THE PROGRAMMING BUTTON

With some **Qdecoder** you can set all function outputs with one command on your command station to the same operating mode and also determine the accessory addresses. Subsequently you may change all configurations by writing the appropriate values into the CVs. In the leaflet “Quick start guide - with programming button” all possible quick configurations supported by your decoder are described. Should the leaflet not have been supplied with the decoder then that decoder does not support quick start programming.

Quick start programming of **Qdecoder** with **signal extension** is quite different from the method for standard decoder.

3.3 OPERATION AS FUNCTION DECODER

Qdecoder for model trains can be used as function decoder. Function decoder switch outputs subject to the function buttons activated on your command station, whose status is continuously transmitted to the decoder.

Decoder of the “F” series without **signal extension** are set ex works as function decoder. In other decoder types one must write the value “1” in CV60. You will find all necessary information for configuring a decoder as function decoder under the CV addresses 33 through 46 in the leaflet “Overview over configuration variables”

Switch modes set with CV550, CV553, etc. are also effective in **Qdecoder** configured as function decoder.

3.4 AUTOMATIC SEQUENCE CONTROL OPERATION

All-in-one **Qdecoder** can also be used for sequence control of various switching sequences provided CV60 has been set to the value “8”. In this mode the decoder realises a so-called time controlled status automat.

The leaflet “Overview over configuration variables” provides the necessary information for the configuration as automatic sequence control under the CV addresses 300 through 549.

One must enter three settings for each condition (consecutive steps) of an automatic sequence control:

- Duration of the condition (CV300 ...)
- Function outputs to be switched during that time (CV400...) and
- Number of the following condition (CV500 ...).

Switch modes set with CV550, CV553, etc. are also effective in **Qdecoder** configured for automatic sequence control.

3.5 THE FUNCTION GENERATOR

All-in-one **Qdecoder** offer a powerful function generator that allows the realisation of complex functions. The leaflet “The function generator” provides an overview about this function generator. For activating the function generator write the value “2” in CV60 (function generator only) or “10” (function generator and status automat).