

SCADA System

User Manual

Version 1.0 — April 2026

Table of contents

- About this document
- Base URL
- Authentication (JWT)
- Quick start with Postman
- Common conventions
- Health check
- Users, roles and permissions
- User profile
- Devices
- Schemas and pipes
- PLCs and protocols
- Sequences, recipes and events
- Production lines and batches
- Pulse modules
- I/O points (PLC provisioning)
- Accidents and monitoring
- Math functions
- Hardware configuration and TIA Portal
- PLC export
- Project import / export
- License
- System administration
- WebSocket API
- AI Assistant API (FastAPI)
- Appendix: Resource index
- Related documents

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Audience: integrators, automation engineers, backend/frontend developers

About this document

This API Reference describes how to call the OBJECTSCADA backend without the web UI — from Postman, curl, Python scripts, MES/ERP integrations, or custom clients.

For operator workflows and screen-by-screen instructions see the User Manual (docs/USER_MANUAL_*.md). This document focuses on HTTP REST endpoints, WebSocket channels, and the AI assistant API.

Base URL

Environment	Base URL
Local development (Docker)	http://localhost:8000
Production	https://

All REST paths below are relative to the base URL. Example:

```
GET http://localhost:8000/api/schemas/
```

Authentication (JWT)

Most endpoints require a JSON Web Token in the header:

```
Authorization: Bearer <access_token>
Content-Type: application/json
```

Obtain tokens

Method	Endpoint	Description	Request body
POST	/api/auth/login	Sign in	{"login": "admin", "password": "admin"}
POST	/api/auth/register	Register	{"email": "user@example.com", "password": "...", "name": "John Doe"}
GET	/api/auth/me	Current user profile	—
POST	/api/auth/token/refresh/	Refresh JWT access token	{"refresh": ""}

Login request (email or username in login field):

```
{
  "login": "admin",
  "password": "admin"
}
```

Login response:

```
{
  "access": "eyJhbGciOi...",
  "refresh": "eyJhbGciOi...",
  "user": {
    "id": 1,
    "username": "admin",
    "email": "admin@example.com",
    "roles": []
  }
}
```

Refresh access token

When the access token expires, call POST /api/auth/token/refresh/ with the refresh token. Superuser tokens use standard JWT lifetimes; regular users may receive long-lived tokens.

Quick start with Postman

- Create an environment variable `baseUrl = http://localhost:8000`
- POST `{{baseUrl}}/api/auth/login` with body `{"login":"admin","password":"admin"}`
- In the Tests tab, save access from JSON to `accessToken`
- Set collection auth: Bearer Token = `{{accessToken}}`
- Call GET `{{baseUrl}}/api/schemas/` — you should receive a JSON list

curl example

```
# Login
TOKEN=$(curl -s -X POST http://localhost:8000/api/auth/login \
  -H "Content-Type: application/json" \
  -d '{"login":"admin","password":"admin"}' | jq -r .access)

# List schemas
curl -s http://localhost:8000/api/schemas/ \
  -H "Authorization: Bearer $TOKEN" | jq .
```

Common conventions

Pagination and filtering

List endpoints support Django REST framework query parameters:

Parameter	Example	Description
search	?search=motor	Full-text search (where supported)
ordering	?ordering=name	Sort field (prefix - for descending)
page	?page=2	Page number (if pagination enabled)

Standard error format

```
{
  "message": "Human-readable message in English",
  "code": "validation_error",
  "errors": {
    "field_name": ["Error detail"]
  }
}
```

Common HTTP status codes: 400 validation, 401 unauthenticated, 403 forbidden, 404 not found, 409 conflict, 500 server error.

Device control pattern

Controllable device types expose the same custom actions:

Method	Endpoint pattern	Body example
POST	/api/{device-type}/{id}/set_mode/	{{"mode": "manual"}}
POST	/api/{device-type}/{id}/setmanualvalue/	{{"value": 50.0}}
POST	/api/{device-type}/{id}/set_simulation/	{{"simulation": true}}
POST	/api/{device-type}/{id}/set_interlock/	{{"interlock": true}}
POST	/api/{device-type}/{id}/update_status/	{{...}}

Supported {device-type} values: analog-inputs, analog-outputs, digital-inputs, digital-outputs, motors, valves, pid-controllers, counters, timers, variable-speed-drives, coordination-signals, tanks.

Health check

Method	Endpoint	Description	Body
GET	/api/health	Docker health check (no auth)	—

Users, roles and permissions

Method	Endpoint	Description	Body
GET	/api/users/	List users	—
POST	/api/users/	Create users	{...}
GET	/api/users/{id}/	Retrieve users	—
PUT	/api/users/{id}/	Replace users	{...}
PATCH	/api/users/{id}/	Partial update users	{...}
DELET	/api/users/{id}/	Delete users	—
GET	/api/users/{id}/roles/	Roles	—
POST	/api/users/{id}/roles/	Roles	—
DELET	/api/users/{id}/roles/	Roles	—
GET	/api/users/me/	Me	—
POST	/api/users/{id}/set-password/	Set password	—
POST	/api/users/{id}/upload-avatar/	Upload avatar	—
GET	/api/roles/	List roles	—
POST	/api/roles/	Create roles	{...}
GET	/api/roles/{id}/	Retrieve roles	—
PUT	/api/roles/{id}/	Replace roles	{...}
PATCH	/api/roles/{id}/	Partial update roles	{...}
DELET	/api/roles/{id}/	Delete roles	—
GET	/api/roles/{id}/permissions/	Permissions	—
GET	/api/roles/{id}/users/	Users	—
GET	/api/permissions/	List permissions	—
POST	/api/permissions/	Create permissions	{...}
GET	/api/permissions/{id}/	Retrieve permissions	—
PUT	/api/permissions/{id}/	Replace permissions	{...}
PATCH	/api/permissions/{id}/	Partial update permissions	{...}
DELET	/api/permissions/{id}/	Delete permissions	—
GET	/api/permissions/categories/	Categories	—
GET	/api/permissions/actions/	Actions	—
GET	/api/user-roles/	List user roles	—
POST	/api/user-roles/	Create user roles	{...}
GET	/api/user-roles/{id}/	Retrieve user roles	—
PUT	/api/user-roles/{id}/	Replace user roles	{...}
PATCH	/api/user-roles/{id}/	Partial update user roles	{...}
DELET	/api/user-roles/{id}/	Delete user roles	—
GET	/api/user-activity-logs/	List user activity logs	—
POST	/api/user-activity-logs/	Create user activity logs	{...}
GET	/api/user-activity-logs/{id}/	Retrieve user activity logs	—

Method	Endpoint	Description	Body
PUT	/api/user-activity-logs/{id}/	Replace user activity logs	{...}
PATCH	/api/user-activity-logs/{id}/	Partial update user activity logs	{...}
DELET	/api/user-activity-logs/{id}/	Delete user activity logs	—
GET	/api/user-activity-logs/recent/	Recent	—
GET	/api/user-activity-logs/statistics/	Statistics	—
DELET	/api/user-activity-logs/clear/	Clear	—
GET	/api/ip-access/allowed-ips/	List ip access/allowed ips	—
POST	/api/ip-access/allowed-ips/	Create ip access/allowed ips	{...}
GET	/api/ip-access/allowed-ips/{id}/	Retrieve ip access/allowed ips	—
PUT	/api/ip-access/allowed-ips/{id}/	Replace ip access/allowed ips	{...}
PATCH	/api/ip-access/allowed-ips/{id}/	Partial update ip access/allowed ips	{...}
DELET	/api/ip-access/allowed-ips/{id}/	Delete ip access/allowed ips	—
GET	/api/ip-access/allowed-ips/my-ips/	My ips	—
GET	/api/ip-access/allowed-ips/by-type/	By type	—
POST	/api/ip-access/allowed-ips/{id}/toggle-active/	Toggle active	—
GET	/api/ip-access/allowed-ips/users/	Users	—
POST	/api/ip-access/allowed-ips/check-ip/	Check ip	—
GET	/api/ip-access/logs/	List ip access/logs	—
POST	/api/ip-access/logs/	Create ip access/logs	{...}
GET	/api/ip-access/logs/{id}/	Retrieve ip access/logs	—
PUT	/api/ip-access/logs/{id}/	Replace ip access/logs	{...}
PATCH	/api/ip-access/logs/{id}/	Partial update ip access/logs	{...}
DELET	/api/ip-access/logs/{id}/	Delete ip access/logs	—
GET	/api/ip-access/logs/failed-attempts/	Failed attempts	—
GET	/api/ip-access/logs/statistics/	Statistics	—

User profile

Method	Endpoint	Description	Body
POST	/api/user/language/	user language	—
POST	/api/user/dark-mode/	user dark mode	—
POST	/api/user/recent-sensors/	user recent sensors	—
GET	/api/user/recent-sensors/data/	fetch recent sensors data	—

Devices

Method	Endpoint	Description	Body
GET	/api/analog-inputs/	List analog inputs	—
POST	/api/analog-inputs/	Create analog inputs	{...}
GET	/api/analog-inputs/{id}/	Retrieve analog inputs	—
PUT	/api/analog-inputs/{id}/	Replace analog inputs	{...}
PATCH	/api/analog-inputs/{id}/	Partial update analog inputs	{...}
DELET	/api/analog-inputs/{id}/	Delete analog inputs	—
GET	/api/analog-outputs/	List analog outputs	—
POST	/api/analog-outputs/	Create analog outputs	{...}
GET	/api/analog-outputs/{id}/	Retrieve analog outputs	—
PUT	/api/analog-outputs/{id}/	Replace analog outputs	{...}
PATCH	/api/analog-outputs/{id}/	Partial update analog outputs	{...}
DELET	/api/analog-outputs/{id}/	Delete analog outputs	—
GET	/api/digital-inputs/	List digital inputs	—
POST	/api/digital-inputs/	Create digital inputs	{...}
GET	/api/digital-inputs/{id}/	Retrieve digital inputs	—
PUT	/api/digital-inputs/{id}/	Replace digital inputs	{...}
PATCH	/api/digital-inputs/{id}/	Partial update digital inputs	{...}
DELET	/api/digital-inputs/{id}/	Delete digital inputs	—
GET	/api/digital-outputs/	List digital outputs	—
POST	/api/digital-outputs/	Create digital outputs	{...}
GET	/api/digital-outputs/{id}/	Retrieve digital outputs	—
PUT	/api/digital-outputs/{id}/	Replace digital outputs	{...}
PATCH	/api/digital-outputs/{id}/	Partial update digital outputs	{...}
DELET	/api/digital-outputs/{id}/	Delete digital outputs	—
GET	/api/coordination-signals/	List coordination signals	—
POST	/api/coordination-signals/	Create coordination signals	{...}
GET	/api/coordination-signals/{id}/	Retrieve coordination signals	—
PUT	/api/coordination-signals/{id}/	Replace coordination signals	{...}
PATCH	/api/coordination-signals/{id}/	Partial update coordination signals	{...}
DELET	/api/coordination-signals/{id}/	Delete coordination signals	—
GET	/api/motors/	List motors	—
POST	/api/motors/	Create motors	{...}
GET	/api/motors/{id}/	Retrieve motors	—
PUT	/api/motors/{id}/	Replace motors	{...}
PATCH	/api/motors/{id}/	Partial update motors	{...}
DELET	/api/motors/{id}/	Delete motors	—
GET	/api/valves/	List valves	—

Method	Endpoint	Description	Body
POST	/api/valves/	Create valves	{...}
GET	/api/valves/{id}/	Retrieve valves	—
PUT	/api/valves/{id}/	Replace valves	{...}
PATCH	/api/valves/{id}/	Partial update valves	{...}
DELET	/api/valves/{id}/	Delete valves	—
POST	/api/valves/{id}/activate-upper-seat/	Activate upper seat	—
POST	/api/valves/{id}/activate-lower-seat/	Activate lower seat	—
POST	/api/valves/{id}/deactivate-seats/	Deactivate seats	—
GET	/api/tanks/	List tanks	—
POST	/api/tanks/	Create tanks	{...}
GET	/api/tanks/{id}/	Retrieve tanks	—
PUT	/api/tanks/{id}/	Replace tanks	{...}
PATCH	/api/tanks/{id}/	Partial update tanks	{...}
DELET	/api/tanks/{id}/	Delete tanks	—
POST	/api/tanks/{id}/calculate-volume/	Calculate volume	—
POST	/api/tanks/{id}/import_strapping_table/	Import strapping table	—
GET	/api/tanks/{id}/export_strapping_table/	Export strapping table	—
GET	/api/tanks/{id}/volume-at-level/	Volume at level	—
GET	/api/tank-sections/	List tank sections	—
POST	/api/tank-sections/	Create tank sections	{...}
GET	/api/tank-sections/{id}/	Retrieve tank sections	—
PUT	/api/tank-sections/{id}/	Replace tank sections	{...}
PATCH	/api/tank-sections/{id}/	Partial update tank sections	{...}
DELET	/api/tank-sections/{id}/	Delete tank sections	—
GET	/api/tank-strapping-entries/	List tank strapping entries	—
POST	/api/tank-strapping-entries/	Create tank strapping entries	{...}
GET	/api/tank-strapping-entries/{id}/	Retrieve tank strapping entries	—
PUT	/api/tank-strapping-entries/{id}/	Replace tank strapping entries	{...}
PATCH	/api/tank-strapping-entries/{id}/	Partial update tank strapping entries	{...}
DELET	/api/tank-strapping-entries/{id}/	Delete tank strapping entries	—
GET	/api/pid-controllers/	List pid controllers	—
POST	/api/pid-controllers/	Create pid controllers	{...}
GET	/api/pid-controllers/{id}/	Retrieve pid controllers	—
PUT	/api/pid-controllers/{id}/	Replace pid controllers	{...}
PATCH	/api/pid-controllers/{id}/	Partial update pid controllers	{...}
DELET	/api/pid-controllers/{id}/	Delete pid controllers	—
POST	/api/pid-controllers/{id}/calculate-output/	Calculate output	—
POST	/api/pid-controllers/{id}/set-setpoint/	Set setpoint	—
POST	/api/pid-controllers/{id}/set-pid-parameters/	Set pid parameters	—
POST	/api/pid-controllers/calculate-all-outputs/	Calculate all outputs	—

Method	Endpoint	Description	Body
GET	/api/counters/	List counters	—
POST	/api/counters/	Create counters	{...}
GET	/api/counters/{id}/	Retrieve counters	—
PUT	/api/counters/{id}/	Replace counters	{...}
PATCH	/api/counters/{id}/	Partial update counters	{...}
DELET	/api/counters/{id}/	Delete counters	—
GET	/api/timers/	List timers	—
POST	/api/timers/	Create timers	{...}
GET	/api/timers/{id}/	Retrieve timers	—
PUT	/api/timers/{id}/	Replace timers	{...}
PATCH	/api/timers/{id}/	Partial update timers	{...}
DELET	/api/timers/{id}/	Delete timers	—
GET	/api/variable-speed-drives/	List variable speed drives	—
POST	/api/variable-speed-drives/	Create variable speed drives	{...}
GET	/api/variable-speed-drives/{id}/	Retrieve variable speed drives	—
PUT	/api/variable-speed-drives/{id}/	Replace variable speed drives	{...}
PATCH	/api/variable-speed-drives/{id}/	Partial update variable speed drives	{...}
DELET	/api/variable-speed-drives/{id}/	Delete variable speed drives	—
POST	/api/devices/all_devices/	AllDevicesView	—
POST	/api/devices/activation_places/	DeviceActivationPlacesView	—
GET	/api/devices/configuration_requirements/	get device configuration requirements	—
POST	/api/devices/batch_websocket_update/	batch websocket update	—

Schemas and pipes

Method	Endpoint	Description	Body
GET	/api/schemas/	List schemas	—
POST	/api/schemas/	Create schemas	{...}
GET	/api/schemas/{id}/	Retrieve schemas	—
PUT	/api/schemas/{id}/	Replace schemas	{...}
PATCH	/api/schemas/{id}/	Partial update schemas	{...}
DELET	/api/schemas/{id}/	Delete schemas	—
POST	/api/schemas/{id}/add-device/	Add device	—
POST	/api/schemas/{id}/add-math-function/	Add math function	—
POST	/api/schemas/{id}/add-image/	Add image	—
POST	/api/schemas/{id}/add-text/	Add text	—
POST	/api/schemas/{id}/add-valve/	Add valve	—
POST	/api/schemas/{id}/add-motor/	Add motor	—
POST	/api/schemas/{id}/add-analog-input/	Add analog input	—
POST	/api/schemas/{id}/add-analog-output/	Add analog output	—
POST	/api/schemas/{id}/add-digital-input/	Add digital input	—
POST	/api/schemas/{id}/add-digital-output/	Add digital output	—
POST	/api/schemas/{id}/add-pid-controller/	Add pid controller	—
POST	/api/schemas/{id}/add-counter/	Add counter	—
POST	/api/schemas/{id}/add-timer/	Add timer	—
POST	/api/schemas/{id}/add-variable-speed-drive/	Add variable speed drive	—
PUT	/api/schemas/{id}/devices/(?P[^\.]+)/	Devices/(?p[^\.]++)	—
PATCH	/api/schemas/{id}/devices/(?P[^\.]+)/	Devices/(?p[^\.]++)	—
POST	/api/schemas/{id}/devices/(?P[^\.]+)/rebind/	Devices/(?p[^\.]++)/rebind	—
DELET	/api/schemas/{id}/remove-device/	Remove device	—
POST	/api/schemas/{id}/add-sequence/	Add sequence	—
POST	/api/schemas/{id}/remove-sequence/	Remove sequence	—
POST	/api/schemas/{id}/add-production-line/	Add production line	—
POST	/api/schemas/{id}/remove-production-line/	Remove production line	—
GET	/api/schemas/{id}/available-production-lines/	Available production lines	—
POST	/api/schemas/{id}/add-timer/	Add timer	—
POST	/api/schemas/{id}/remove-timer/	Remove timer	—
GET	/api/schemas/{id}/available-timers/	Available timers	—
PATCH	/api/schemas/{id}/update_positions/	Update positions	—
GET	/api/schemas/{id}/available-sequences/	Available sequences	—
GET	/api/schemas/{id}/user-access/	User access	—
POST	/api/schemas/{id}/user-access/	User access	—
DELET	/api/schemas/{id}/user-access/	User access	—

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Method	Endpoint	Description	Body
POST	/api/schemas/{id}/bulk_add_schema_devices/	Bulk add schema devices	—
GET	/api/schemas/{id}/available-options/	Available options	—
POST	/api/schemas/{id}/add-option/	Add option	—
POST	/api/schemas/{id}/remove-option/	Remove option	—
GET	/api/schemas/{id}/available-recipe-variables/	Available recipe variables	—
POST	/api/schemas/{id}/add-recipe-variable/	Add recipe variable	—
POST	/api/schemas/{id}/remove-recipe-variable/	Remove recipe variable	—
GET	/api/schema-sequences/	List schema sequences	—
POST	/api/schema-sequences/	Create schema sequences	{...}
GET	/api/schema-sequences/{id}/	Retrieve schema sequences	—
PUT	/api/schema-sequences/{id}/	Replace schema sequences	{...}
PATCH	/api/schema-sequences/{id}/	Partial update schema sequences	{...}
DELET	/api/schema-sequences/{id}/	Delete schema sequences	—
POST	/api/schema-sequences/{id}/update-position/	Update position	—
POST	/api/schema-sequences/{id}/update-size/	Update size	—
POST	/api/schema-sequences/{id}/update-display-settings/	Update display settings	—
POST	/api/schema-sequences/{id}/rebind/	Rebind	—
GET	/api/schema-options/	List schema options	—
POST	/api/schema-options/	Create schema options	{...}
GET	/api/schema-options/{id}/	Retrieve schema options	—
PUT	/api/schema-options/{id}/	Replace schema options	{...}
PATCH	/api/schema-options/{id}/	Partial update schema options	{...}
DELET	/api/schema-options/{id}/	Delete schema options	—
POST	/api/schema-options/{id}/update-position/	Update position	—
POST	/api/schema-options/{id}/trigger/	Trigger	—
POST	/api/schema-options/{id}/reset/	Reset	—
POST	/api/schema-options/{id}/rebind/	Rebind	—
GET	/api/schema-production-lines/	List schema production lines	—
POST	/api/schema-production-lines/	Create schema production lines	{...}
GET	/api/schema-production-lines/{id}/	Retrieve schema production lines	—
PUT	/api/schema-production-lines/{id}/	Replace schema production lines	{...}
PATCH	/api/schema-production-lines/{id}/	Partial update schema production lines	{...}
DELET	/api/schema-production-lines/{id}/	Delete schema production lines	—
POST	/api/schema-production-lines/{id}/update-position/	Update position	—
POST	/api/schema-production-lines/{id}/update-size/	Update size	—
POST	/api/schema-production-lines/{id}/update-display-settings/	Update display settings	—
POST	/api/schema-production-lines/{id}/rebind/	Rebind	—
GET	/api/schema-timers/	List schema timers	—
POST	/api/schema-timers/	Create schema timers	{...}
GET	/api/schema-timers/{id}/	Retrieve schema timers	—

Method	Endpoint	Description	Body
PUT	/api/schema-timers/{id}/	Replace schema timers	{...}
PATCH	/api/schema-timers/{id}/	Partial update schema timers	{...}
DELET	/api/schema-timers/{id}/	Delete schema timers	—
POST	/api/schema-timers/{id}/rebind/	Rebind	—
GET	/api/schema-recipe-variables/	List schema recipe variables	—
POST	/api/schema-recipe-variables/	Create schema recipe variables	{...}
GET	/api/schema-recipe-variables/{id}/	Retrieve schema recipe variables	—
PUT	/api/schema-recipe-variables/{id}/	Replace schema recipe variables	{...}
PATCH	/api/schema-recipe-variables/{id}/	Partial update schema recipe variables	{...}
DELET	/api/schema-recipe-variables/{id}/	Delete schema recipe variables	—
POST	/api/schema-recipe-variables/{id}/update-position/	Update position	—
POST	/api/schema-recipe-variables/{id}/rebind/	Rebind	—
GET	/api/pipes/	List pipes	—
POST	/api/pipes/	Create pipes	{...}
GET	/api/pipes/{id}/	Retrieve pipes	—
PUT	/api/pipes/{id}/	Replace pipes	{...}
PATCH	/api/pipes/{id}/	Partial update pipes	{...}
DELET	/api/pipes/{id}/	Delete pipes	—
POST	/api/pipes/{id}/trigger_websocket_update/	Trigger websocket update	—
GET	/api/graphs/	List graphs	—
POST	/api/graphs/	Create graphs	{...}
GET	/api/graphs/{id}/	Retrieve graphs	—
PUT	/api/graphs/{id}/	Replace graphs	{...}
PATCH	/api/graphs/{id}/	Partial update graphs	{...}
DELET	/api/graphs/{id}/	Delete graphs	—
GET	/api/graphs/{id}/data/	Data	—
GET	/api/data-points/	List data points	—
POST	/api/data-points/	Create data points	{...}
GET	/api/data-points/{id}/	Retrieve data points	—
PUT	/api/data-points/{id}/	Replace data points	{...}
PATCH	/api/data-points/{id}/	Partial update data points	{...}
DELET	/api/data-points/{id}/	Delete data points	—
DELET	/api/data-points/delete-all/	Delete all	—
GET	/api/data-points/graph/	Graph	—
GET	/api/data-points/available-parameters/	Available parameters	—
GET	/api/data-points/timescale-status/	Timescale status	—
GET	/api/device-groups/	List device groups	—
POST	/api/device-groups/	Create device groups	{...}
GET	/api/device-groups/{id}/	Retrieve device groups	—
PUT	/api/device-groups/{id}/	Replace device groups	{...}

Method	Endpoint	Description	Body
PATCH	/api/device-groups/{id}/	Partial update device groups	{...}
DELET	/api/device-groups/{id}/	Delete device groups	—
GET	/api/graphical-statuses/	List graphical statuses	—
POST	/api/graphical-statuses/	Create graphical statuses	{...}
GET	/api/graphical-statuses/{id}/	Retrieve graphical statuses	—
PUT	/api/graphical-statuses/{id}/	Replace graphical statuses	{...}
PATCH	/api/graphical-statuses/{id}/	Partial update graphical statuses	{...}
DELET	/api/graphical-statuses/{id}/	Delete graphical statuses	—
POST	/api/graphical-statuses/upload-icon/	Upload icon	—
GET	/api/graphical-statuses/list-icons/	List icons	—

PLCs and protocols

Method	Endpoint	Description	Body
GET	/api/plcs/	List plcs	—
POST	/api/plcs/	Create plcs	{...}
GET	/api/plcs/{id}/	Retrieve plcs	—
PUT	/api/plcs/{id}/	Replace plcs	{...}
PATCH	/api/plcs/{id}/	Partial update plcs	{...}
DELETE	/api/plcs/{id}/	Delete plcs	—
GET	/api/plcs/{id}/status/	Status	—
POST	/api/plcs/{id}/set-run-mode/	Set run mode	—
GET	/api/plcs/all-status/	All status	—
GET	/api/protocols/	List protocols	—
POST	/api/protocols/	Create protocols	{...}
GET	/api/protocols/{id}/	Retrieve protocols	—
PUT	/api/protocols/{id}/	Replace protocols	{...}
PATCH	/api/protocols/{id}/	Partial update protocols	{...}
DELETE	/api/protocols/{id}/	Delete protocols	—
GET	/api/plc-protocols/	List plc protocols	—
POST	/api/plc-protocols/	Create plc protocols	{...}
GET	/api/plc-protocols/{id}/	Retrieve plc protocols	—
PUT	/api/plc-protocols/{id}/	Replace plc protocols	{...}
PATCH	/api/plc-protocols/{id}/	Partial update plc protocols	{...}
DELETE	/api/plc-protocols/{id}/	Delete plc protocols	—
POST	/api/plc/simulation/run/	run plc simulation	—
GET	/api/plc/simulation/status/	plc simulation status	—
POST	/api/plc/service/start/	start plc service	—
POST	/api/plc/service/stop/	stop plc service	—

Sequences, recipes and events

Method	Endpoint	Description	Body
GET	/api/recipes/	List recipes	—
POST	/api/recipes/	Create recipes	{...}
GET	/api/recipes/{id}/	Retrieve recipes	—
PUT	/api/recipes/{id}/	Replace recipes	{...}
PATCH	/api/recipes/{id}/	Partial update recipes	{...}
DELET	/api/recipes/{id}/	Delete recipes	—
POST	/api/recipes/{id}/set-steps-order/	Set steps order	—
GET	/api/recipes/{id}/preview/	Preview	—
GET	/api/recipes/{id}/preview/	Preview	—
POST	/api/recipes/{id}/set-step-transitions/	Set step transitions	—
POST	/api/recipes/{id}/set-all-transitions/	Set all transitions	—
GET	/api/recipes/active/	Active	—
POST	/api/recipes/{id}/duplicate/	Duplicate	—
GET	/api/sequences/	List sequences	—
POST	/api/sequences/	Create sequences	{...}
GET	/api/sequences/{id}/	Retrieve sequences	—
PUT	/api/sequences/{id}/	Replace sequences	{...}
PATCH	/api/sequences/{id}/	Partial update sequences	{...}
DELET	/api/sequences/{id}/	Delete sequences	—
GET	/api/sequences/{id}/transition-conditions/	Transition conditions	—
GET	/api/sequences/{id}/step-events/	Step events	—
GET	/api/sequences/{id}/detailed-status/	Detailed status	—
GET	/api/sequences/{id}/status/	Status	—
POST	/api/sequences/{id}/condition-setpoint-override/	Condition setpoint override	—
POST	/api/sequences/{id}/check-transitions/	Check transitions	—
POST	/api/sequences/{id}/set-active-step/	Set active step	—
POST	/api/sequences/{id}/trigger_websocket_update/	Trigger websocket update	—
POST	/api/sequences/{id}/execute-step/	Execute step	—
POST	/api/sequences/{id}/toggle-active/	Toggle active	—
GET	/api/sequences/{id}/steps/	Steps	—
POST	/api/sequences/{id}/add-devices/	Add devices	—
GET	/api/sequences/{id}/available-devices/	Available devices	—
POST	/api/sequences/{id}/select-production-recipe/	Select production recipe	—
GET	/api/sequences/{id}/active-production-recipe/	Active production recipe	—
PATCH	/api/sequences/{id}/active-production-recipe/	Active production recipe	—
POST	/api/sequences/{id}/start/	Start	—
POST	/api/sequences/{id}/stop/	Stop	—

Method	Endpoint	Description	Body
POST	/api/sequences/{id}/pause/	Pause	—
POST	/api/sequences/{id}/resume/	Resume	—
POST	/api/sequences/{id}/next-step/	Next step	—
POST	/api/sequences/{id}/previous-step/	Previous step	—
GET	/api/sequence-steps/	List sequence steps	—
POST	/api/sequence-steps/	Create sequence steps	{...}
GET	/api/sequence-steps/{id}/	Retrieve sequence steps	—
PUT	/api/sequence-steps/{id}/	Replace sequence steps	{...}
PATCH	/api/sequence-steps/{id}/	Partial update sequence steps	{...}
DELET	/api/sequence-steps/{id}/	Delete sequence steps	—
POST	/api/sequence-steps/{id}/set-device-states/	Set device states	—
GET	/api/sequence-steps/{id}/step-events/	Step events	—
POST	/api/sequence-steps/{id}/add-transition-conditions/	Add transition conditions	—
GET	/api/sequence-steps/{id}/step-accident-events/	Step accident events	—
GET	/api/transition-conditions/	List transition conditions	—
POST	/api/transition-conditions/	Create transition conditions	{...}
GET	/api/transition-conditions/{id}/	Retrieve transition conditions	—
PUT	/api/transition-conditions/{id}/	Replace transition conditions	{...}
PATCH	/api/transition-conditions/{id}/	Partial update transition conditions	{...}
DELET	/api/transition-conditions/{id}/	Delete transition conditions	—
GET	/api/transition-conditions/content-types/	Content types	—
POST	/api/transition-conditions/{id}/simulate/	Simulate	—
POST	/api/transition-conditions/clear-simulation/	Clear simulation	—
GET	/api/transition_conditions/	List transition conditions	—
POST	/api/transition_conditions/	Create transition conditions	{...}
GET	/api/transition_conditions/{id}/	Retrieve transition conditions	—
PUT	/api/transition_conditions/{id}/	Replace transition conditions	{...}
PATCH	/api/transition_conditions/{id}/	Partial update transition conditions	{...}
DELET	/api/transition_conditions/{id}/	Delete transition conditions	—
GET	/api/transition_conditions/content-types/	Content types	—
POST	/api/transition_conditions/{id}/simulate/	Simulate	—
POST	/api/transition_conditions/clear-simulation/	Clear simulation	—
GET	/api/events/	List events	—
POST	/api/events/	Create events	{...}
GET	/api/events/{id}/	Retrieve events	—
PUT	/api/events/{id}/	Replace events	{...}
PATCH	/api/events/{id}/	Partial update events	{...}
DELET	/api/events/{id}/	Delete events	—
POST	/api/events/{id}/trigger_websocket_update/	Trigger websocket update	—
POST	/api/events/{id}/trigger/	Trigger	—

Method	Endpoint	Description	Body
POST	/api/events/{id}/check-trigger/	Check trigger	—
POST	/api/events/{id}/activate/	Activate	—
POST	/api/events/{id}/deactivate/	Deactivate	—
POST	/api/events/{id}/reset-trigger/	Reset trigger	—
GET	/api/events/active-events/	Active events	—
POST	/api/events/check-all-events/	Check all events	—
POST	/api/events/{id}/add-trigger-conditions/	Add trigger conditions	—
POST	/api/events/{id}/remove-trigger-conditions/	Remove trigger conditions	—
GET	/api/event-variables/	List event variables	—
POST	/api/event-variables/	Create event variables	{...}
GET	/api/event-variables/{id}/	Retrieve event variables	—
PUT	/api/event-variables/{id}/	Replace event variables	{...}
PATCH	/api/event-variables/{id}/	Partial update event variables	{...}
DELET	/api/event-variables/{id}/	Delete event variables	—
GET	/api/event-step-bindings/	List event step bindings	—
POST	/api/event-step-bindings/	Create event step bindings	{...}
GET	/api/event-step-bindings/{id}/	Retrieve event step bindings	—
PUT	/api/event-step-bindings/{id}/	Replace event step bindings	{...}
PATCH	/api/event-step-bindings/{id}/	Partial update event step bindings	{...}
DELET	/api/event-step-bindings/{id}/	Delete event step bindings	—
GET	/api/sequence-options/	List sequence options	—
POST	/api/sequence-options/	Create sequence options	{...}
GET	/api/sequence-options/{id}/	Retrieve sequence options	—
PUT	/api/sequence-options/{id}/	Replace sequence options	{...}
PATCH	/api/sequence-options/{id}/	Partial update sequence options	{...}
DELET	/api/sequence-options/{id}/	Delete sequence options	—
POST	/api/sequence-options/{id}/trigger/	Trigger	—
GET	/api/sequence-options/{id}/check-availability/	Check availability	—
POST	/api/sequence-options/{id}/reset/	Reset	—
GET	/api/production-recipes/	List production recipes	—
POST	/api/production-recipes/	Create production recipes	{...}
GET	/api/production-recipes/{id}/	Retrieve production recipes	—
PUT	/api/production-recipes/{id}/	Replace production recipes	{...}
PATCH	/api/production-recipes/{id}/	Partial update production recipes	{...}
DELET	/api/production-recipes/{id}/	Delete production recipes	—
POST	/api/production-recipes/{id}/set-active/	Set active	—
POST	/api/production-recipes/{id}/duplicate/	Duplicate	—
GET	/api/production-recipe-variables/	List production recipe variables	—
POST	/api/production-recipe-variables/	Create production recipe variables	{...}
GET	/api/production-recipe-variables/{id}/	Retrieve production recipe variables	—

Method	Endpoint	Description	Body
PUT	/api/production-recipe-variables/{id}/	Replace production recipe variables	{...}
PATCH	/api/production-recipe-variables/{id}/	Partial update production recipe variables	{...}
DELET	/api/production-recipe-variables/{id}/	Delete production recipe variables	—
GET	/api/measurement-units/	List measurement units	—
POST	/api/measurement-units/	Create measurement units	{...}
GET	/api/measurement-units/{id}/	Retrieve measurement units	—
PUT	/api/measurement-units/{id}/	Replace measurement units	{...}
PATCH	/api/measurement-units/{id}/	Partial update measurement units	{...}
DELET	/api/measurement-units/{id}/	Delete measurement units	—
GET	/api/production-recipe-variable-values/	List production recipe variable values	—
POST	/api/production-recipe-variable-values/	Create production recipe variable values	{...}
GET	/api/production-recipe-variable-values/{id}/	Retrieve production recipe variable values	—
PUT	/api/production-recipe-variable-values/{id}/	Replace production recipe variable values	{...}
PATCH	/api/production-recipe-variable-values/{id}/	Partial update production recipe variable values	{...}
DELET	/api/production-recipe-variable-values/{id}/	Delete production recipe variable values	—

E

Production lines and batches

Method	Endpoint	Description	Body
GET	/api/production-lines/	List production lines	—
POST	/api/production-lines/	Create production lines	{...}
GET	/api/production-lines/{id}/	Retrieve production lines	—
PUT	/api/production-lines/{id}/	Replace production lines	{...}
PATCH	/api/production-lines/{id}/	Partial update production lines	{...}
DELET	/api/production-lines/{id}/	Delete production lines	—
POST	/api/production-lines/{id}/create-batch/	Create batch	—
GET	/api/production-lines/{id}/batches/	Batches	—
POST	/api/production-lines/{id}/trigger_next_batch/	Trigger next batch	—
GET	/api/production-lines/{id}/stages-status/	Stages status	—
GET	/api/production-line-stages/	List production line stages	—
POST	/api/production-line-stages/	Create production line stages	{...}
GET	/api/production-line-stages/{id}/	Retrieve production line stages	—
PUT	/api/production-line-stages/{id}/	Replace production line stages	{...}
PATCH	/api/production-line-stages/{id}/	Partial update production line stages	{...}
DELET	/api/production-line-stages/{id}/	Delete production line stages	—
GET	/api/production-line-stages/{id}/queue/	Queue	—
GET	/api/batches/	List batches	—
POST	/api/batches/	Create batches	{...}
GET	/api/batches/{id}/	Retrieve batches	—
PUT	/api/batches/{id}/	Replace batches	{...}
PATCH	/api/batches/{id}/	Partial update batches	{...}
DELET	/api/batches/{id}/	Delete batches	—
POST	/api/batches/{id}/start/	Start	—
POST	/api/batches/{id}/transfer/	Transfer	—
POST	/api/batches/{id}/transfer-internal/	Transfer internal	—
POST	/api/batches/{id}/pause/	Pause	—
POST	/api/batches/{id}/resume/	Resume	—
POST	/api/batches/{id}/cancel/	Cancel	—
POST	/api/batches/{id}/fail/	Fail	—
GET	/api/batches/{id}/history/	History	—
GET	/api/batch-queue/	List batch queue	—
POST	/api/batch-queue/	Create batch queue	{...}
GET	/api/batch-queue/{id}/	Retrieve batch queue	—
PUT	/api/batch-queue/{id}/	Replace batch queue	{...}
PATCH	/api/batch-queue/{id}/	Partial update batch queue	{...}
DELET	/api/batch-queue/{id}/	Delete batch queue	—

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Method	Endpoint	Description	Body
GET	/api/batch-queue/by-stage/	By stage	—
POST	/api/batch-queue/reorder/	Reorder	—
POST	/api/batch-queue/{id}/set-priority/	Set priority	—
GET	/api/batch-stage-history/	List batch stage history	—
POST	/api/batch-stage-history/	Create batch stage history	{...}
GET	/api/batch-stage-history/{id}/	Retrieve batch stage history	—
PUT	/api/batch-stage-history/{id}/	Replace batch stage history	{...}
PATCH	/api/batch-stage-history/{id}/	Partial update batch stage history	{...}
DELET	/api/batch-stage-history/{id}/	Delete batch stage history	—

E

Pulse modules

Method	Endpoint	Description	Body
GET	/api/pulse-modules/	List pulse modules	—
POST	/api/pulse-modules/	Create pulse modules	{...}
GET	/api/pulse-modules/{id}/	Retrieve pulse modules	—
PUT	/api/pulse-modules/{id}/	Replace pulse modules	{...}
PATCH	/api/pulse-modules/{id}/	Partial update pulse modules	{...}
DELET	/api/pulse-modules/{id}/	Delete pulse modules	—
POST	/api/pulse-modules/{id}/start/	Start	—
POST	/api/pulse-modules/{id}/stop/	Stop	—
GET	/api/pulse-module-steps/	List pulse module steps	—
POST	/api/pulse-module-steps/	Create pulse module steps	{...}
GET	/api/pulse-module-steps/{id}/	Retrieve pulse module steps	—
PUT	/api/pulse-module-steps/{id}/	Replace pulse module steps	{...}
PATCH	/api/pulse-module-steps/{id}/	Partial update pulse module steps	{...}
DELET	/api/pulse-module-steps/{id}/	Delete pulse module steps	—
GET	/api/pulse-module-step-phases/	List pulse module step phases	—
POST	/api/pulse-module-step-phases/	Create pulse module step phases	{...}
GET	/api/pulse-module-step-phases/{id}/	Retrieve pulse module step phases	—
PUT	/api/pulse-module-step-phases/{id}/	Replace pulse module step phases	{...}
PATCH	/api/pulse-module-step-phases/{id}/	Partial update pulse module step phases	{...}
DELET	/api/pulse-module-step-phases/{id}/	Delete pulse module step phases	—
GET	/api/pulse-module-devices/	List pulse module devices	—
POST	/api/pulse-module-devices/	Create pulse module devices	{...}
GET	/api/pulse-module-devices/{id}/	Retrieve pulse module devices	—
PUT	/api/pulse-module-devices/{id}/	Replace pulse module devices	{...}
PATCH	/api/pulse-module-devices/{id}/	Partial update pulse module devices	{...}
DELET	/api/pulse-module-devices/{id}/	Delete pulse module devices	—

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I/O points (PLC provisioning)

Method	Endpoint	Description	Body
GET	/api/points/analog-inputs/	List points/analog inputs	—
POST	/api/points/analog-inputs/	Create points/analog inputs	{...}
GET	/api/points/analog-inputs/{id}/	Retrieve points/analog inputs	—
PUT	/api/points/analog-inputs/{id}/	Replace points/analog inputs	{...}
PATCH	/api/points/analog-inputs/{id}/	Partial update points/analog inputs	{...}
DELET	/api/points/analog-inputs/{id}/	Delete points/analog inputs	—
POST	/api/points/analog-inputs/{id}/update-value/	Update value	—
GET	/api/points/analog-outputs/	List points/analog outputs	—
POST	/api/points/analog-outputs/	Create points/analog outputs	{...}
GET	/api/points/analog-outputs/{id}/	Retrieve points/analog outputs	—
PUT	/api/points/analog-outputs/{id}/	Replace points/analog outputs	{...}
PATCH	/api/points/analog-outputs/{id}/	Partial update points/analog outputs	{...}
DELET	/api/points/analog-outputs/{id}/	Delete points/analog outputs	—
POST	/api/points/analog-outputs/{id}/update-value/	Update value	—
GET	/api/points/digital-inputs/	List points/digital inputs	—
POST	/api/points/digital-inputs/	Create points/digital inputs	{...}
GET	/api/points/digital-inputs/{id}/	Retrieve points/digital inputs	—
PUT	/api/points/digital-inputs/{id}/	Replace points/digital inputs	{...}
PATCH	/api/points/digital-inputs/{id}/	Partial update points/digital inputs	{...}
DELET	/api/points/digital-inputs/{id}/	Delete points/digital inputs	—
POST	/api/points/digital-inputs/{id}/update-value/	Update value	—
GET	/api/points/digital-outputs/	List points/digital outputs	—
POST	/api/points/digital-outputs/	Create points/digital outputs	{...}
GET	/api/points/digital-outputs/{id}/	Retrieve points/digital outputs	—
PUT	/api/points/digital-outputs/{id}/	Replace points/digital outputs	{...}
PATCH	/api/points/digital-outputs/{id}/	Partial update points/digital outputs	{...}
DELET	/api/points/digital-outputs/{id}/	Delete points/digital outputs	—
POST	/api/points/digital-outputs/{id}/update-value/	Update value	—
POST	/api/points/binding-options/	io point binding options	—

Accidents and monitoring

Method	Endpoint	Description	Body
GET	/api/accident-types/	List accident types	—
POST	/api/accident-types/	Create accident types	{...}
GET	/api/accident-types/{id}/	Retrieve accident types	—
PUT	/api/accident-types/{id}/	Replace accident types	{...}
PATCH	/api/accident-types/{id}/	Partial update accident types	{...}
DELET	/api/accident-types/{id}/	Delete accident types	—
GET	/api/accidents/	List accidents	—
POST	/api/accidents/	Create accidents	{...}
GET	/api/accidents/{id}/	Retrieve accidents	—
PUT	/api/accidents/{id}/	Replace accidents	{...}
PATCH	/api/accidents/{id}/	Partial update accidents	{...}
DELET	/api/accidents/{id}/	Delete accidents	—
POST	/api/accidents/{id}/update-status/	Update status	—
POST	/api/accidents/{id}/acknowledge/	Acknowledge	—
POST	/api/accidents/{id}/resolve/	Resolve	—
POST	/api/accidents/{id}/close/	Close	—
GET	/api/accidents/stats/	Stats	—
POST	/api/accidents/check-all-devices/	Check all devices	—
POST	/api/accidents/resolve-all/	Resolve all	—
GET	/api/accident-events/	List accident events	—
POST	/api/accident-events/	Create accident events	{...}
GET	/api/accident-events/{id}/	Retrieve accident events	—
PUT	/api/accident-events/{id}/	Replace accident events	{...}
PATCH	/api/accident-events/{id}/	Partial update accident events	{...}
DELET	/api/accident-events/{id}/	Delete accident events	—
POST	/api/accident-events/{id}/trigger/	Trigger	—
POST	/api/accident-events/{id}/activate/	Activate	—
POST	/api/accident-events/{id}/deactivate/	Deactivate	—
GET	/api/accident-events/by-sequence-step/	By sequence step	—
GET	/api/accident-events/{id}/check-triggers/	Check triggers	—
GET	/api/device-status/	List device status	—
POST	/api/device-status/	Create device status	{...}
GET	/api/device-status/{id}/	Retrieve device status	—
PUT	/api/device-status/{id}/	Replace device status	{...}
PATCH	/api/device-status/{id}/	Partial update device status	{...}
DELET	/api/device-status/{id}/	Delete device status	—
POST	/api/device-status/{id}/update-status/	Update status	—

Method	Endpoint	Description	Body
GET	/api/device-status/{id}/determine-status/	Determine status	—
POST	/api/device-status/{id}/create-accident/	Create accident	—
GET	/api/status-monitor/	List status monitor	—
POST	/api/status-monitor/	Create status monitor	{...}
GET	/api/status-monitor/{id}/	Retrieve status monitor	—
PUT	/api/status-monitor/{id}/	Replace status monitor	{...}
PATCH	/api/status-monitor/{id}/	Partial update status monitor	{...}
DELET	/api/status-monitor/{id}/	Delete status monitor	—
POST	/api/status-monitor/start-monitoring/	Start monitoring	—
POST	/api/status-monitor/check-all-devices/	Check all devices	—
POST	/api/status-monitor/check-device/	Check device	—
POST	/api/status-monitor/emergency-check/	Emergency check	—
POST	/api/status-monitor/send-summary/	Send summary	—
GET	/api/status-monitor/stats/	Stats	—
GET	/api/status-monitor/device-status/	Device status	—
POST	/api/internal/accidents/websocket_notify/	accident websocket notify	—

Math functions

Method	Endpoint	Description	Body
GET	/api/math-functions/	List math functions	—
POST	/api/math-functions/	Create math functions	{...}
GET	/api/math-functions/{id}/	Retrieve math functions	—
PUT	/api/math-functions/{id}/	Replace math functions	{...}
PATCH	/api/math-functions/{id}/	Partial update math functions	{...}
DELET	/api/math-functions/{id}/	Delete math functions	—
POST	/api/math-functions/{id}/calculate/	Calculate	—
POST	/api/math-functions/{id}/calculate_internal/	Calculate internal	—
POST	/api/math-functions/calculate-all/	Calculate all	—
GET	/api/math-functions/{id}/variables/	Variables	—
POST	/api/math-functions/{id}/test-expression/	Test expression	—
POST	/api/math-functions/validate-expression/	Validate expression	—
GET	/api/math-function-variables/	List math function variables	—
POST	/api/math-function-variables/	Create math function variables	{...}
GET	/api/math-function-variables/{id}/	Retrieve math function variables	—
PUT	/api/math-function-variables/{id}/	Replace math function variables	{...}
PATCH	/api/math-function-variables/{id}/	Partial update math function variables	{...}
DELET	/api/math-function-variables/{id}/	Delete math function variables	—
GET	/api/math-function-variables/{id}/value/	Value	—

Hardware configuration and TIA Portal

Method	Endpoint	Description	Body
GET	/api/hw-catalog/	List hw catalog	—
POST	/api/hw-catalog/	Create hw catalog	{...}
GET	/api/hw-catalog/{id}/	Retrieve hw catalog	—
PUT	/api/hw-catalog/{id}/	Replace hw catalog	{...}
PATCH	/api/hw-catalog/{id}/	Partial update hw catalog	{...}
DELET	/api/hw-catalog/{id}/	Delete hw catalog	—
POST	/api/hw-catalog/import-gsd/parse/	Import gsd/parse	—
POST	/api/hw-catalog/import-gsd/confirm/	Import gsd/confirm	—
GET	/api/hw-stations/	List hw stations	—
POST	/api/hw-stations/	Create hw stations	{...}
GET	/api/hw-stations/{id}/	Retrieve hw stations	—
PUT	/api/hw-stations/{id}/	Replace hw stations	{...}
PATCH	/api/hw-stations/{id}/	Partial update hw stations	{...}
DELET	/api/hw-stations/{id}/	Delete hw stations	—
POST	/api/hw-stations/{id}/auto-assign-addresses/	Auto assign addresses	—
GET	/api/hw-stations/{id}/available-slots/	Available slots	—
GET	/api/hw-slots/	List hw slots	—
POST	/api/hw-slots/	Create hw slots	{...}
GET	/api/hw-slots/{id}/	Retrieve hw slots	—
PUT	/api/hw-slots/{id}/	Replace hw slots	{...}
PATCH	/api/hw-slots/{id}/	Partial update hw slots	{...}
DELET	/api/hw-slots/{id}/	Delete hw slots	—
POST	/api/hw-slots/bulk-update/	Bulk update	—
GET	/api/hw-network/	List hw network	—
POST	/api/hw-network/	Create hw network	{...}
GET	/api/hw-network/{id}/	Retrieve hw network	—
PUT	/api/hw-network/{id}/	Replace hw network	{...}
PATCH	/api/hw-network/{id}/	Partial update hw network	{...}
DELET	/api/hw-network/{id}/	Delete hw network	—
GET	/api/tia-deploy-jobs/	List tia deploy jobs	—
POST	/api/tia-deploy-jobs/	Create tia deploy jobs	{...}
GET	/api/tia-deploy-jobs/{id}/	Retrieve tia deploy jobs	—
PUT	/api/tia-deploy-jobs/{id}/	Replace tia deploy jobs	{...}
PATCH	/api/tia-deploy-jobs/{id}/	Partial update tia deploy jobs	{...}
DELET	/api/tia-deploy-jobs/{id}/	Delete tia deploy jobs	—
POST	/api/tia-deploy-jobs/submit/	Submit	—
POST	/api/tia-deploy-jobs/{id}/cancel/	Cancel	—

Method	Endpoint	Description	Body
GET	/api/tia-deploy-jobs/{id}/progress/	Progress	—
GET	/api/tia-agent-config/	List tia agent config	—
POST	/api/tia-agent-config/	Create tia agent config	{...}
GET	/api/tia-agent-config/{id}/	Retrieve tia agent config	—
PUT	/api/tia-agent-config/{id}/	Replace tia agent config	{...}
PATCH	/api/tia-agent-config/{id}/	Partial update tia agent config	{...}
DELET	/api/tia-agent-config/{id}/	Delete tia agent config	—
GET	/api/tia-agent-config/{id}/check-connection/	Check connection	—
GET	/api/tia-agent-config/{id}/agent-status/	Agent status	—
POST	/api/tia/deploy/	tia deploy	—
POST	/api/tia/auto-addresses/	tia auto addresses	—
GET	/api/tia/address-mapping/	tia address mapping	—
POST	/api/tia/deploy-jobs//progress/	tia deploy job progress	—
POST	/api/tia/deploy-jobs//complete/	tia deploy job complete	—

PLC export

Method	Endpoint	Description	Body
GET	/api/plc-export/preview/	plc export preview	—
GET	/api/plc-export/validate/	plc export validate	—
GET	/api/plc-export/generate/	plc export generate	—
GET	/api/plc-export/address-map/	plc export address map	—
GET	/api/plc-export/provision-io-points/	plc export provision io points	—
GET	/api/plc-export/provision-io-points/preview/	plc export provision io points preview	—
GET	/api/plc-export/provision-io-points/entities/	plc export provision entities	—

Project import / export

Method	Endpoint	Description	Body
GET	/api/project/export-models/	get export models	—
GET	/api/project/export/	export project	—
GET	/api/project/import/preview/	preview import	—
POST	/api/project/import/	import project	—
POST	/api/project/backup-db/	backup database	—
POST	/api/project/restore-db/	restore database	—
POST	/api/project/normalize-ids/	normalize ids	—
DELETE	/api/project/clear-database/	clear database	—
GET	/api/project/export-graph-data/	export graph data	—
POST	/api/project/import-graph-data/	import graph data	—
GET	/api/project/graph-data-stats/	graph data stats	—

License

Method	Endpoint	Description	Body
GET	/api/license/status/	get license status	—
POST	/api/license/activate/	activate license	—
POST	/api/license/generate/	generate license key	—
GET	/api/license/update-info/	update license info	—

System administration

Method	Endpoint	Description	Body
GET	/api/system/info/	system info	—
POST	/api/system/health-status/	system health	—
POST	/api/system/service-restart/	service restart	—
GET	/api/system/service-logs/	service logs	—
GET	/api/system/update-status/	update status	—
POST	/api/system/update-check/	update check	—
POST	/api/system/update-apply/	update apply	—
POST	/api/system/update-progress/	update progress	—
POST	/api/system/update-notify/	update notify	—
POST	/api/system/update-cancel/	update cancel	—
POST	/api/system/update-rollback/	update rollback	—
GET	/api/system/update-rollback-info/	update rollback info	—
GET	/api/system/update-history/	update history	—
GET	/api/system/update-log/	update log	—
POST	/api/system/update-backups/	update backups	—
GET	/api/system/maintenance-status/	update maintenance status	—
POST	/api/system/update-branch/	update branch config	—
POST	/api/system/update-affected/	update affected components	—
GET	/api/system/update-changelog/	update changelog	—
POST	/api/system/update-diff/	update diff stat	—
POST	/api/system/update-schedule/	update schedule	—
POST	/api/system/diagnostics/	system diagnostics	—
POST	/api/system/disk-cleanup/	disk cleanup	—
POST	/api/system/update-upload/	update upload offline	—
POST	/api/system/smoke-test/	smoke test	—
POST	/api/system/release-notes/	update release notes	—
POST	/api/system/auto-apply-schedule/	auto apply schedule	—
POST	/api/system/update-dry-run/	update dry run	—
POST	/api/system/auto-translate/	run auto translate	—
GET	/api/system/auto-translate/status/	auto translate status	—
GET	/api/system/update-backups//download/	download backup	—
POST	/api/system/update-backups//restore/	restore backup	—
DELET	/api/system/update-backups//	delete backup	—

E

WebSocket API

Real-time data uses WebSocket connections on the same host as the backend.

Channel	Description	Direction
ws/device/{id}/	Single device status updates	Server → Client
ws/device/{id}/control/	Device control commands	Bidirectional
ws/schema/{id}/devices/	All devices on a schema	Server → Client
ws/schema/{id}/pipes/	Pipe flow/status on a schema	Server → Client
ws/schema/{id}/sequences/	Sequence states on a schema	Server → Client
ws/schema/{id}/batches/	Batch progress on a schema	Bidirectional
ws/schema/{id}/accidents/	Accidents on a schema	Server → Client
ws/sequence/{id}/	Single sequence status	Server → Client
ws/sequences/all/	All running sequences	Server → Client
ws/pipe/{id}/	Single pipe status	Server → Client
ws/system/	CPU, RAM, disk, uptime (every ~2 s)	Server → Client
ws/plc/status/	PLC service status	Server → Client
ws/device-status/	Global device status feed	Server → Client
ws/cos/all/	Coordination signals	Server → Client
ws/math-functions/	Math function outputs	Server → Client
ws/activity-log/	User activity stream	Server → Client
ws/accidents/	Global accident feed	Server → Client

Connection URL

```
ws://localhost:8000/ws/system/
```

Pass JWT when required:

```
ws://localhost:8000/ws/schema/1/devices/?token=<access_token>
```

Rust WebSocket server (high-throughput device updates)

Bulk read-only device updates may be served by the Rust worker on port 8001, proxied in production via `/rws/ws/` (nginx). The frontend falls back to Django WebSocket if Rust is unavailable.

Example: system metrics message

```
{
  "type": "system_metrics",
  "cpu": 45.2,
  "memory": 67.8,
  "disk": 34.1,
  "network": {"rx": 1024, "tx": 512},
  "uptime": 86400,
  "temperature": 52.0,
```

```
"lastUpdate": "2026-04-07T12:00:00Z"  
}
```

AI Assistant API (FastAPI)

The AI assistant runs as a separate FastAPI service, typically proxied at `/ai-api/v1`.

Uses the same JWT as the main backend (Authorization: Bearer).

Method	Endpoint	Description
GET	/ai-api/v1/health	Service health
POST	/ai-api/v1/sessions	Create chat session
GET	/ai-api/v1/sessions	List sessions
GET	/ai-api/v1/sessions/{id}	Get session
PATCH	/ai-api/v1/sessions/{id}	Update session
DELET	/ai-api/v1/sessions/{id}	Delete session
POST	/ai-api/v1/chat/{session_id}/messages	Send message (JSON or SSE stream)
POST	/ai-api/v1/images/analyze	Analyze P&ID image
GET	/ai-api/v1/settings	Get AI settings
PUT	/ai-api/v1/settings	Update AI settings

Chat request (stream: true returns Server-Sent Events):

```
{
  "content": "List all motors in alarm state",
  "stream": false
}
```

Appendix: Resource index

Resource	Base URL	CRUD	Custom actions (sample)
Auth	/api/auth/	—	login, register, me, refresh
Health	/api/health	—	health check
Accident Events	/api/accident-events		trigger, activate, deactivate, by-sequence-step, check-triggers
Accident Types	/api/accident-types/		—
Accidents	/api/accidents/		update-status, acknowledge, resolve, close, stats, check-all-devices, resolve-all
Analog Inputs	/api/analog-inputs/		—
Analog Outputs	/api/analog-outputs/		—
Batch Queue	/api/batch-queue/		by-stage, reorder, set-priority
Batch Stage History	/api/batch-stage-history/		—
Batches	/api/batches/		start, transfer, transfer-internal, pause, resume, cancel, fail, history
Coordination Signals	/api/coordination-signals/		—
Counters	/api/counters/		—
Data Points	/api/data-points/		delete-all, graph, available-parameters, timescale-status
Device Groups	/api/device-groups/		—
Device Status	/api/device-status/		update-status, determine-status, create-accident
Digital Inputs	/api/digital-inputs/		—
Digital Outputs	/api/digital-outputs/		—
Event Step Bindings	/api/event-step-bindings/		—
Event Variables	/api/event-variables		—
Events	/api/events/		triggerwebsocketupdate, trigger, check-trigger, activate, deactivate, reset-trigger, active-events, check-all-events, ...
Graphical Statuses	/api/graphical-statuses/		upload-icon, list-icons
Graphs	/api/graphs/		data
Hw Catalog	/api/hw-catalog/		import-gsd/parse, import-gsd/confirm
Hw Network	/api/hw-network/		—
Hw Slots	/api/hw-slots/		bulk-update
Hw Stations	/api/hw-stations/		auto-assign-addresses, available-slots
Allowed Ips	/api/ip-access/allowed-ips/		my-ips, by-type, toggle-active, users, check-ip
Logs	/api/ip-access/logs/		failed-attempts, statistics
Math Function Variables	/api/math-function-variables/		value
Math Functions	/api/math-functions/		calculate, calculate_internal, calculate-all, variables, test-expression,
Measurement Units	/api/measurement-units/		—
Motors	/api/motors/		—
Permissions	/api/permissions/		categories, actions

Resource	Base URL	CRUD	Custom actions (sample)
Pid Controllers	/api/pid-controllers/		calculate-output, set-setpoint, set-pid-parameters, calculate-all-outputs
Pipes	/api/pipes/		triggerwebsocketupdate
Plc Protocols	/api/plc-protocols/		—
Plcs	/api/plcs/		status, set-run-mode, all-status
Analog Inputs	/api/points/analog-inputs/		update-value
Analog Outputs	/api/points/analog-outputs/		update-value
Digital Inputs	/api/points/digital-inputs/		update-value
Digital Outputs	/api/points/digital-outputs/		update-value
Production Line Stages	/api/production-line-stages/		queue
Production	/api/production-line		create-batch, batches, triggernextbatch, stages-status
Production Recipe Variable Values	/api/production-recipe-variable-values/		—
Production Recipe	/api/production-recipe-variables/		—
Production Recipes	/api/production-recipes/		set-active, duplicate
Protocols	/api/protocols/		—
Pulse Module Devices	/api/pulse-module-devices/		—
Pulse Module Step Phases	/api/pulse-module-step-phases/		—
Pulse Module Steps	/api/pulse-module-steps/		—
Pulse Modules	/api/pulse-modules/		start, stop
Recipes	/api/recipes/		set-steps-order, preview, preview, set-step-transitions, set-all-transitions, active, duplicate
Roles	/api/roles/		permissions, users
Schema	/api/schema-option		update-position, trigger, reset, rebind
Schema Production	/api/schema-production-lines/		update-position, update-size, update-display-settings, rebind
Schema Recipe Variables	/api/schema-recipe-variables/		update-position, rebind
Schema Sequences	/api/schema-sequences/		update-position, update-size, update-display-settings, rebind
Schema Timers	/api/schema-timers/		rebind
Schemas	/api/schemas/		add-device, add-math-function, add-image, add-text, add-valve, add-motor, add-analog-input, add-analog-output, ...
Sequence Options	/api/sequence-options/		trigger, check-availability, reset
Sequence	/api/sequence-step		set-device-states, step-events, add-transition-conditions, step-accident-events
Sequences	/api/sequences/		transition-conditions, step-events, detailed-status, status, condition-setpoint-override, check-transitions, set-active-step, triggerwebsocketupdate, ...
Status Monitor	/api/status-monitor/		start-monitoring, check-all-devices, check-device, emergency-check, send-summary, stats, device-status

Resource	Base URL	CRUD	Custom actions (sample)
Tank Sections	/api/tank-sections/		—
Tank Strapping Entries	/api/tank-strapping-entries/		—
Tanks	/api/tanks/		calculate-volume, importstrappingtable, exportstrappingtable, volume-at-level
Tia Agent	/api/tia-agent-config		check-connection, agent-status
Tia Deploy Jobs	/api/tia-deploy-jobs/		submit, cancel, progress
Timers	/api/timers/		—
Transition Conditions	/api/transition-conditions/		content-types, simulate, clear-simulation
Transition Conditions	/api/transition_conditions/		content-types, simulate, clear-simulation
User Activity Logs	/api/user-activity-logs/		recent, statistics, clear
User Roles	/api/user-roles/		—
Users	/api/users/		roles, roles, roles, me, set-password, upload-avatar
Valves	/api/valves/		activate-upper-seat, activate-lower-seat, deactivate-seats
Variable Speed Drives	/api/variable-speed-drives/		—

Related documents

Document	Path
User Manual (EN)	docs/USER_MANUAL_EN.md
Docker setup	docker/README.md
Schema API notes	docs/schema_api.md
Pipe API notes	docs/pipe_api.md

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