GeoDinQGIS – Help

GeoDin plugin for QGIS 3 and QGIS 4

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History

Version	Date	Initials	Comment
0.0	08/2023	EbJo	GeoDinQGIS help created
1.0	10/2026	RoSc	Revised for GeoDinQGIS 4.0 (QGIS 4/Qt6 and QGIS 3): new icons, spelling GeoDin, load DDX automatically, check and registration of the GeoDin COM server, status window, single selection in the Explorer, icon overview in the appendix

1. General

1.1 Requirements

System requirements

- Windows (64 Bit)
- PDF reader to open the help of the GeoDin plugin for QGIS
- **QGIS 3.x** (LTR, 64 bit) from QGIS 3.22 **or QGIS 4.x** (Qt6, 64 bit)
  - Tested with QGIS 3 LTR and QGIS 4.2
- **GeoDin from version 9.5** (64 bit)
  - GeoDin must be registered as COM server. The registration can be checked and carried out directly in the DDX dialog (see chapter 1.3).
- ODBC database drivers (64 bit) for the database systems used
- GeoDin configuration (geodin.ini)
  - Only databases from the GeoDin configuration are supported.

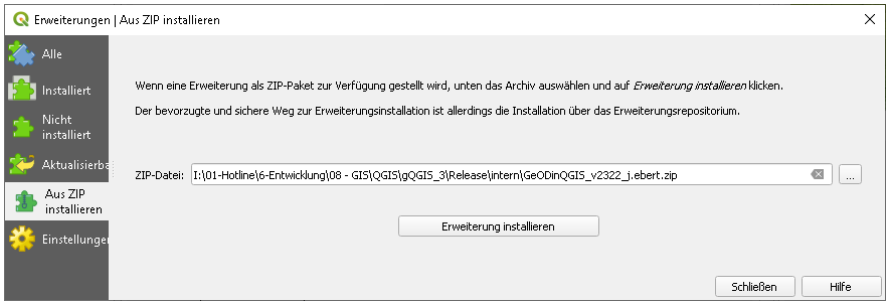
1.2 Installation of the GeoDin plugin for QGIS

The GeoDinQGIS plugin can be installed with the standard options of QGIS. The same plugin runs in QGIS 3 and QGIS 4.

> **Caution**
>
> Always make sure that exactly one GeoDinQGIS plugin is installed and not several, possibly different versions!
>
> Do not keep copies or backups of the plugin folder (e.g. `GeODinQGIS_backup`) in the QGIS plugin folder – otherwise QGIS cannot load the plugin.

(1) Local installation from ZIP file

- QGIS » Plugins » Manage and Install Plugins...
- Install from ZIP



- Installation folder

  QGIS 3: `%APPDATA%\QGIS\QGIS3\profiles\default\python\plugins\GeODinQGIS`

  QGIS 4: `%APPDATA%\QGIS\QGIS4\profiles\default\python\plugins\GeODinQGIS`

> **Note**
>
> The plugin is shown as **GeoDinQGIS** in QGIS. For compatibility reasons the technical folder name remains `GeODinQGIS`.

(2) User-specific QGIS plugin folder

- Create any QGIS plugin folder, e.g. `D:\somewhere\QGIS\Plugins`
- Set the QGIS system variable

Windows » System Properties » tab Advanced » Environment Variables

or Windows » Command Prompt:

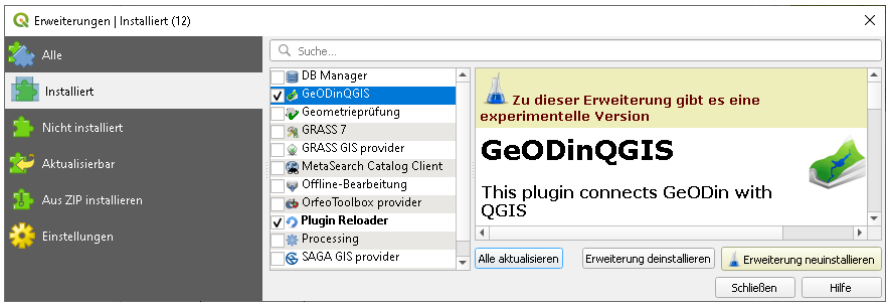
```
setx QGIS_PLUGINPATH D:\somewhere\QGIS\Plugins
```

- Check the QGIS system variable – open a new command prompt (!)

```
set qgis
```



- Unzip the ZIP file of the GeoDinQGIS version with relative paths into the plugin folder
- Installation folder: `D:\somewhere\QGIS\Plugins\GeODinQGIS`
- Restart QGIS (!) and activate the plugin: QGIS » Plugins » Manage and Install Plugins… » Installed



- To update the plugin:
  - Delete the installation folder `D:\somewhere\QGIS\Plugins\GeODinQGIS`
  - Unzip the ZIP file of the new version to `D:\somewhere\QGIS\Plugins`
  - Restart QGIS

1.3 Installation of GeoDin and COM registration

The GeoDinQGIS plugin only works with an installation of GeoDin from version 9.5 (64 bit) including a COM registration (64 bit) of GeoDin. GeoDin must be registered as COM server on every computer on which the plugin is used.

> **New (10/2026)**
>
> The plugin checks the COM registration itself and can also register GeoDin itself – a manual call of `geodin.exe /regserver` is usually no longer necessary.

Checking the COM registration

The registration is checked in two places:

- in the **DDX dialog** as soon as a geodin.ini is chosen (status line below the properties, see chapter 3.2)
- **before connecting** to GeoDin (button GeoDin connection)

The expected GeoDin application is the one belonging to the chosen GeoDin configuration:

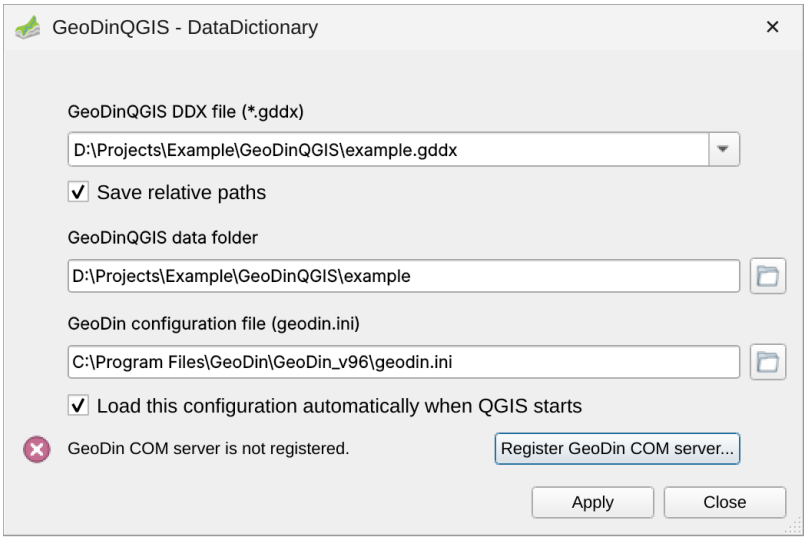
```
<folder of the geodin.ini>\Bin\geodin.exe
```

State	Display	Meaning
ok	GeoDin COM server registered: <geodin.exe> (<version>)	The matching GeoDin application is registered. No symbol, no action required.
⊗ Error	GeoDin COM server is not registered.	No GeoDin is registered as COM server.

State	Display	Meaning
Warning	Another GeoDin application is registered …	A different geodin.exe than the one of the chosen configuration is registered (e.g. another GeoDin version).
Error	GeoDin 64 bit and 32 bit are registered as COM server.	Conflict between 32 bit and 64 bit registration.
Error	GeoDin version … is not supported.	The GeoDin application of the configuration is older than 9.5 or 32 bit.
Info	No GeoDin application next to the geodin.ini …	There is no geodin.exe in `<folder of the geodin.ini>\Bin`; the registration is not checked.

Registering GeoDin as COM server

1. Click **Register GeoDin COM server…** in the DDX dialog – or answer the question about the registration with **Yes** when connecting.
2. Windows asks once for administrator rights (User Account Control) – confirm.
3. A status window shows that the COM server is being registered. Afterwards the registration is checked again and the result is reported.



DDX dialog with missing COM registration

Note

Mapped network drives (e.g. `I:\`) are not available with administrator rights. The plugin automatically uses the UNC path (`\\server\share\…`) instead.

Without administrator rights the message shows the required commands, which can be run e.g. by IT, and the commands to restore the previous registration.

After a new registration of the GeoDin COM server, the first start of GeoDin may take longer.

After a registration via the plugin no restart of QGIS is necessary. If the GeoDin installation/registration was changed outside QGIS, restart QGIS.

The help menu and the DDX dialog are available even without a valid COM registration. The current installation is shown in the dialog 'About GeoDinQGIS'.

Background: manual registration

- From version 9.5 GeoDin is only available as 64-bit application (up to version 9: 32 bit).

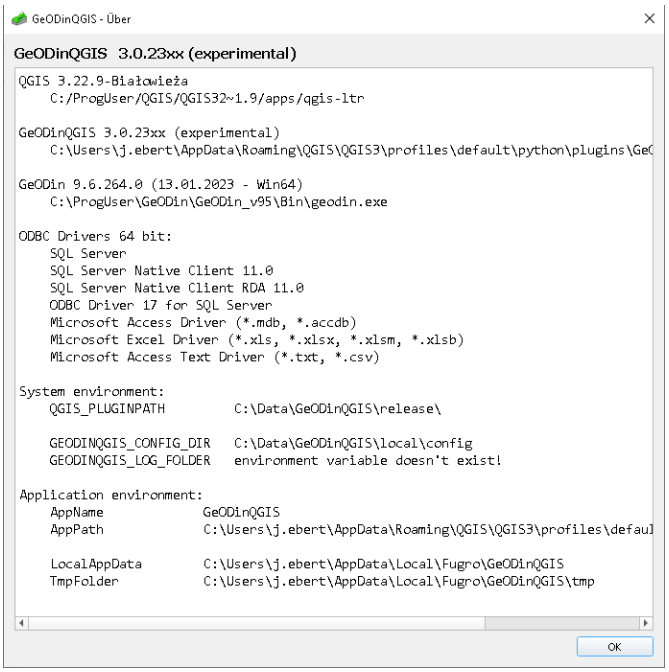
- 32-bit applications are registered in the 32-bit DCOM component service, 64-bit applications in the 64-bit DCOM component service. Exactly one GeoDin should be registered as COM server on a computer.
- Register or unregister (run as administrator!):

```
geodin.exe /regserver
geodin.exe /unregserver
```

- A 64-bit registration overwrites an existing 64-bit registration, but not a 32-bit registration. An old 32-bit registration must be removed with the 32-bit geodin.exe (download it again from the archive if needed). The plugin detects this case (state '64 bit and 32 bit registered').

1.4 Environment

The environment is shown in the dialog 'About GeoDinQGIS' (see GeoDinQGIS toolbar).



Dialog 'About GeoDinQGIS' (example)

GeoDinQGIS system variables

GEODINQGIS_CONFIG_DIR

- Default: `<GeoDinQGIS AppPath>\config\`
- Optionally the Windows system variable GEODINQGIS_CONFIG_DIR defines a folder in addition to the subfolder config of the installation folder. The folders are searched in this order: 1. `%GEODINQGIS_CONFIG_DIR%`, 2. `<installation folder>\config`.

GEODINQGIS_LOG_FOLDER

- Default: `%LOCALAPPDATA%\Fugro\GeODinQGIS\logs\`
- The system variable GEODINQGIS_LOG_FOLDER changes the folder of the GeoDinQGIS logs (`gQGIS.debug.log`, `gQGIS.error.log`).

GeoDinQGIS environment

LocalAppData

- Default: `%LOCALAPPDATA%\Fugro\GeODinQGIS\` – local data (configuration, logs by default, ...)

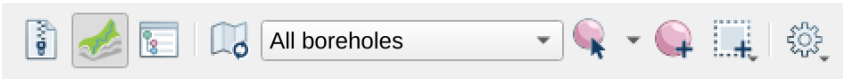
TmpFolder

- Default: `%TEMP%\GeODinQGIS_*` (depends on the Windows settings)
- A temporary folder is created for every QGIS session and deleted on exit. If QGIS is terminated abnormally it remains; after closing all QGIS sessions these folders can be deleted.

QGIS user settings

- `GeODinQGIS/autoLoadDDX`, `GeODinQGIS/autoLoadDDXFile` – settings for 'load DDX automatically' (see chapter 3.2), stored in the QGIS user profile

2. GeoDinQGIS toolbar



GeoDinQGIS toolbar

Buttons of the GeoDinQGIS toolbar

Open DDX dialog
see chapter DDX dialog. Always active – even without GeoDin connection or COM registration.

Activate/deactivate GeoDin connection
Only active if a DDX is set or loaded without errors. The COM registration is checked before connecting (see chapter 1.3).

Open/close GeoDinQGIS Explorer
Only active if GeoDin is connected. See chapter GeoDinQGIS Explorer.

Update selection of GeoDin layers
see chapter Interaction with GeoDin

Selection of GeoDin layers
see chapter Interaction with GeoDin

Hotlink tool
see chapter Interaction with GeoDin

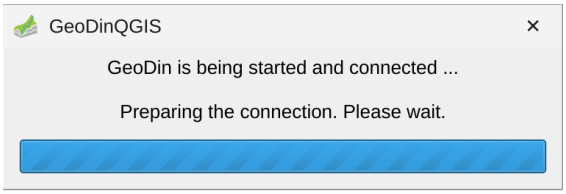
Create object
see chapter Interaction with GeoDin

Selection tool
see chapter Interaction with GeoDin

GeoDinQGIS toolbar menu
Gear on the right, see below

Status window when connecting

While GeoDin is being started and connected, a status window shows the progress. If GeoDin waits for the license selection, 'Waiting for GeoDin (license selection) ...' is shown – then bring the GeoDin window to the front and choose the license. If GeoDin still does not answer, the plugin brings the GeoDin window to the front and shows short instructions; 'Retry' continues waiting, 'Cancel' stops connecting.



GeoDinQGIS toolbar menu



Language
Language of the GeoDinQGIS user interface: **Automatic (QGIS language)** (default – GeoDinQGIS uses the language of the QGIS user interface, unsupported languages → English; the detected language is shown in brackets), Deutsch or English. The current setting is bold and marked with a green check mark on the flag. The choice is saved.

Layer styles...
Define style files (QGIS layer style *.qml) for object and measurement point layers. They are applied when a GeoDin layer is added. Without style file, objects are shown as red circles labelled with the long or short name, measurement points by type (boreholes red circles, filters blue circles, samples blue squares) labelled 'name - measurement point name (depth from m - to m)'. A style file is created in QGIS: Layer properties » Symbology » Style » Save Style... 'Update layer(s)' keeps the current style of a layer.

Selection radius...
Distance in pixels in which a click with the selection tool finds an object (default 6, 1–50). The nearest object is selected.

Open help
Opens this help. A PDF reader must be installed.

Support
Creates a ZIP file for the support and opens a new e-mail to support@geodin.com. Before, you choose what the ZIP file contains: GeoDinQGIS logs (always), system information and state of the COM registration (preset), optionally the current DDX and the geodin.ini (can contain database credentials – only include it if the support asks for it).
The e-mail is opened in the default e-mail program; the text has room for the problem description and a short system summary. If the classic Outlook is the default e-mail program, the ZIP file is already attached. With other programs (e.g. the new Outlook) the folder with the selected ZIP file opens as well – the ZIP file is also in the clipboard and is attached with Ctrl+V in the e-mail. If no e-mail program is set up, GeoDinQGIS shows the support address and the path of the ZIP file, each with a copy button. The ZIP files are stored in `%LOCALAPPDATA%\Fugro\GeODinQGIS\Support`.

About GeoDinQGIS...
Opens the dialog 'About GeoDinQGIS' with information about the environment.

3. GeoDinQGIS-DataDictionary

3.1 General

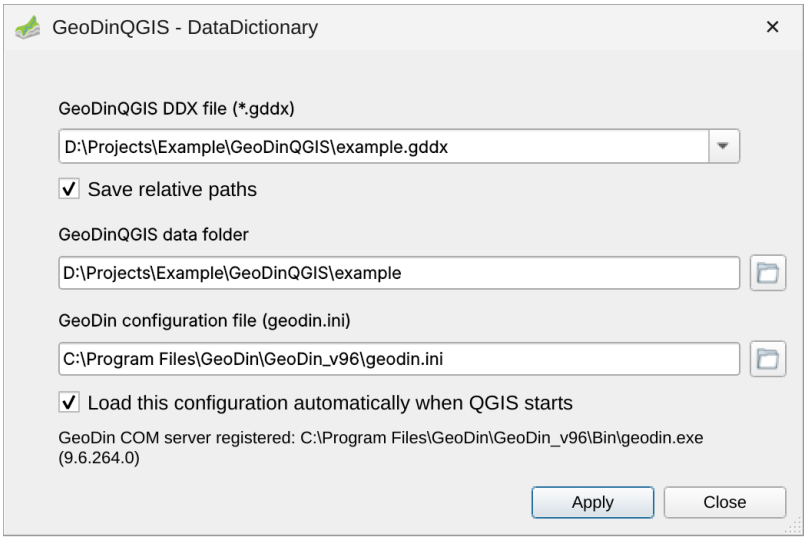
The DataDictionary (DDX) stores and manages the metadata of the GeoDinQGIS plugin.

In principle a DDX can be used in several QGIS projects. However, the DDX is not multi-user capable.

3.2 DDX dialog

Properties

When the dialog is opened, the properties of the current DDX are always loaded and shown.



DDX dialog



List of the GeoDinQGIS DDX file

GeoDinQGIS DDX file (list)
The list shows the recently used DDX files (up to 10, missing files greyed out). At the end there are **Open other DDX file...** (choose an existing file) and **Create new DDX file...** (choose folder, enter name). The path can also be typed in directly.

Apply / Close
Apply saves the DDX (if changed; data folder and GeoDin configuration file, not the QGIS project), loads it as current DDX and closes the dialog. **Close** ends the dialog without loading; if the DDX was changed, GeoDinQGIS asks whether the changes are applied or discarded.

Save relative paths
Paths are stored relatively in the DDX (recommended, see data structure below).

GeoDinQGIS data folder of the DDX
Opens a dialog to choose a data folder

GeoDin configuration file (geodin.ini)
Opens a dialog to choose a geodin.ini

Load this configuration automatically when QGIS starts
New – see 'Load DDX automatically'

State of the GeoDin COM server
New – result of the COM check; if needed with button **Register GeoDin COM server...** (see chapter 1.3)

The symbols left of the fields show notes, warnings and errors; the tooltip contains the text.

Create a new DDX

1. In the list of the GeoDinQGIS DDX file choose **Create new DDX file...** – choose folder, enter name, close dialog.
2. Adjust the GeoDinQGIS data folder – a folder with the same name as the DDX file in the same folder is preset.
3. Choose the GeoDin configuration file (geodin.ini) – a geodin.ini is mandatory for the DDX. If the field is empty, the geodin.ini of the GeoDin application started last is suggested (info symbol). The COM registration is checked afterwards.
4. Optional: activate **Load this configuration automatically when QGIS starts**.
5. Close the DDX dialog with «Apply» – the new DDX is saved and becomes the current DDX of the QGIS project.

> **Note**
> Recommended data structure (preferably local):

Path	Content
`\any_path\some_qgis_project.qgz`	QGIS project file (*.qgz)
`\any_path\*\`	optional data folder with relative path to the QGIS project file
`\any_path\*\ddx_name\ddx_name.gddx`	GeoDinQGIS DDX file (*.gddx) and ...
`\any_path\*\ddx_name\ddx_name`	... GeoDinQGIS data folder in one folder, relative to the QGIS project file
`\geodin_app_folder\geodin.ini`	GeoDin configuration file; geodin.exe is expected in `\geodin_app_folder\Bin\`

Select DDX

1. Select DDX – choose a recently used DDX file from the list or an existing GeoDinQGIS DDX file via **Open other DDX file...**. If the file is not a GeoDinQGIS DDX file, an error message is shown.
2. Close the DDX dialog with «Apply» – only then the chosen DDX becomes the current DDX of the QGIS project.

> **Note**
> A change of the current DDX takes effect on the GeoDinQGIS plugin immediately, but has no effect on data already referenced in the QGIS project. The data sources of the QGIS layers are not changed, even if the layers were created with the plugin.
>
> Deleting the entry GeoDinQGIS DDX file and closing the DDX dialog with «Apply» removes the DDX from the QGIS project.

Load DDX automatically

> **New (10/2026)**
> With the option **Load this configuration automatically when QGIS starts** the DDX does not have to be chosen again in every new project.

- Activate the option and close the DDX dialog with «Apply» – the DDX file is stored in the QGIS user settings.

- The DDX is loaded when QGIS starts (new project) and when QGIS projects **without** GeoDinQGIS settings are opened.
- QGIS projects with their own DDX keep using their own DDX.
- Only one DDX can be loaded automatically. To switch it off, deactivate the option for the automatically loaded DDX and confirm with «Apply».
- The option is only available if a DDX file is chosen.

Change DDX properties

> **Caution**
> Changing the GeoDin configuration file (geodin.ini) of an existing DDX has considerable effects: GeoDin database connections referenced in the DDX and their subordinate data can become orphaned. However, the change can be necessary if the location in the file system has changed.

1. Select DDX – changes are possible for the current DDX and for any existing DDX.
2. Adjust the properties (GeoDinQGIS data folder, geodin.ini). When closing with «Close», GeoDinQGIS asks whether the changes are applied or discarded.
3. Close the DDX dialog with «Apply» – the DDX is saved and becomes the current DDX. **After applying, the changes cannot be undone.**

4. GeoDinQGIS-Explorer

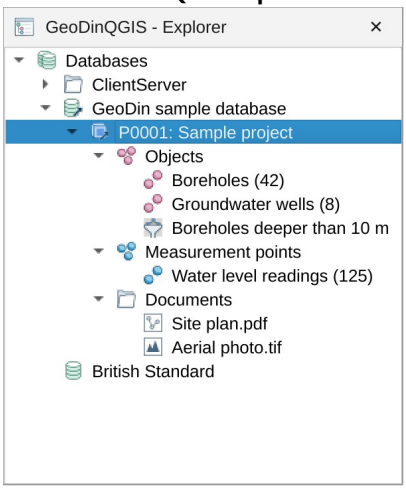
4.1 General

The GeoDinQGIS Explorer is a main part of the GeoDinQGIS plugin; it manages all database connections and queries.

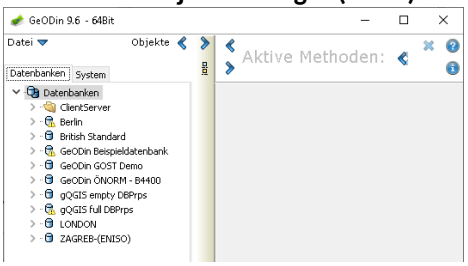
The Explorer window shows the objects in a tree. Symbols and structure basically correspond to the GeoDin Object Manager, with these differences:

- Databases are only shown after they were added to the current DDX.
- GeoDin groups are not supported and not shown. GeoDin system queries are shown under the projects or the database (see query types).
- Single objects and measurement points are not shown.
- Of the documents of the GeoDin database only the 'GeoDin GIS layers' are shown; documents are not grouped further.

GeoDinQGIS Explorer



GeoDin Object Manager (GOM)



Position of the Explorer

- The GeoDinQGIS Explorer is opened with the button in the GeoDinQGIS toolbar or via QGIS » View » Panels » GeoDinQGIS Explorer. The button is only active with an active GeoDin connection.
- When it is opened the first time, the Explorer is shown in the left dock area of QGIS – below the existing panels, i.e. usually **at the bottom left**.
- Like all QGIS panels, the Explorer can be dragged by its title bar to any position, e.g. top left above the Browser, to the right edge or as a tab of another panel. A double-click on the title bar or the button in the title bar undocks it as a separate window or docks it again.
- QGIS saves the chosen position on exit and restores it on the next start.

Usage

- **Exactly one** entry is selected in the Explorer at a time (single selection).
- A right-click selects the entry under the mouse pointer and opens its context menu – the context menu always belongs to the clicked entry.
- Expanding an entry selects it.
- 'All objects', the object types and the measurement point types show the number of objects or measurement points in brackets, e.g. 'Boreholes (42)'. The number is determined from the GeoDin database when the project is opened the first time and reloaded with **Refresh** in the context menu of the project; user queries have no number. The number does not appear in the QGIS layer names.

Context menus

Entry	Menu item	Function
Databases	<database name>	Adds a database of the GeoDin configuration to the DDX (only active if it is not in the Explorer yet)
Database	Open… / Close…	Opens (login if required) or closes the database
	Remove…	Removes the database from the DDX; its layers are removed from the QGIS project
	Update layer data	GeoDin exports the data of all queries that already have a layer in QGIS again (only active if there are such layers)
	Show in GeoDin	Selects the database in the GeoDin Object Manager
Project	Open… / Close…	Expands or collapses the project; Close discards the loaded queries
	Update layer data	as for the database, only for this project
	Refresh	Reloads object types, measurement point types and numbers from the GeoDin database; layers are not changed
	Show in GeoDin	Selects the project in the GeoDin Object Manager
Query	Add layer	GeoDin exports the data of the query, the layer is added to the QGIS project
	Zoom to layer(s)	Zooms the map to the layers of the query
	Select layer(s)	Selects the layers of the query in the QGIS layer tree
	Update layer(s)	Exports the data of the query from GeoDin again
	Remove layer(s)	Removes the layers from the QGIS project and the exported data
	Remove exported data	Removes exported data without layer (only active if there is no layer, but an export file)
	Show in GeoDin	Selects the query in the GeoDin Object Manager
Document	Add layer	Loads the document (GeoDin GIS layer) as layer; also by double-click

- A layer is only added if GeoDin wrote the export file successfully and the layer is valid – otherwise an error message is shown.

Symbols in the GeoDinQGIS Explorer



Databases
Root of all database connections of the DDX; context menu: add database



Database group
Group from the GeoDin configuration



Database (closed)



Database (open)



Project (closed)



Project (open)



Objects
Queries on objects

Measurement points
Queries on measurement points

Documents
GeoDin GIS layers of the project

Document

Document (raster data, TIF)

4.2 Databases

The GeoDinQGIS plugin supports the following database systems:

- Microsoft Access
- Microsoft SQL Server
- PostgreSQL

Further database systems on request.

> **Note**
> If a database entry in the GeoDin configuration is incomplete (e.g. without driver), only this database is marked invalid; the GeoDin connection and the other databases remain usable. Opening such a database shows a clear error message instead of the login.

4.3 Queries

Query types in the GeoDinQGIS Explorer

Standard object queries

Standard measurement point queries

User queries
GeoDin user queries and GeoDin system queries (*.GSQ files in the QUERYDEF folder of the GeoDin configuration). System queries are shown, depending on the GeoDin setting “Query beneath the object type”, under every project (project queries) or under the database (database queries) with the name from the GeoDin Object Manager; the tooltip shows the file. If GeoDin does not offer a system query in a project (conditions of the query), adding the layer shows a message. System queries directly under the database, the project, an object or a measurement point are not supported.

> **Note**
> GeoDin user queries can return results without coordinate fields, or the coordinates are in other fields than the standard coordinate fields. Whether a query is suitable can be tested e.g. with the method «Publish and Export» → «Export shape data» in the GeoDin Object Manager (GOM): if the objects are shown in the preview without an error message, the query can also be used in the GeoDinQGIS plugin.

Coordinate system

For display and processing in a GIS the coordinates of the GeoDin objects alone are almost worthless: they only give the position in a coordinate system. Only the definition of the coordinate system – the spatial reference system – determines the position on the earth's surface unambiguously.

The coordinate system is read from the query result when a layer is created and assigned to the new layer. The EPSG code is always read from the field **EPSG** of the first feature. If the field does not exist or the EPSG code is not supported by QGIS, the plugin assigns no coordinate system and EPSG 4326 (WGS 84) is used by default.

5. Interaction with GeoDin

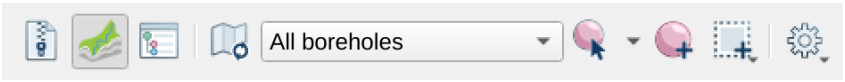
Update selection of GeoDin layers
Updates the selection list of GeoDin layers and the data of the selected layer (new export from GeoDin, as 'Update layer(s)' in the Explorer) – e.g. after creating or changing objects in GeoDin. After adding or deleting a layer the selection is updated automatically; after moving a layer or changing the layer order in QGIS it must be updated with this button.

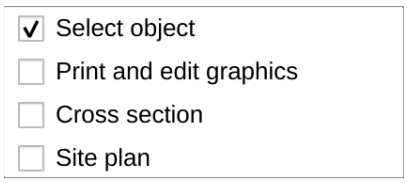
Selection of GeoDin layers
Defines which GeoDin layer is used by the hotlink tool and the selection tool.

Selection tool
A click on the icon opens the menu: first choose the GeoDin function, then the objects of the preselected GeoDin layer are selected directly in the map: drag a rectangle or click an object (the nearest object within the selection radius is selected, default 6 pixels, adjustable in the settings menu under “Selection radius...”); hold Shift to add to the selection, Ctrl to deselect objects. After each selection GeoDin creates the object selection and executes the function chosen in the arrow menu. The tool stays active until another QGIS tool is chosen.
Several features: an object group is created and marked in the GeoDin Object Manager (GOM).
Exactly one feature: the corresponding object is marked in the GOM.
The menu chooses what GeoDin does with the object selection: **Select object** (default), **Print and edit graphics**, **Cross section** (cross section wizard) or **Site plan**. Cross section and site plan need several objects. The choice is saved (check mark in the menu, shown in the tooltip) and the tool is activated.

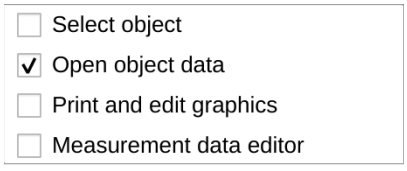
Hotlink tool
After activation, every click on a feature of the preselected GeoDin layer selects the corresponding object in the GeoDin Object Manager (GOM).
The arrow next to the icon chooses what GeoDin does afterwards: **Select object**, **Open object data** (default), **Print and edit graphics** or **Measurement data editor**. The choice is saved and the hotlink tool is activated. If the function cannot be executed, a warning is shown in the QGIS message bar; the object stays selected in the GOM.

Create object
After clicking the icon, click in the map: GeoDin opens the dialog 'Create object' with the coordinates of the point (in the CRS of the GeoDin layer), the project and the object type of the preselected layer. Only for object layers of a project. After completing the dialog in GeoDin, update the layer with the button 'Update layer' in the QGIS message bar.





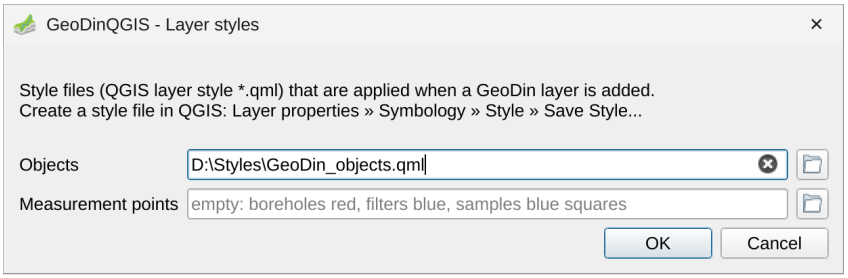
Menu of the selection tool



Arrow menu of the hotlink tool

5.1 Layer styles

When a GeoDin layer is added, an own QGIS layer style (symbol, colour, labels, filters, pop-ups ...) can be applied automatically – separately for objects and measurement points.



Dialog 'Layer styles'

Define a layer style

1. Add a GeoDin layer and style it in QGIS as required: Layer properties » Symbology (symbol, colour) and » Labels.
2. Save the style as file: Layer properties » Symbology » Style » Save Style... » format 'QGIS Layer Style File' (*.qml).
3. In the menu of the GeoDinQGIS toolbar (gear) » Layer styles... choose the file for objects or measurement points and confirm with «OK».
4. From now on newly added layers get this style: object layers ('All objects', object types, user queries on objects) the style for objects, measurement point layers the style for measurement points.

> **Note**
>
> Empty field = default style: objects as red circles labelled with the long name (LONGNAME), else the short name (SHORTNAME), else the INVID. Measurement points by type – boreholes (BRG, E2L, G1L) red circles, filters (FIL, E2F, G1F) blue circles, samples (PRB, E2S, G1S) blue squares, other types grey circles (type from the INVID) – labelled **long name/short name - INVNAME (INVZBEG m - INVZEND m)**, e.g. 'Bo-01 - Filter 1 (55 m - 59 m)'. Missing parts are left out – samples, filters and boreholes have different fields; a borehole without INVNAME and depths is shown e.g. only as 'Bohrung 01'.
>
> Own labels with fallback fields: in Layer properties » Labels use an expression with attribute(@feature, 'FIELD') instead of "FIELD" – if the field is missing in the layer, attribute() only returns an empty value, whereas a direct field reference makes the whole expression invalid. Example: coalesce(attribute(@feature, 'LONGNAME'), attribute(@feature, 'SHORTNAME')).
>
> Existing layers are not changed. 'Update layer(s)' keeps the current style of a layer.
>
> If the style file is missing or cannot be loaded, a warning is shown in the QGIS message bar and the default style is used.
>
> The setting applies per QGIS user profile (not stored in the QGIS project or DDX). QGIS 3 and QGIS 4 have separate settings – set them in each version.
>
> Tip: store the style files e.g. on a network drive so that all colleagues can use the same style.

6. Appendix: icon overview

All icons of the GeoDinQGIS plugin (SVG, as of 10/2026).

Icon	Meaning	Used in
	GeoDinQGIS menu	Toolbar
	Help	Menu
	DataDictionary (DDX), select DDX	Toolbar, DDX dialog
	GeoDin connection / GeoDin	Toolbar, context menu
	GeoDinQGIS-Explorer	Toolbar
	Update GeoDin layer selection	Toolbar
	Selection-Tool	Toolbar
	Hotlink-Tool	Toolbar
	Create object	Toolbar
	Deutsch	Menu language
	English	Menu language
	Help	Menu
	Support	Menu
	About GeoDinQGIS	Menu
	Choose folder/file	DDX dialog
	Update	Context menu
	Remove	Context menu
	Info	DDX dialog (state)
	Warning	DDX dialog (state)
	Error	DDX dialog (state)
	Databases	Explorer
	Database group	Explorer
	Database	Explorer
	Database (open)	Explorer
	Project	Explorer
	Project (open)	Explorer
	Objects	Explorer
	Measurement points	Explorer
	Documents	Explorer
	Standard object query	Explorer
	Standard measurement point query	Explorer
	User query	Explorer
	Document	Explorer
	Document (TIF)	Explorer

7. Appendix: Oracle databases

7.1 Requirements

- Oracle database in the GeoDin configuration (FireDAC driver `Ora`)
- Oracle Database 12.1 or newer
- Python package **oracledb** 2.0 or newer in the Python environment of QGIS. No Oracle Client is needed.

7.2 Install the Oracle driver

QGIS 3 and QGIS 4 have separate Python environments. Install the package for each QGIS version you use.

1. Close QGIS.
2. Windows start menu » QGIS <version> » **OSGeo4W Shell**, right-click and **Run as administrator**.
3. Install the driver:
   `python -m pip install oracledb`
4. Check the installation:
   `python -c "import oracledb; print(oracledb.__version__)"`
5. Start QGIS.

> **Note**
> Without administrator rights, `python -m pip install --user oracledb` installs the package for the current Windows user only.
> Without internet access: download the wheel file `oracledb-…-win_amd64.whl` matching the Python version of QGIS from pypi.org/project/oracledb and install it with `python -m pip install <file>`.

7.3 Connection

- The **Database** parameter of the GeoDin configuration is used as it is:
  - Easy Connect, e.g. `dbserver.company.com:1521/ORCL`
  - TNS alias from tnsnames.ora: set the Windows system variable `TNS_ADMIN` to the folder of tnsnames.ora
  - full connect descriptor `(DESCRIPTION=…)`
- User and password come from the GeoDin configuration. If they are missing, the plugin asks for them when the database is opened.
- Windows authentication (OSAuthent) is not supported for Oracle.

> **Troubleshooting**
> **Python module 'oracledb' not installed**: install the driver for the QGIS version in use (chapter 7.2).
> **DPY-3001**: the Oracle server requires Native Network Encryption, which is not supported; IT can set up TLS (TCPS) instead.
> Details are in the logs gQGIS.error.log and gQGIS.debug.log (chapter 1.4). Passwords are replaced with ***** there.