

AUTOMATION & DIGITALIZATION

15 APPLICATIONS FOR METRIS ASSET MANAGEMENT

PROACTIVE WAYS TO IDENTIFY ASSET RISKS AND ENSURE THEIR INTEGRITY



Streamlining Success: Enhancing Pulp and Paper Mill's Efficiency with 15 Metris Asset Management Applications

Welcome to this e-book presenting the Metris Asset Management applications. In the following pages, we will introduce you to 15 key applications that form the core of our product. Each of these applications is developed to address specific aspects of asset management, providing you with the tools you need to efficiently oversee and optimize your mill's processes.

This guide aims to offer a practical understanding of how these applications can benefit your asset management approach, whether you're an experienced professional or needing to increase your knowledge regarding this topic. We will also explore how these tools can enhance your workflow, offer valuable insights, and ultimately contribute to the success of your process optimization.

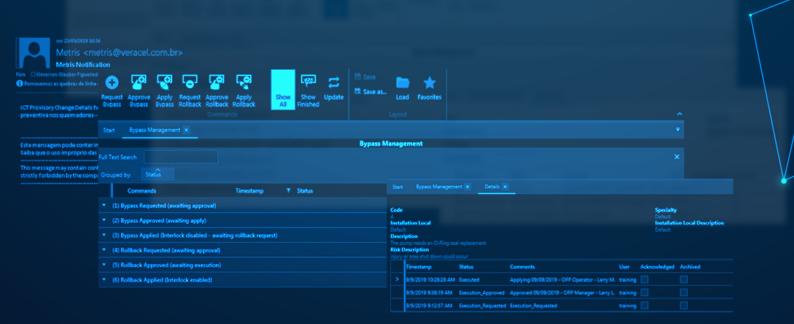
We invite you to dive into the following sections, where you will discover all the functionalities and potential benefits of each of these 15 apps.



BYPASS MANAGEMENT



The application to keep track of bypasses lifecycle from request to continuous monitoring, increasing and stabilizing mill safety condition.



Strategic objectives

- Safety and Compliance
- Risk Managment
- Asset Optimization

Features

- Track bypasses lifecycle
- Email notification
- Audit trail for compliance

- Guard personnel health and safety
- Manage risks
- Maximize situational awareness

Calibration Management



Allows the generation of calibration plans and certificates, schedule calibrations and allow instruments traceability.

Calibration	Management									
🕐 Update	Expiring Schedules	alibration Request 🔅 Configuration 🗸								
Schedule				Delayed C	alibrations					
			Planned	Description	Description		Edited By	Edited Timestamp s 1/18/2021 8:35:36 AM		
		0%	Umit Delayed	TESTE DE VALI	DAÇÃO 2	1/19/2021 8:19:50 AM Jefferson San				
				TRANSMISSOR	DE TEMPERATURA (TRANSMISS	OR 2/15/2021 12:00:00 AM	Jefferson Santos	2/10/2021 4:56:40 F		
				TRANSMISSOR	DE TEMPERATURA + SENSOR	2/16/2021 12:00:00 AM	Jefferson Santos	2/10/2021 4:55:39 F		
		100%		TRANSMISSOR DE NÍVEL ULTRASSÔNICO		9/8/2021 12:00:00 AM	Jefferson Santos	7/7/2021 2:29:09 PM		
				TRANSMISSOR	DE NÍVEL ULTRASSÔNICO	7/8/2021 12:00:00 AM	Jefferson Santos	6/15/2021 9:52:39 AM		
Expiring Schedules			Latest Calibrations	Latest Calibrations			Latest Instruments			
Full Text Search	Text Search		Full Text Search			Full Text Search				
Control Code	Planned	Maximum	Description	Edited By	Edited Timestamp	Control Code	Description			
PHIT3201/0	9/15/2023 12:00:00 AM	9/22/2023 12:00:00 AM	CONDUTIVIDADE 1,41 a 12,8 Ms/cm	Jefferson Santos	6/30/2021 9:32:39 AM	PI2951/2	MANÔMETRO ANALO	ÓGICO		
PHIT2270/0	9/19/2023 12:00:00 AM	9/26/2023 12:00:00 AM	CONDUTIVIDADE 25,07 - 83,83 µS/cm	Jefferson Santos	6/30/20219:32:40 AM	PIT3551/0	TRANSMISSOR DE PR	RESSÃO ABSOLUTA		
PHIT9161/2	9/19/2023 12:00:00 AM	9/26/2023 12:00:00 AM	CONDUTIVIDADE 4,98 - 9,99 µS/cm	Jefferson Santos	6/30/20219:32:40 AM	LIT2729/0	TRANSMISSOR DE NÍ	VEL		
	9/25/2023 12:00:00 AM	10/2/2023 12:00:00 AM	CONDUTIVIDADE 1,41 a 12,8 Ms/cm	Jefferson Santos	12/17/2021 10:08:49 AM	LIT2730/0	TRANSMISSOR DE NÍ	VEL		
PHIT2154/0	9/25/2023 12:00:00 AM	10/2/2023 12:00:00 AM	CONDUTIVIDADE 25,07 - 83,83 µS/cm	Jefferson Santos	12/17/2021 10:08:49 AM	LIT27 (BUG NO CADASTRO)	TRANSMISSOR DE NÍ	VEL		
PHIT2154/0 PHIT2157/0		10/2/2023 12:00:00 AM	CONDUTIVIDADE 25,07 - 85,85 µ5/cm					VE		
	9/18/2023 12:00:00 AM	10/2/2023 12:00:00 AM	CONDUTIVIDADE 2,07 - 83,83 µS/cm	Jefferson Santos	12/17/2021 10:08:51 AM	LIT2731/0	TRANSMISSOR DE NÍ			
PHIT2157/0	9/18/2023 12:00:00 AM 9/26/2023 12:00:00 AM			Jefferson Santos Jefferson Santos	12/17/2021 10:08:51 AM 12/7/2021 3:06:55 PM	LIT2731/0 FIT3580/0	TRANSMISSOR DE NÎ			
PHIT2157/0 TIT2750/5		10/2/2023 12:00:00 AM	CONDUTIVIDADE 4,98 - 999 µS/cm					NZÃO		
PHIT2157/0 TIT2750/5 PHIT1750/0	9/26/2023 12:00:00 AM	10/2/2023 12:00:00 AM 10/3/2023 12:00:00 AM	CONDUTIVIDADE 4,98 - 999 µS/cm CONDUTIVIDADE 1,41 a 12,8 Ms/cm	Jefferson Santos	12/7/2021 3:06:55 PM	FIT3580/0	TRANSMISSOR DE VA	NZÃO NZÃO MAGNÉTICO		

Strategic objectives

- Safety and Compliance
- Quality Control

4

Operational Efficiency

Features

- Creation of calibration plans
- Task scheduling
- Issuing calibration certificates

- Standardize enterprise best practices
- Ensure meeting standards
- Enhance accountability

Condition Monitoring



An application that monitor the condition of machines and systems. The primary goal of Condition Monitoring is to determine and relay the current condition of a system as well as to provide advanced detection or prediction of a fault and any possible damage.





Strategic objectives

- Asset Optimization
- Cost Reduction
- Risk Management

Features

- Real time monitoring
- Smart Diagnosis
- Integrated to mobile app

- Predictive Maintenance
- Manage Risks
- Maximize MTBF

Metris Vibe



Strategic objectives

- Digital Transformation
- Risk Management
- Cost Reduction

Features

- Triaxial vibration and temperature
- Long life battery
- Frequency range: 100 – 25.6 kHz

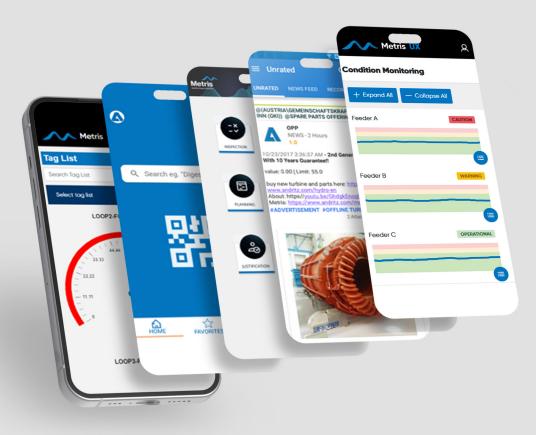
- Predictive Maintenance
- Manage Risks
- Maximize MTBF



Connected Worker



Enable mobility to operator and maintenance teams by providing hands-on information on the field and connecting to remote experts. It is the mobile of Data Analytics, Inspection, Planning, Work Permit, myEquipment and Logbook.



Strategic objectives

- Digital Transformation
- Data Security

Features

- Real-time information on the field
- Display equipment documentation

- Enable mobile worker efficiency
- Maximize engagement and productivity of personnel
- Minimize technician errors

Control Performance Assessment

Discovers unknown and hidden process upsets, prioritize saving opportunities and support users to achieve more practical and cheapest decision-taking.

ts 🗸 🛛 🖓 Filter 🕅 🖓 Layout 🗸 🕅 Cor **KPIs** Automatic Mode Time Ideal Mode Time Advanced Process Control 0.0% 66.7% 50.0% 100.0% Uno 3 / 6 Control Loops 4/6ControlLoops Normal Automatic Mode Time Normal Process Variable Variability Top Events Tag N 20 ± 23 ± 23 🛫 23 ± PID Loop 2 23 ∞ 23 ± n 4 (PV) 0

Strategic objectives

↓↑

- Operational Efficiency
- Risk Management
- Asset
 Optimization

Features

- Monitor control performance
- Log all events of control loop
- Capture real process behavior

Benefits

 Maximize process stability

ତ 🗘 🧐 – 🖻 ×

- Minimize process variability
- Drive consistency in product manufacturing

Control Valves



An application to enable users to monitor the performance of control valves and take preventive actions related to stiction, calibration, positioner overshooting, etc.

Control	Valves												
🖔 Update	Automatic	¶ Filter ≻ 🔅	Layout ~ Tag search	n Q	😫 Events 🗸	[]α[] KPIsΥ ξ	🖏 Configuratio	in Y					
Current St	tatus: Norma	al IAE						Normal: Normal IAE					
							SubArea	Alam	Alert	Ok	Inactive		
	Alarm		Alert			Ok		LAVAGEM DA POLPA MARROM	1 6	13.6%) 🚺 1 (2.3%)	37 (84.1%)	O (0.0%)	
								BRANQUEAMENTO ESTOCAGE	SM 3	2.8%) 🚺 0 (0.0%)	105 (97.2%)	O (0.0%)	
								PLANTA OZONIO		33.3%) 🚺 0 (0.0%)	18 (66.7%)	0 (0.0%)	(0.0%)
	2.8%	,	0.5%	$O E^{\circ}$		96.6%		EVAPORAÇÃO 3 (2.4 DESLIGNIFICAÇÃO 1 (1.3		2.6%)	110 (96.5%)		
	2.0/0	>	0.5%		70.0%					1.3%) 🚺 0 (0.0%)	78 (98.7%)		
								CALDEIRA RECUPERACAO	4	4.7%) 🚺 1 (1.2%)	81 (94.2%)	O (0.0%)	
								DEPURAÇÃO POLPA MARROM	10	2.1%)	45 (95.7%)	O (0.0%)	
	31 / 1094		5 / 1094		10	57 / 1094		ESTOCAGEM LICOR	10	.2%) 🚺 0 (0.0%)	81 (98.8%)	0 (0.0%)	
									=0	0.0%) = 1/0.7%)	750 (0079)	0 (0.0%)	
Normal: N	Normal: Normal Average Error			Normal: N	ormal IAE				Top Events				
	КРІ	Tag Name	Description	SubArea		KPI	Tag Name	Description	SubArea	Tag Name	Description	SubArea Events Type	• C
23 x	1000%	1219-LV-0458	Valvula de controle	PLANTA O	23 🛫	1000%	1214-FV-0317	7 Valvula de controle	LAVAGEM				
23 x	1000%	1219-LV-0622	Valvula de controle	PLANTA O	23 ±#	1000%	1214-PDV-04	425 Valvula de controle	LAVAGEM				
23 x	1000%	1219-PV-0661	Valvula de controle	PLANTA O	23 ±#	1000%	1216-TV-230	2 Valvula de controle	BRANQUE				
23 x	1000%	1511-HV3-0282	Valvula de controle	FORNO C	23 ±#	1000%	1423-FV-005	Valvula de controle	SISTEMA				
23 ±	304%	1423-FV-0092	Valvula de controle	SISTEMA T	20 🛫	856%	1423-HV-00	52 Valvula de controle	SISTEMA .				
23 ±	117%	1423-HV-0052	Valvula de controle	SISTEMA T	23 ±	755%	1511-HV3-02	82 Valvula de controle	FORNO C				

Strategic objectives

- Asset Optimization
- Cost Reduction
- Risk Management

Features

- Events detection and alerting based on position, setpoint and differential pressure
- History analysis
- Embedded trending and troubleshooting tool

- Maximize process stability
- Empowers decision making
- Maximize MTBF

Extended Reality



Receive remote assistance from our experts through smart glasses, cell phones or tablets at any location. It is an application-based service that combines audio, video, document exchange, text messages and AR technology in one call session.

Strategic objectives

- Digital Transformation
- Cost Reduction

10

Employee Development

Features

- Audio, video and AR-guided support
- Group calls
- iOS and Android support

- Maximize field visibility
- Respond to business constraints
- Enable mobile worker efficiency

Inspection



An app to create checklists for operational and maintenance inspection routes, use mobiles or tablets to perform the routes, trend measurement points and improve the connection between the boots-on-thefloor team with the backstage one.



Strategic objectives

- Digital Transformation
- Risk Management
- Lean Manufacturing

Features

- Mobile app (iOS or Android)
- Upload photos, videos and audio
- Measurement points compatibility
- Offline mode

- Maximize field visibility
- Enable mobile worker efficiency
- Minimize maintenance costs

Motors

A reliability tool to continuously analyze the electric motors process variables - current, power, speed, temperature, start/stops - and evaluate the likelihood of a breakdown.



Strategic objectives

- Asset Optimization
- Operational Efficiency
- Risk Management

Features

- Events detection and alerting based on motor current and status
- History analysis
- Embedded trending and troubleshooting tool

- Maximize MTBF
- Minimize maintenance costs
- Maximize situational awareness

My Equipment



My Equipment allows users to link process variables, tag names, pump curves, manuals, etc. to the equipment QR code/barcode, showing all this information to the users on the mobile/tablet screen.

Strategic objectives

- Digital Transformation
- Data Security
- Lean Manufacturing

Features

- Real-time information on the field
- Display equipment documentation
- Easy setupl

- Enable mobile worker efficiency
- Maximize engagement and productivity of personnel
- Minimize technician errors



ON-OFF Valves



On-Off Valves is an application to monitor the condition and reliable operation of on-off valves. It detects and notify problems like delay to open or close and sensor failures.

Metris All-	-in-one Platform									0 L 💿	- 8
illi OnOff V	alves Events > Historical ×										
1/1/2023 12:00	AM 🧮 🔂 1/7/2023 12:00 AM 📱	Custom 81-2.C V Never V	🖔 Update 🗄 Lay								
Tag	Description	Events Type	Events Group	Customer Process	Customer Area	Process	Area	SubArea			
XV-8181-2	XV-8181-2.C	OpenningOk		PROCESSO I	EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
XV-2954-2	XV-2954-2.C	ClosingOk		PROCESSO I	EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
XV-3281-2	XV-3281-2.C	ClosingOk			EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
XV-2954-2	XV-2954-2.C	OpenningOk			EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
XV-3281-2	XV-3281-2.C	OpenningOk			EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
	XV-2261-1.C	ClosingOk		PROCESSO I	EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
	XV-3281-2 XV-1551-2.C	SensorFailureWhileClosed		PROCESSO	EVAPORADOR LACTATO	PRODUÇÃO		Default Sub-Area			
	XV-8181-2 XV-2261-1.C	AV-8181-220 OpenningOk		PROCESSO I	EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
	XV-8181-2 XV-2954-2.C	XV-8181-2.C ClosingOk		PROCESSO	EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
	XV-2782-1 XV-3281-2.C					PRODUÇÃO	PRODUÇÃO	PRODUÇÃO Default Sub-Area	PRODUÇÃO		
XV-8181-2	XV-8181-2.C	ClosingOk	Openning(Ok	PROCESSO I	EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area	PRODUÇÃO	Default Sub-Area	
XV-8181-2	XV-2261-4 XV-8181-2.C	VV-2261-4/C OpenningOk			EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
XV-2782-1	XV-27782-1.C	XV-2775-17C ClosingOk			EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
XV-2261-3	XV-2586-1 XV-2586-1	XV-2586-1.C OpenningOk		PROCESSO I	EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
XV-2261-4	XV-1551-2	XV-1551-2.C ClosingOk			EVAPORADOR LACTATO	PRODUÇÃO		PRODUÇÃO Default Sub-Area			
XV-2773-17	XV-2773-17C	XV-2592-2.C SensorFailureWhileOpene		PROCESSO I	EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	PRODUÇÃO Default Sub-Area			
XV-2586-1	XV-2586-1.C	ClosingOk		PROCESSO	EVAPORADOR LACTATO	PRODUÇÃO	PRODUÇÃO	Default Sub-Area			
		crossigor									

Strategic objectives

- Asset Optimization
- Operational Efficiency
- Risk Management

Features

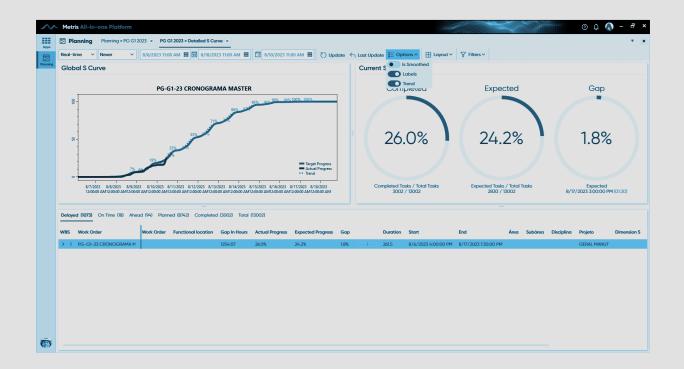
 Event generation based on signals from opened/closed sensor, command and time parameters

- Maximize process stability
- Empowers decision making
- Maximize MTBF

Planning

E

Planning is the tool to manage projects. It connects with the Checklist Mobile App so the customer can follow up the project status easily and without delays, improving the decision-making process.



Strategic objectives

- Digital Transformation
- Risk Management
- Asset Optimization

Features

- Work based calculations
- Predict project's end dates
- Integration with mobile application

- Cross-functional collaboration
- Enable mobile worker efficiency
- Maximize engagement and productivity of personnel

Risk Based Management



An application to enable maintenance management team to optimize the resource allocation, focusing them on the most value added tasks for the business.

		🔥 🖸 Update 🔚 Risk Composi	ition 🗠 🔠 Layout 🛩 📰 Be	O Tag search 🔬 Ther	vi 😼 🧏 Advanced 😰 Configuration	n 🛩 📑 Export 🗠					
~	Metris Al	II-in-one Platform							0 A 🧐	- 8 ×	
Apps	🔅 Risk B	ased Management Summary of A	ssets X								
	Update	Risk Composition > 🗄 Layout	Criticalit Details Details	h ﷺ Trend ∽ 😽 Advanc	ed total Configuration > ☐ Export >						
REM	Full Text Seam										
	Function	nal location Description	Criticality ame Risk Tag Desc	nipDays left KPI Risk (Max)	Risk Distribution Upda Proventive (Max)	Work Requests (Max)	Sensor Risk (Max)	Digital Risk (Max)	Work Order (Max)	Process (Ma	
	- Asset 5	Description of Asset 5	High Name 5 100% a Des	cription S 87 Very Low	012 012 0715/2023 Very Low AM	Very Low	Very Low	Very Low	Very Low	Very Low	
	Process 1	12% Motors 100%									
		Risk Tag Name	Tag Description KPI	Status Up	odated Variable Type						
		Very Low TagName 5	Tag Description 5 87.5%	Ok 9/	15/2023 4:50:00 AM						
	- Asset 1	Description of Asset 1	High ute Test 100% mi0	INICIADA Medium	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	
	Inspectio	on 14% Process 0% Motors 100%	Sensor Risk 0%								
		Risk Q Very Route	Item Route Statusaks	Days 🔿 Timestamp							
	R										
	R	Very Low O Mon Route	Noise Ok Vibration	21 Alert 8/25/2023 3:25:23 P	M 8/25/2023 3:25:25 PM						
	R	Very Low Route H			м						
	R	Very Low Route	Cleanliness Ok		м						
	R	Medium Route	scription of Asset 7 High Vibration Alert		Very Low						
	8.8	1 2 3 ▶ N Des									
			scription of Asset 8 Medium								
	+ Asset 7	+ Area Description of Asset 7 Area	na t <mark>ele High</mark> een <u>100%</u> en		Very Low	Very Low	Very Low		Very Low	Very Low	
	+ Asset 6	Description of Asset 6	serviceHigh asset / 100%	A6% Very Low	Very Low	Very Low	Very Low		Very Low	Very Low	
	+ Asset 8	Description of Asset 8	Medium 70%	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	
		Area 3 description	High 50%	Medium	Very Low	Very Low	Very Low	Very Low	Very Low		
1		Description of Asset 4	Low <u>46%</u>		Very Low	Very Low	Very Low	Very Low		Very Low	

Strategic objectives

- Risk Management
- Asset Optimization
- Cost Reduction

Features

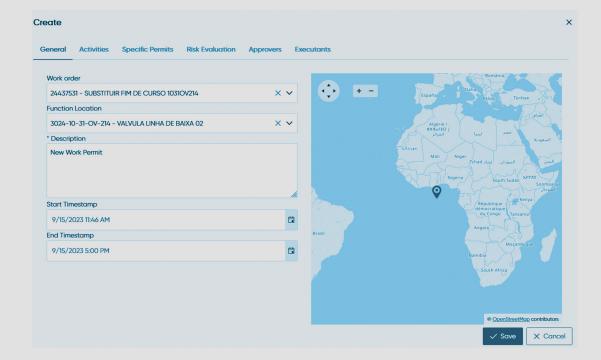
- Assets sorting by risk
- Work orders scheduling
- Troubleshooting tools
- 10+ risk groups available

- Cross-functional collaboration
- Data integration
- Maximize MTBF

Work Permit



Work Permit application is a digital solution to prevent, control and previously authorize the worker to perform an specific activities with potential risk or that may cause damage to employees or to the company.



Strategic objectives

- Safety and Compliace
- Digital Transformation
- Risk Management

Features

- Customizable permit types
- Risk evaluation
- Approval workflow

- Maximize situational awareness
- Guard personnel health and safety
- Manage risks



AFRICA

ANDRITZ Delkor (Pty) Ltd. p: +27 000 0000-0 business.area@andritz.com

ASIA

ANDRITZ Singapore Pte. Ltd. p: +65 000 0000-0 business.area@andritz.com

SOUTH AMERICA

ANDRITZ SEPARATION Ltda. p: +55 000 0000-0 business.area@andritz.com

EUROPE

ANDRITZ AG p: +43 000 0000-0 business.area@andritz.com

AUSTRALIA

ANDRITZ Pty. Ltd. p: +61 000 0000-0 business.area@andritz.com

CHINA

ANDRITZ (China) Ltd. p: +86 000 0000-0 business.area@andritz.com

NORTH AMERICA

ANDRITZ SEPARATION Inc. p: +1 000 0000-0 business.area@andritz.com



All data, information, statements, photographs and graphic illustrations in this leaflet are without any obligation and raise no liabilities to or form part of any sales contracts of ANDRITZ AG or any affiliates for equipment and/or systems referred to herein. © ANDRITZ AG 2023. All rights reserved. No part of this copyrighted work may be reproduced, modified or distributed in any form or by any means, or stored in any database or retrieval system, without the prior written permission of ANDRITZ AG or its affiliates. Any such unauthorized use for any purpose is a violation of the relevant copyright laws. ANDRITZ AG, Stattegger Strasse 18, 8045 Graz, Austria. Image brochure 1.1/10.2023 EN