

Installing the MotorXP skills

MotorXP AI Skills

Codex and Claude Code

Purpose

These skills help create, review, and analyze MotorXP-PM and MotorXP-AFM workflows, including the MATLAB API, JavaScript geometry, JSON parameter maps, FEA, TSEMO, Pareto analysis, safe resume, and design export.

Package contents

File	Purpose
MotorXP_Codex_SKILL.md	Skill for Codex
MotorXP_Claude_Code_SKILL.md	Skill for Claude Code
MotorXP_AI_Skills_Installation_Guide_eng.pdf	This guide (PDF edition)

Before installation

- Install the app or CLI you want to use. These commands install the MotorXP skill only.
- Keep the source files unchanged. Copy the required file and name the installed copy SKILL.md.
- The skills have been sanitized to remove project operating points, dimensions, personal names, and customer names. Preserve this rule when extending them.
- Choose either project installation or personal installation. You do not need both.
- Start a new agent session after installation. If the skill is missing, restart the app or CLI.

How to read the PowerShell examples

Yellow highlighted text is a path you must replace. Keep the surrounding single quotes.

YOUR_PROJECT_FOLDER means the folder containing your MotorXP project; YOUR_SKILL_FILES means the folder containing the downloaded skill file. The project folder and source-file folder may be different.

Run commands in **PowerShell**. Enter example prompts inside the agent conversation.

1. Install in Codex

1.1 Check for a bundled project skill

Your project may already contain `.codex/skills/motorxp-engineering`. This folder is installed on your computer together with the MATLAB version of **MotorXP-AFM/PM**. Check that it contains `SKILL.md`, then try the skill as described in section 1.4.

Codex folder compatibility

Current Codex documentation lists `.agents/skills` for project skills and `%USERPROFILE%\agents\sills` for personal skills. The new-installation commands below use these locations. The original guide used `$CODEX_HOME/skills` (normally `%USERPROFILE%\codex\sills`) for personal installation.

If the bundled `.codex` skill is detected, no copy is needed. If it is not detected, copy the complete `motorxp-engineering` folder, including any supporting files, into `.agents/skills` in the same project, then start a new session.

1.2 Project Installation (this project only)

Open PowerShell. Replace both highlighted paths below. The `Set-Location` command moves into your project folder before creating the skill directory.

```
$ErrorActionPreference = 'Stop'
# REPLACE: full path to YOUR project folder
$projectPath = 'C:\YOUR_PROJECT_FOLDER'

# Move into your project BEFORE installing
Set-Location -LiteralPath $projectPath

# REPLACE: full path to YOUR downloaded skill file
$source = 'C:\YOUR_SKILL_FILES\MotorXP_Codex_SKILL.md'

$skillDir = Join-Path (Get-Location) '.agents\sills\motorxp-engineering'
New-Item -ItemType Directory -Path $skillDir -Force | Out-Null
Copy-Item -LiteralPath $source -Destination (Join-Path $skillDir 'SKILL.md') -Force
Test-Path -LiteralPath (Join-Path $skillDir 'SKILL.md')
```

Expected final result: True. Installed file: `YOUR_PROJECT_FOLDER\agents\sills\motorxp-engineering\SKILL.md`.

1.3 Personal installation (all projects)

Run from any folder in PowerShell. Replace the highlighted source-file path. `$env:USERPROFILE` automatically selects your Windows user folder; leave it unchanged.

```
$ErrorActionPreference = 'Stop'
# REPLACE: full path to YOUR downloaded skill file
$source = 'C:\YOUR_SKILL_FILES\MotorXP_Codex_SKILL.md'

$skillDir = Join-Path $env:USERPROFILE '.agents\sills\motorxp-engineering'
New-Item -ItemType Directory -Path $skillDir -Force | Out-Null
Copy-Item -LiteralPath $source -Destination (Join-Path $skillDir 'SKILL.md') -Force
Test-Path -LiteralPath (Join-Path $skillDir 'SKILL.md')
```

Expected final result: True. Installed file: `%USERPROFILE%\agents\sills\motorxp-engineering\SKILL.md`. Available across projects for this user on this computer.

Reference: [Official Codex skills documentation](#).

1.4 Use the skill in Codex

A. Codex CLI

Open PowerShell, replace the highlighted project path, and launch Codex:

```
# REPLACE: full path to YOUR project folder
Set-Location -LiteralPath 'C:\YOUR_PROJECT_FOLDER'
codex
```

Inside Codex, run `/skills` or type `$` to find `motorxp-engineering`. Then send:

Use `$motorxp-engineering` to review a MotorXP optimization design contract. Ask for missing inputs first. Do not run MATLAB or FEA.

B. Codex app

1. Open the Codex app and select or add your MotorXP project folder.
2. Start a new local task in that project. For a project installation, use the folder containing the installed skill.
3. Send the prompt below in the task conversation.

Use the `motorxp-engineering` skill to review a MotorXP optimization design contract. Ask for missing inputs first. Do not run MATLAB or FEA.

Check that Codex finds and uses the installed skill. If it cannot find it, verify its location and restart Codex. The CLI and app must run on the same computer and use the same user account to share the personal installation.

Verify the behavior

Run the quick acceptance test. The agent should request missing inputs and avoid starting MATLAB or FEA.

Updating

Copy the updated source file to the same installed `SKILL.md` location, then start a new task. The installation command replaces the existing copy.

Uninstall

Remove only `motorxp-engineering` from the skills directory you used. Keep the parent `.agents` or `.codex` folder and other skills.

Reference: [Official Codex skills documentation](#).

2. Install in Claude Code

2.1 Check for a bundled project skill

MotorXP-AFM/PM may already include the skill

Your project may already contain `.claude/skills/motorxp-engineering`. This folder is installed on your computer together with the MATLAB version of **MotorXP-AFM/PM**.

If it contains `SKILL.md`, skip “Copy the skill” and go directly to section 2.4 to try it in Claude Code.

2.2 Copy the skill: Project Installation (this project only)

Replace both highlighted paths. Set-Location moves PowerShell into your project before installation.

```
$ErrorActionPreference = 'Stop'
# REPLACE: full path to YOUR project folder
$projectPath = 'C:\YOUR_PROJECT_FOLDER'

# Move into your project BEFORE installing
Set-Location -LiteralPath $projectPath

# REPLACE: full path to YOUR downloaded skill file
$source = 'C:\YOUR_SKILL_FILES\MotorXP_Claude_Code_SKILL.md'

$skillDir = Join-Path (Get-Location) '.claude\skills\motorxp-engineering'
New-Item -ItemType Directory -Path $skillDir -Force | Out-Null
Copy-Item -LiteralPath $source -Destination (Join-Path $skillDir 'SKILL.md') -Force
Test-Path -LiteralPath (Join-Path $skillDir 'SKILL.md')
```

Expected final result: True. Installed file: `YOUR_PROJECT_FOLDER\.claude\skills\motorxp-engineering\SKILL.md`.

2.3 Copy the skill: Personal installation (all projects)

Run from any folder. Replace the highlighted source-file path. Leave `$env:USERPROFILE` unchanged; PowerShell fills in your Windows user folder.

```
$ErrorActionPreference = 'Stop'
# REPLACE: full path to YOUR downloaded skill file
$source = 'C:\YOUR_SKILL_FILES\MotorXP_Claude_Code_SKILL.md'

$skillDir = Join-Path $env:USERPROFILE '.claude\skills\motorxp-engineering'
New-Item -ItemType Directory -Path $skillDir -Force | Out-Null
Copy-Item -LiteralPath $source -Destination (Join-Path $skillDir 'SKILL.md') -Force
Test-Path -LiteralPath (Join-Path $skillDir 'SKILL.md')
```

Expected final result: True. Installed file: `%USERPROFILE%.claude\skills\motorxp-engineering\SKILL.md`.

Choose one installation scope. Both work with the CLI and local Code sessions in Claude Desktop.

Reference: [Official Claude Code skills documentation](#).

2.4 Use the skill in Claude Code

A. Claude Desktop (no CLI required)

1. Open Claude Desktop, go to the **Code** tab, and choose a **local** session.
2. Open your MotorXP project folder. For a project installation, select the folder containing `.claude/skills`.
3. Start a new Code session. If you created the top-level skills directory while the app was running and the skill is missing, fully quit and reopen the app.
4. Type `/` to find `motorxp-engineering`, or send the prompt below.

```
/motorxp-engineering Review a MotorXP optimization design contract. Ask for missing inputs first. Do not run MATLAB or FEA.
```

Use the Code tab for this local installation

Cowork and cloud sessions use account-enabled skills instead of your local personal skills folder. Configure skills for those environments separately through Customize. Check discovery in the Code session using `/motorxp-engineering`.

B. Claude Code CLI

Open PowerShell. Replace the project path and launch Claude Code:

```
# REPLACE: full path to YOUR project folder
Set-Location -LiteralPath 'C:\YOUR_PROJECT_FOLDER'
claude
```

Inside Claude Code, send the same `/motorxp-engineering` prompt shown above. You can also ask a relevant MotorXP question in natural language. Restart if the skill is missing after installation.

Verify, update, or uninstall

Run the quick acceptance test. To update, copy the new source file over the installed `SKILL.md` and start a new session. To uninstall, remove only the `motorxp-engineering` folder; keep `.claude` and other skills.

References: [Claude Code skills](#) · [Claude Desktop documentation](#).

3. Quick acceptance test

After installation, run one safe test without MATLAB or FEA. Send this prompt inside Codex or Claude Code:

Use the motorxp-engineering skill. Prepare a design contract for a new MotorXP optimization. I have not supplied the base design, operating point, variables, or objectives. Do not create files and do not run MATLAB.

Expected behavior

- The agent does not invent an operating point, geometry, or API parameter names.
- The agent requests the base design, mode, targets, variables, objectives, constraints, result contract, and permission to run.
- The agent distinguishes the MotorXP-PM and MotorXP-AFM APIs and proposes checking parameter names against `manual.pdf` and the installed JSON maps.
- The agent does not disclose confidential information from neighboring projects.

Project-data security

Important

The skill includes disclosure-minimization rules, but users must still control the agent's access to project folders and review shared documents before publication.

Recommended first working request

Use the motorxp-engineering skill to inspect the installed manual, the closest shipped example, and my base design. First produce a design contract and a list of proposed files. Do not create files or start FEA until I approve the formulation.

Ready

After a successful test, the skill can support scenario preparation, evaluator and runner reviews, MAT-file analysis, Pareto visualization, safe resume, and export of selected designs.