



VoltEdge

User Manual

A practical reference for daily operations, maintenance, assets, inventory, purchasing, manifests, analytics, and configurable PDF reports.

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Version 1.4.0

This manual explains the normal day-to-day use of VoltEdge, from sign-in through operational records, maintenance, inventory, purchasing, manifests, analytics, reports, administration, and troubleshooting. Availability of a screen or command depends on the licensed plan and the permissions assigned to the signed-in role.

1. Before you begin

1.1 What VoltEdge manages

VoltEdge connects eight operational modules around the same asset and audit history:

- M1 Operations records equipment, operating hours, daily reports, and failures.
- M2 KPIs and Charts converts operational records into availability, MTBF, MTTR, OEE, trends, and comparisons.
- M3 Asset Intelligence combines condition, risk, recurrence, cost, maintenance, and data quality into an asset-health view.
- M4 Maintenance manages Work Orders, preventive-maintenance plans, checklists, parts, Service Reports, and execution history.
- M5 Assets manages the physical asset hierarchy, components, certificates, operating hours, and QR labels.
- M6 Inventory manages stock items, movements, balances, locations, Kardex, inventory checks, and reorder alerts.
- M7 Purchasing manages Purchase Requisitions, requested items, approvals, links to maintenance, and the purchasing audit trail.
- M8 Manifests manages controlled dispatch and return of assets, components, and generic items.

The Home dashboard and Analytics portal read from these modules. A change made in one module can affect indicators and linked workflows elsewhere.

1.2 License tiers

VoltEdge has three license tiers. Additional features in the license payload may extend the default set:

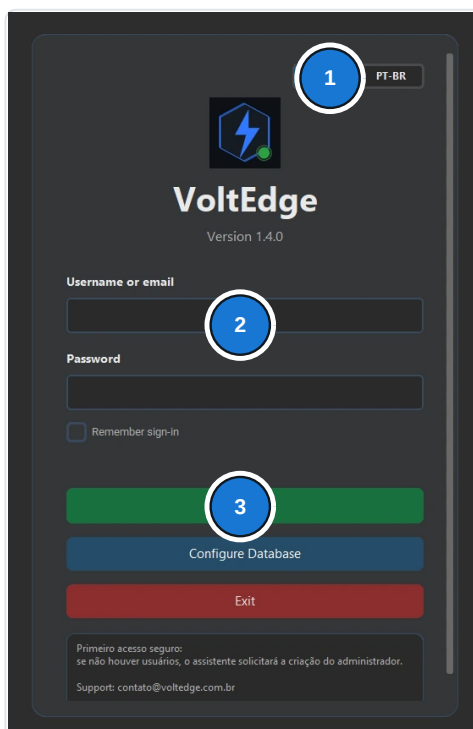
- **Free:** Home, M1 Operations, M2 KPIs, and Preferences; up to 5 equipment records and 1 user by default.
- **Standard:** adds M3 Asset Intelligence, M4 Maintenance, M5 Assets, M6 Inventory, exports, multiple users, and compatible database backends; up to 3 users by default.
- **Pro:** adds M7 Internal Requisitions, M8 Manifests, and extra modules; up to 10 users by default.

The tier determines available modules. The user's role determines allowed actions inside those modules. Every tier and role can open or download the manual from Preferences.

1.3 Sign-in and language

1. Open VoltEdge.
2. Use the EN / PT-BR selector in the upper-right area of the sign-in card to change the language immediately.
3. Enter the username or email address and password.
4. Enable Remember sign-in to retain only the login identifier on this Windows profile. VoltEdge does not store the password in this option.
5. Select Sign in.

The selected language is saved locally and is used by the next startup. A new installation starts in English. Existing installations keep their previously saved language.



STEP BY STEP — 1 choose EN-US; 2 enter username or email and password; 3 select Sign in. Database configuration requires administrative authorization after users exist.

The Configure Database button is available only during first access or recovery. After users exist, database changes require an authenticated administrator and must be made in Settings.

1.4 First administrative access

When the configured database has no active users, VoltEdge opens the first-access assistant. Create the administrator, store the credentials securely, and sign in again. The administrator can then create roles and users, activate the license, configure catalogs, and define report templates.

1.5 Common interface behavior

- The left navigation opens Home, M1 through M8, Analytics, and Settings according to permissions.
- Search fields filter the visible list. Date, status, area, equipment, and category filters narrow the operational context.
- Table headings may support sorting, resizing, and persisted column preferences.
- Selecting a row normally loads its full record into a form or detail panel.
- New clears the current selection and opens a clean form.
- Edit unlocks a selected record when the current role and record ownership allow it.
- Save validates required fields before writing. Validation messages explain what must be corrected.
- Context menus provide actions related to the selected row, such as opening details, exporting, linking, or archiving.
- Export commands always use the current filters or the currently selected record, depending on the screen.
- Disabled actions indicate missing permission, plan availability, incompatible status, or an incomplete selection.

1.6 Dates, times, and numeric values

Use the date picker instead of typing whenever possible. Operating, downtime, and preventive-maintenance durations are stored in minutes and displayed as hours where appropriate. Do not enter operational minutes greater than the calculated available minutes. Currency and decimal formatting follows the active locale where supported.

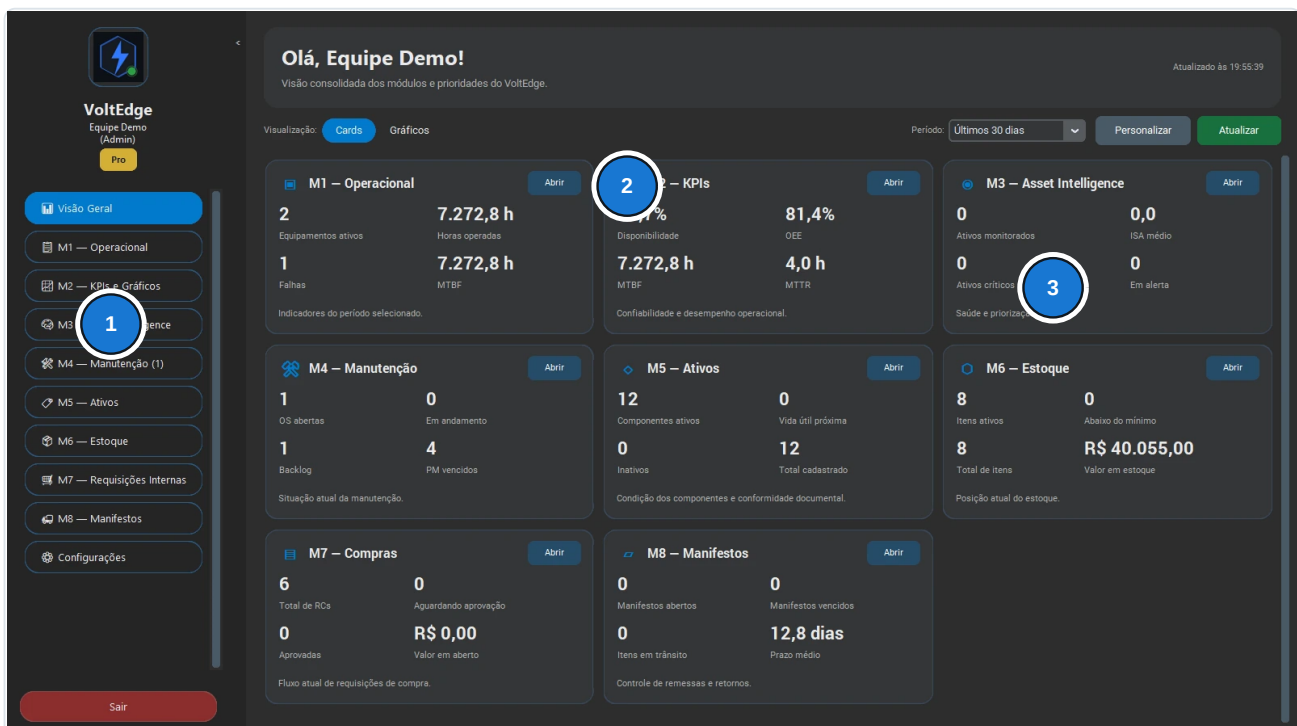
1.7 Attachments and traceability

Attachments are linked to a specific entity such as equipment, failure, daily report, Work Order, certificate, Purchase Requisition, or manifest. Confirm the entity before adding a file. Images can appear in PDF reports; other documents appear in attachment lists. Trace codes, creation information, status history, and audit events must not be replaced by free-text notes.

2. Home and navigation

2.1 Home dashboard

Home provides a consolidated, read-only operational summary. Tiles and charts may include asset totals, open failures, active Work Orders, certificate alerts, stock value, items below minimum, Purchase Requisitions under approval, and manifests in transit.



STEP BY STEP — 1 use the sidebar to open a module; 2 review consolidated indicators; 3 select Open on the card that requires attention.

Use Home to identify priorities, then open the owning module to act. Home indicators are not separate records: they are calculated from module data. When a value appears incorrect, verify the source record, active filters, date range, and data-quality notices.

2.2 Navigation and permissions

The visible module list is filtered by the signed-in role and license. A user may have view permission without create, edit, approve, export, or configuration permission. Administrators manage these capabilities under Settings > Roles and permissions.

2.3 Read-only Analytics portal

Analytics opens a protected local browser session. It is read-only and cannot create, edit, or delete records. Use its navigation and filters to compare equipment, time periods, and consolidated indicators. Close the browser tab when the review is complete; use the desktop modules for operational changes.

3. M1 - Operations

3.1 Purpose

M1 is the primary source for daily operation, equipment operating history, and failures. Accurate M1 dates and durations directly affect M2 KPIs and M3 asset-health analysis.

3.2 Overview

The Overview section summarizes the current operational context. Review open failures, daily status, operating-hour coverage, and equipment condition. Use it as a starting point, not as a replacement for the underlying records.

3.3 Daily operational report

The Daily section records what happened during a date and shift.

1. Select New report.
2. Choose the date, shift, area, and equipment.
3. Select the day status and responsible person.
4. Enter operating minutes and preventive-maintenance minutes.
5. Review automatically calculated corrective downtime and available minutes.
6. Enable manual downtime adjustment only when an authorized correction is required.
7. Record the failure summary, production or operation summary, and general notes.
8. Use Manage files to attach evidence.
9. Select Save report.

The day cannot exceed 1,440 minutes. Available time cannot be less than operating time. Failure references and downtime may be calculated from failures matching the selected date, area, equipment, and shift.

To review an existing report, select its row. The form opens in viewing mode. The original author or an administrator can select Edit. Select Export PDF to create the daily report with the current company branding, saved report template, operating data, and attachments.

3.4 Equipment records

The Equipment section stores the operating identity used throughout VoltEdge. Complete the code, name, area, type, criticality, manufacturer, model, serial number, installation date, nominal hours, and current status where available.

Keep equipment codes stable. Other modules use the equipment ID and displayed code to link failures, Work Orders, certificates, components, stock requirements, and manifests.

Available actions include:

- Open or edit the selected equipment record.
- Manage equipment attachments and image.
- Record or review operating hours.
- Export the Equipment Sheet PDF.
- Export the Diagnostic PDF based on recent failures and KPIs.
- Open linked Asset 360 information when available.

3.5 Failure records

Create one failure record per operational event.

1. Select the equipment and event dates.
2. Classify failure type, mode, status, impact, and responsible person.
3. Describe the symptom and event in objective language.
4. Record root cause only after analysis; do not use the root-cause field for an unverified guess.
5. Record corrective action, parts, observations, and evidence.
6. Maintain the timeline and treatment status.
7. Link or create a corrective Work Order when execution is required.

The failure PDF can include identification, timeline, analysis, evidence, actions, root-cause analysis, linked Work Orders, Service Reports, and attachments. Editing section visibility in the report template changes only the document, not the stored failure.

3.6 Operating hours

Operating-hour records provide the denominator used in availability and reliability calculations. Avoid duplicate equipment/date/shift entries. When a Daily report records operating minutes for the same context, review the integrated operating-hour record rather than entering it a second time.

3.7 M1 routine checks

- Confirm every active equipment record has area and criticality.
- Reconcile daily minutes before closing the shift.
- Close failure treatment only after actions and evidence are complete.
- Link maintenance work instead of copying Work Order details into notes.
- Export PDFs after saving so the document reflects the audited database state.

4. M2 - KPIs and Charts

4.1 Purpose and data source

M2 calculates indicators from operational hours, failures, downtime, maintenance, and production data. It does not repair missing source data. If a chart is empty, first verify the date range, equipment filters, and M1/M4 records.

4.2 Filters

Apply period, area, equipment, and other available filters before interpreting a result. A filter affects KPI cards, tables, charts, and PDF exports together. Use comparable periods when evaluating improvement or deterioration.

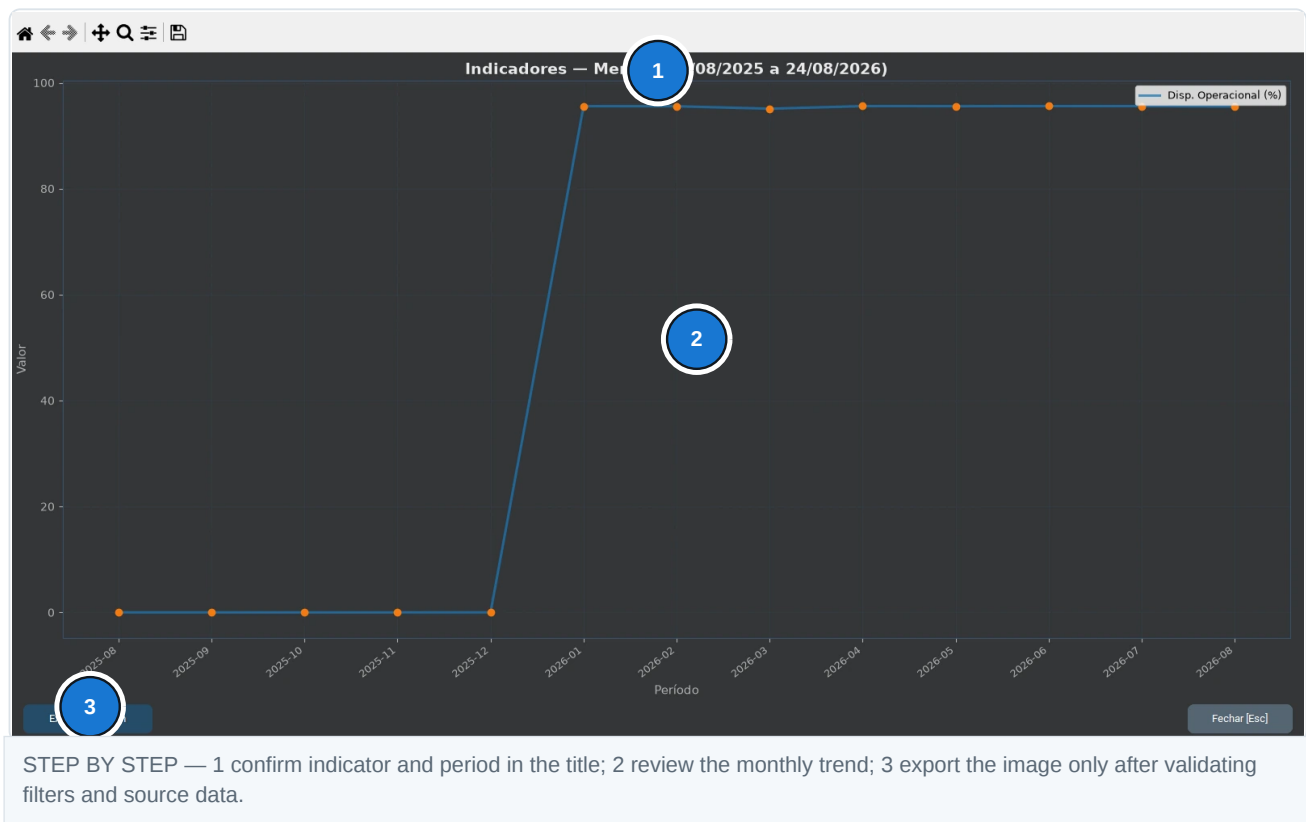
4.3 Core indicators

- Availability measures the proportion of available time not lost to downtime.
- MTBF measures average operating time between failures.
- MTTR measures average repair duration.
- OEE combines availability, performance, and quality when sufficient production data exists.
- Failure count and downtime show event frequency and operational impact.

Zero is not the same as missing data. Review empty or incomplete-source warnings before making decisions.

4.4 Charts and analysis

Use trend charts to identify movement over time, Pareto views to prioritize dominant failure modes or causes, and comparisons to identify equipment outside the normal range. Hover and selection behavior depends on the chart. Refresh after changing filters or source records.



If charts are unavailable, confirm that the packaged Matplotlib dependency is present. The rest of the application remains available when chart rendering fails.

4.5 Exporting the KPI PDF

Select Report PDF after applying the desired filters. The export includes the selected period, KPI summary, tables, and available charts. The active M2 report template controls branding, style, visible sections, extra fields, and positioned layout.

5. M3 - Asset Intelligence

5.1 Purpose

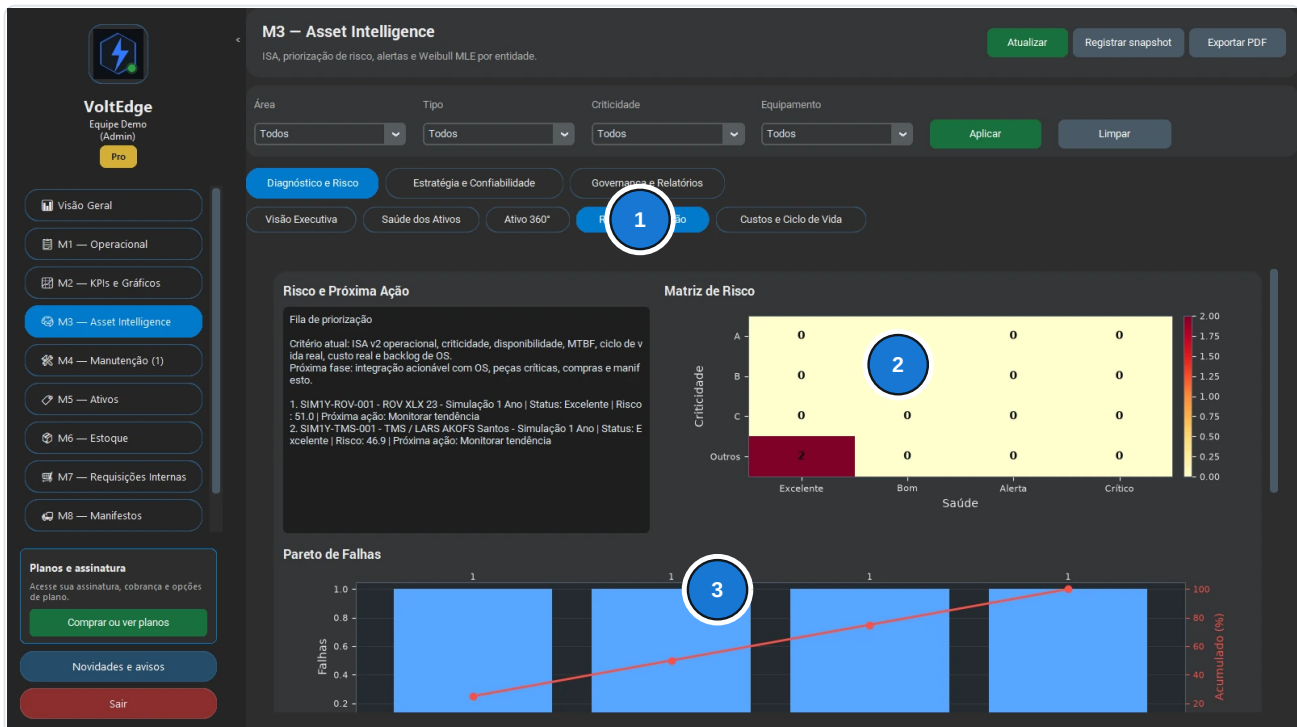
M3 is a decision-support layer. It combines reliability, availability, maintainability, cost, criticality, lifecycle, recurrence, alerts, and data quality. Recommendations require technical validation before opening a Work Order, purchasing parts, or changing a PM plan.

5.2 Dashboard filters and refresh

Choose area, type, criticality, equipment, and period as available. Select Refresh after changing the context. The snapshot, prioritization ranking, alerts, and visualizations must be read under the same filter set.

5.3 Asset Health Index and risk

The Asset Health Index summarizes multiple dimensions into a score. Risk considers probability and consequence signals. A high health score does not override an active critical alert, and a high risk score should be traced back to its supporting evidence.



STEP BY STEP — 1 open Risk and Prioritization; 2 review the queue and matrix; 3 use the Pareto chart to focus investigation on dominant causes.

Review:

- Monitored assets and average health.
- Critical assets and maximum risk.
- Prioritization ranking.
- Reliability and recurrence signals.
- Cost accumulation and lifecycle context.
- Data-quality penalties.

5.4 Asset 360

Asset 360 consolidates the selected equipment's identity, components, failures, Work Orders, Service Reports, certificates, stock relationships, manifests, and history. Use navigation actions to open the owning record before editing. Do not treat a summary tile as the authoritative record when details differ.

5.5 Predictive and statistical views

Predictive alerts and statistical calculations expose evidence and confidence limitations. Weibull or recurrence analysis requires sufficient historical events. Sparse data can produce unstable conclusions. Verify event classification and dates before using statistical output in a maintenance strategy.

5.6 Health report PDF

Export PDF creates the M3 health report for the current filters. The document may include executive summary, intelligent visualizations, ranking, alerts, and audit context. Template visibility controls whether the Asset and Analysis blocks are included.

6. M4 - Maintenance

6.1 Work Orders

A Work Order is the controlled execution record for maintenance.

1. Create the Work Order manually or from a failure/PM workflow.
2. Select equipment and component where applicable.
3. Define type, priority, status, responsible person, planned dates, and description.
4. Add checklist items, required parts, attachments, and technical context.
5. During execution, update checklist results, comments, stock movements, and Service Reports.
6. Conclude only after required evidence and results are complete.

Status transitions may restrict editing. Canceled and completed records remain available for audit. Use comments and events for history instead of rewriting earlier facts.

The screenshot displays the 'M4 — Manutenção' (CMMS / EAM) interface. The top section shows a summary of work orders: 1 OS abertas, 0 Em execução, 0 OS vencidas, and 4 PM vencidas. Below this, there are tabs for 'Painel', '1' (highlighted), 'Planos PM', and 'Paradas'. The '1' tab contains a section for 'Abrir Execução da OS' with filters for Equip, Tipo, Prioridade, Prazo, and Comp. A table titled 'Ordens de Serviço Ativas (1)' shows a single entry: OS-SIM1Y - Inspeção vi. ROW XLX 23 - Ser. Camera System, with status 'Normal' and 'Aberta'. The table columns include NP OS, Título, Equipamento, Componente, Prioridade, Status, No status, SLA, Progresso, and Prazo. The right sidebar shows 'Contexto de trabalho' with a filter for 'Todos' and a button 'Atualizar e verificar PM'.

STEP BY STEP — 1 open the Work Orders tab; 2 create a new Work Order or select an existing one; 3 filter and review SLA, progress, and deadline before opening execution.

6.2 Parts and inventory integration

Parts linked to a Work Order can reference M6 items. A stock issue or return creates inventory movement and must match the executed quantity. Insufficient stock may require a Purchase Requisition rather than an undocumented substitution.

6.3 Service Reports

Service Reports document execution results linked to a Work Order. Record the executor, result, diagnosis, action performed, checklist responses, dates, and evidence. Multiple Service Reports may exist when work spans teams or stages.

Export PDF produces an auditable Service Report using its own M4 template.

6.4 Preventive-maintenance plans

PM plans define recurring work for equipment or components. Configure title, frequency, active status, next execution, responsible context, and checklist. Review generated Work Orders before execution. When a plan is overdue, automatic generation may advance its schedule; proactive generation should not incorrectly skip the current due date.

Use the PM Plan PDF to communicate the plan and checklist without exposing edit controls.

Reusable technical models let you define maintenance content once and apply it to multiple equipment records. Each application keeps an independent schedule and history. Publishing a revision never changes existing applications automatically: use Adopt revision and select one or multiple applications.

The Preventive Gantt shows the annual schedule. Use search, priority, and year navigation, then select a row to open its PM plan.

To create multiple PM plans:

1. Select Download template under Bulk PMs.
2. Fill in the PMs sheet without changing its headers.
3. Use a code from the Equipment sheet and, optionally, an existing component.
4. Separate checklist items with semicolons.
5. Select Import Excel, review validation, and confirm the batch.
6. Correct every reported row before retrying. Existing PMs with the same equipment, component, and title are skipped.

M4 — Manutenção CMMS / EAM

Ordens de serviço, relatórios de serviço, planos preventivos e histórico técnico integrados ao Operacional.

1 OS abertas 0 Em execução 0 OS vencidas 4 PM vencidos

Painel OS 1 Paradas

+ Novo modelo 2 Biblioteca PM Gantt Preventivas Ocultar cards Excluir

PMs em lote Importar 3 Exportar modelo

Buscar: Equip.: Todos Comp.: Todos

Todos 4 Ativos 4 Vencidos 4

7 dias 0 OTJ 0 Inativos 0

Templates de Manutenção Preventiva (4) Exibindo 4 Carregar mais

Template	Equipamento	Componente	Tipo	Frequência	Próxima execução	OTJ
PM Thruster - vib	ROV XLX 23 - Simula	Thruster FWD	Preventiva	21	21/01/2026	
PM Electrical Motor	ROV XLX 23 - Simula	Electrical Motor	Teste elétrico	60	28/01/2026	
PM Winch - freio	TMS / LARS AKOFS S	Winch	Lubrificação	30	28/01/2026	
PM HPU - óleo, fi	TMS / LARS AKOFS S	HPU	Preventiva	90	28/01/2026	

Selecione um Template PM na lista para ver os detalhes.

STEP BY STEP — 1 open PM Plans; 2 create or apply a reusable model; 3 under Bulk PMs, download the template and import the completed workbook; 4 review overdue plans and applications in the list.

6.5 Maintenance stoppages

A maintenance stoppage groups existing Work Orders, Work Orders generated from PM plans, and stoppage-exclusive Work Orders inside one planned window. Create the stoppage, link its scope, plan it, and start execution. Its scope is frozen while in progress unless an authorized and justified workflow applies.

Select Open stoppage items to review links in a dedicated wide window. From there, open the related Work Order/PM or remove selected links while the stoppage remains Draft or Planned. Closing is blocked while Work Orders remain open, except for an authorized role with a justification.

M4 — Manutenção CMMS / EAM

Ordens de serviço, relatórios de serviço, planos preventivos e histórico técnico integrados ao Operacional.

OS abertas: 1, Em execução: 0, OS vencidas: 0, PM vencidos: 4

Contexto de trabalho: Filtre por equipamento para focar OS, PM e histórico. Todos. Atualizar e verificar PM

Painel: OS, Planos PM (1)

2: [Botão] 3: [Botão] Encerrar, Cancelar parada, Reabrir, Atualizar, Status: Todos

Editar, Vincular OS, Gerar por PM, Nova OS exclusiva, Itens e vínculos

Paradas de manutenção

Planejamento, execução e encerramento das paradas vinculadas às Ordens de Serviço.

Código	Parada	Status	Início planejado	4	Fim	Responsável	Itens	OS abertas
PAR-2026-014	Parada programada — ROV e sistema de lançamento	Planejada	2026-09-14 06:00:00	4	2026-09-14 06:00:00	Supervisor de Manutenção	3	1

5: [Botão] a parada

Planos e assinatura: Acesse sua assinatura, cobrança e opções de plano. Comprar ou ver planos

Novidades e avisos

Sair

Selecione uma parada para consultar seus itens em uma janela dedicada.

STEP BY STEP — 1 open Stoppages; 2 create the window and link Work Orders or generate them from PM; 3 plan and start according to authorization; 4 monitor items and open Work Orders; 5 open the dedicated items window.

6.6 Maintenance history and audit

Review status history, comments, stock movements, linked Purchase Requisitions, certificates, template snapshots, and attachments. The Work Order PDF consolidates these areas according to the saved template.

The read-only general change log combines Work Order, PM, stoppage, asset, and certificate events according to permissions. Filters and exports remain scoped to the current company. Retention changes are audited, and automatic purge remains disabled until a formal administrative decision.

6.7 M4 routine checks

- Keep status aligned with actual execution.
- Record parts through inventory integration.
- Use Service Reports for performed work.
- Do not complete a Work Order with unresolved required checklist items.
- Review overdue PM plans and automatically generated Work Orders daily.

7. M5 - Assets

7.1 Asset and component hierarchy

M5 represents the physical structure. Equipment comes from the shared asset identity; components add installed position, tag, serial number, criticality, lifecycle, and relationship details.

Create components under the correct equipment. Use stable codes and serial numbers. When replacing a component, preserve the historical record and update installation/removal context instead of overwriting traceable identity.

M5 — Ativos
Componentes por equipamento, horas operacionais e etiquetas QR.

Componentes Ativos: 12 | Próximos da Vida Útil: 0 | Inativos/Substituídos: 0

Equipamento	Ativos	Inativos	Horas Totais	Utilização
SIM1Y-ROV-001 - ROV XLX 23 - Simulação 1 Ano	6	0	8,365.6 h	95%
SIM1Y-TMS-001 - TMS / LARS AKOPS Santos - Simulação 1 Ano	6	0	7,346.6 h	84%

STEP BY STEP — 1 open M5 Assets; 2 locate or register the asset; 3 review components, certificates, and history before changing its record.

7.2 Operating hours and lifecycle

Review equipment and component hours before interpreting service-life consumption. Estimated lifecycle values depend on accurate dates and operating records. Use them as planning support, not as an automatic condemnation rule.

7.3 Certificates

Certificates track calibration, inspection, compliance, warranty, or other controlled documents.

1. Select the equipment and component when applicable.
2. Enter certificate type, title, issuer, supplier, issue date, expiration date, alert window, criticality, and responsible person.
3. Indicate whether it is mandatory or required for external dispatch.
4. Attach the source document.
5. Review Valid, Near expiration, Expired, Missing attachment, and Pending attachment status calculations.

The Certificates PDF includes KPI counts, alert lists, validity timeline, consolidated records, and recent history. Filters and the active report template influence the export.

7.4 QR labels

Generate a QR label for the selected asset or supported target. Confirm the displayed code, target type, and payload before printing. A QR code points to identity; it does not grant permission or expose protected editing by itself.

7.5 External movement readiness

Before an asset or component leaves the company, verify required certificates and traceability. M8 may prevent or warn about dispatch when mandatory documentation is missing or expired.

8. M6 - Inventory

8.1 Item master

Create one record for each controlled stock item. Complete code, description, category, unit of measure, active status, minimum stock, average price, and physical location. Avoid creating duplicate items for spelling variations.

8.2 Stock movements

Every balance change must have a movement. Select the item, movement type, quantity, date, source, destination or location, related entity, and observation as required.

- Receipt increases available balance.
- Issue decreases balance and may be linked to a Work Order or other consumption.
- Return restores unused quantity.
- Adjustment corrects a verified discrepancy and should include a reason.
- Transfer changes location while preserving total controlled quantity.

Do not edit a balance directly to hide a missing movement. Use the proper adjustment with audit context.

8.3 Kardex

Kardex displays chronological movements and the resulting balance for one item. Use it to investigate discrepancies and verify Work Order or purchasing links. Export PDF produces the item statement for the selected period/context.

8.4 Inventory count

The inventory view compares registered items, status, balances, minimums, values, and locations. Apply filters before export. The Inventory PDF honors visible and renamed columns from the active template.

8.5 Reorder alerts

Alerts identify items at or below configured minimums and calculate a suggested quantity where available. Review open demand, lead time, criticality, and existing Purchase Requisitions before creating another request. Export PDF produces the current alert list.

8.6 M6 routine checks

- Review negative, zero, and below-minimum balances.
- Complete missing locations.
- Reconcile physical counts with Kardex.
- Link maintenance consumption to Work Orders.
- Avoid duplicate Purchase Requisitions for the same shortage.

9. M7 - Purchasing

9.1 Purchase Requisition lifecycle

A Purchase Requisition controls internal demand before purchasing.

1. Create a requisition and enter title, requester, cost center, priority, required date, and justification.
2. Add requested items with code/description, quantity, unit, and estimated values.
3. Link the originating Work Order or stock alert when applicable.
4. Save as Draft while information is incomplete.
5. Submit for approval when required fields and items are ready.
6. Authorized users approve, reject, return, or advance the request according to the workflow.
7. Maintain events and comments rather than replacing approval history.

9.2 Items and totals

Review item quantity, unit, estimated unit value, estimated total, and supplier context. The requisition total must match its line items. Free-text items should be used only when no controlled inventory item exists.

9.3 Custom fields

Company-specific purchasing fields can be configured and populated. Required fields must be completed before the relevant transition. Custom fields included in report templates appear in the Purchase Requisition PDF.

9.4 Approval and permissions

The ability to approve is separate from the ability to create or edit. A user should not approve a request solely because they can open it. Status, role, plan, and record state determine the available commands.

9.5 Purchase Requisition PDF

The PDF may include identification, items, approval, and extra fields. The report editor can rename or hide permitted columns, reorder content, add fields, apply branding, and position blocks. Locked identification, status, and mandatory traceability remain protected.

10. M8 - Manifests

10.1 Purpose

M8 controls external dispatch, transit, due dates, and return of assets, components, inventory items, or generic items. A manifest is the traceable container for the movement.

10.2 Creating a manifest

1. Create a manifest and confirm its generated number.
2. Enter origin, destination, responsible parties, reason, dates, carrier or transport context, and observations.
3. Add assets, components, stock items, or generic items with quantities and identity.
4. Verify certificate and documentation requirements.
5. Save as Draft until the content is complete.
6. Issue the manifest when the dispatch is authorized.

10.3 Status and return

Statuses distinguish draft, issued, in transit, received/returned, canceled, or other configured states. Record actual dispatch and return events. Do not mark an item returned when only part of the quantity or structure has returned.

10.4 QR and tracking

The manifest QR supports identification and tracking. Confirm that the selected manifest is issued and that the displayed payload matches the intended record. Locked or invalid QR state should be investigated before movement.

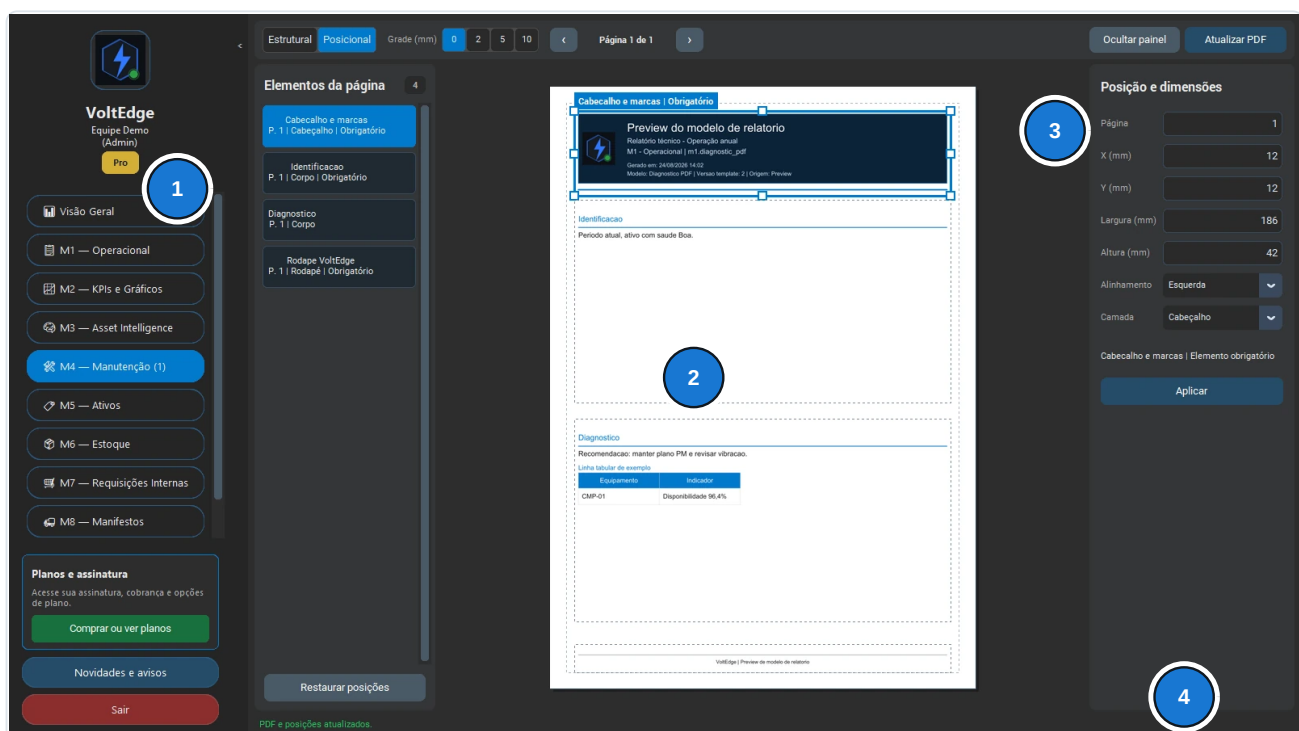
10.5 Manifest PDF

Export PDF includes identification, origin and destination, items, tracking, status, and available audit information. Company branding and the active M8 template are applied without removing the VoltEdge identity.

11. Report templates and PDF designer

11.1 Opening the editor

An authorized administrator opens Settings > Reports and visual identity > Edit templates. Select the module and report type. The editor covers all sixteen PDF types across M1 to M8.



STEP BY STEP — 1 select the report template; 2 position fields and variables on the canvas; 3 refresh the preview; 4 save only after reviewing the complete page.

11.2 Branding

The VoltEdge logo is fixed and cannot be removed. A company logo can be uploaded in Settings and enabled per template. Choose its supported side. Replacing the company logo does not delete the saved report template.

11.3 Typography and colors

Choose the supported font family, text size, text color, page background, header background, and accent color. Use the color selector or a valid hexadecimal color. Maintain sufficient contrast for printing and accessibility.

11.4 Sections

Sections control major report blocks. You can rename, reorder, show, or hide unlocked sections. Locked sections contain required identity or traceability and cannot be hidden.

11.5 Columns

Columns control supported tabular output. You can rename, reorder, align, size, or hide unlocked columns. Not every specialized narrative block is a column. Locked columns cannot be hidden.

11.6 Extra fields

Add a stable key, user-facing label, type, target section, order, default value, and required flag. Supported types include text, multiline text, number, date, and boolean. Use unique keys and place fields in an existing section.

11.7 Flow and positioned layouts

- Flow layout lets the PDF engine place content sequentially and is best for variable-length reports.
- Positioned layout places header, sections, and footer in defined A4 areas.

In the PDF Designer:

1. Select Positioned layout.
2. Choose a page and element from the left panel.
3. Drag the element or edit page, X, Y, width, and height.
4. Use grid snapping for consistent alignment.
5. Change alignment or layer when allowed.
6. Resize using the element handles.
7. Refresh PDF to render the real document.
8. Navigate pages and inspect overflow.
9. Restore positions or undo the restore when necessary.
10. Save the template only after checking the final preview.

Content that does not fit continues without silently losing data. Header and footer areas must be large enough for their content. The footer is kept on the final page when continuation pages are required.

11.8 Language behavior

System report labels follow the selected interface language. Company-entered names, descriptions, notes, and custom-field values remain in the language in which they were entered. This prevents VoltEdge from altering customer records.

12. Settings and administration

12.1 License

Review plan, status, expiration, and machine ID. License activation and replacement require permission. A read-only or expired state can disable write actions while retaining permitted viewing.

12.2 Database

SQLite is the default local database. Supported plans may configure MySQL or SQL Server. Test the connection and protect credentials. Database configuration affects the entire application and should be changed only with a verified backup and administrative authorization.

12.3 Interface preferences

Select language and theme, then save. Settings may request an application restart so every existing screen uses the new preference. The sign-in language selector applies immediately and is also persisted.

12.4 Users, roles, and permissions

Create users with the minimum permissions needed for their work. Separate view, create/edit, approve, export, settings, licensing, and user-management responsibilities. Disable accounts that should no longer sign in; do not reuse personal accounts.

Actions without permission remain disabled. Hover over a blocked action to read the permission that an administrator must grant. If an action is disabled because no record is selected or its status is incompatible, select a valid record or complete the prior workflow step before requesting access.

PERMISSIONS — 1 permitted actions remain available; 2 blocked actions do not run when clicked; 3 keep the pointer over a blocked action to read its required permission in the tooltip.

12.5 Operational company parameters

Configure OEE target, MTBF target, MTTR limit, backup policy metadata, and backup destination. These values support indicators and administration. A configured destination does not by itself execute a backup routine.

12.6 Reports and visual identity

Upload or replace the company logo and open the template editor. The company logo is optional; VoltEdge branding remains mandatory. Review templates after major version changes.

12.7 Catalogs

Catalogs provide controlled choices used by module forms. Before adding a value, search for an equivalent entry. Deactivate obsolete values only after understanding their use in historical records. Avoid creating spelling variants that split analytics.

12.8 Support and user manual

Use Open manual to read the bundled PDF or Save PDF copy to choose a destination. Both actions are also available under Preferences to every tier and role without an administrative permission. Use Contact support for assistance. Unexpected-error reports are sanitized before local storage and should be reviewed before sharing.

13. End-to-end workflows

13.1 Failure to completed maintenance

1. Record the failure in M1 with accurate dates and evidence.
2. Analyze and classify the event.
3. Create/link a corrective Work Order in M4.
4. Reserve or issue required parts through M6.
5. Create a Purchase Requisition in M7 when stock is insufficient.
6. Record execution in a Service Report.
7. Complete checklist and return unused parts.
8. Close the Work Order and then finalize failure treatment.
9. Review M2 indicators and M3 recurrence/risk after the data refresh.

13.2 Preventive work with parts

1. Maintain the PM plan and checklist in M4.
2. Review generated Work Orders.
3. Check required parts in M6.
4. Request shortages through M7.
5. Execute and document the work.
6. Update Service Report, checklist, stock movements, and next PM context.

13.3 External dispatch and return

1. Verify asset/component identity in M5.
2. Verify certificates and expiration requirements.
3. Create the manifest in M8.
4. Add controlled items and destination information.
5. Issue and export the manifest.
6. Track transit and due dates.

7. Record return/receipt and confirm quantities and identity.

13.4 Daily management cycle

1. Review Home priorities.
2. Complete the M1 Daily report for each operating context.
3. Review open failures and Work Orders.
4. Check PM due dates and certificate alerts.
5. Review below-minimum inventory and Purchase Requisitions awaiting action.
6. Check manifests in transit or overdue.
7. Refresh M2 and M3 after source data is complete.

14. Troubleshooting

14.1 A command is disabled

Check the selected record, record status, license tier, signed-in role, ownership restrictions, and required fields. Ask an administrator to review permissions rather than sharing credentials.

14.2 A report is missing information

Confirm the source record was saved, the correct template is active, the section is visible, the selected filters are correct, and the content did not continue to another page. Refresh the real PDF preview after template changes.

14.3 The selected language is not fully applied

The sign-in screen updates immediately. After changing language inside Settings, save and restart when prompted so cached module screens are rebuilt. Customer-entered text is intentionally not translated.

14.4 A KPI or chart is empty

Verify date range, equipment context, operating hours, failure dates, downtime, and production data. Check data-quality warnings. An empty result may be correct when the filtered period has no source records.

14.5 A stock balance looks incorrect

Open Kardex and trace each receipt, issue, return, transfer, and adjustment. Verify Work Order links and dates. Do not correct the result by deleting historical movements.

14.6 A PDF preview cannot be opened

Confirm PyMuPDF is included in the runtime, the temporary preview folder is writable, and security software is not locking the generated file. VoltEdge uses unique preview filenames to avoid Windows file-lock conflicts.

14.7 Database connection fails

Check backend, path or host, port, database name, credentials, driver, network access, and certificate settings. During normal operation, database changes require an administrator. Preserve the error report before changing configuration.

14.8 Getting support

Use Settings > Support > Contact support. Include the module, action, record identifier, time, expected result, actual result, and the sanitized error-report file when available. Never send passwords, private keys, database files, or unreviewed confidential attachments.

15. Glossary

- Asset: controlled equipment or physical object.
- Component: maintainable part installed within an asset hierarchy.
- Failure: operational event that affects or threatens intended function.
- Work Order: controlled authorization and execution record for maintenance.
- Service Report: evidence and result of work performed under a Work Order.
- PM: preventive maintenance.
- Availability: available operating proportion after downtime.
- MTBF: mean time between failures.
- MTTR: mean time to repair.
- OEE: overall equipment effectiveness.
- Asset Health Index: composite condition and performance indicator used by M3.
- Kardex: chronological stock-movement statement with resulting balances.
- Purchase Requisition: internal controlled request for purchasing.
- Manifest: controlled external dispatch, transit, and return record.
- Trace code: identifier used to correlate records and audit events.
- Report template: saved definition of branding, style, content, fields, and PDF layout.

16. Final operating principles

- Record facts at the source module once and link them elsewhere.
- Preserve history; use events, status transitions, and adjustments instead of rewriting the past.
- Keep equipment, item, and component codes stable.
- Validate dates and durations before relying on KPIs.
- Use role-based access instead of shared accounts.
- Preview reports before external distribution.
- Review backups and recovery procedures before database or version changes.
- Treat analytics and recommendations as decision support that requires technical judgment.