MyDINO Data Collection Overview

Data Collection

- MyDINO collects data from each machine approximately every 2 minutes when the machine is used or transported. Data collected is stored in the cloud servers only. Each model series collects varying levels of data between 20-90 datapoints(Please see chart below), which can include the following:
    - All models
        - GPS location
        - Operating state and cumulative hours
        - Battery voltage
    - Additional insights
        - Operating condition (Transport/lift/working envelope)
        - Power source used
        - Fault codes
        - Usage statistics (Movement hours/loading levels)

Data Storage

- Data is collected to the cloud in almost real time, and data is collected even when the network connection is lost. Transmission returns when the network is reestablished.
- Data is not stored permanently or accessible from a machine. Data is stored in a cloud service and accessible for one year through a web portal. Stored data can be extracted from the portal in CSV format.

Owner Access

- Owner of the asset receives access to the web portal through the MyDINO registration process. Owners can create additional users, granting access to stored data for 3rd parties. MyDINO terms and conditions apply to the service. Privacy policy www.dinolift.com/privacy-policy

Trailer mounted telematics parameters

Description	Switch	UOM	105TL	120TL	120TLB	120T	120TB	135T-180T	135TB-180TB	160XT-210XT	160XTB-210XTB	230T	260XTD	185XTC	220XTC
Outrigger circuit	RK11-RK14	ON/OFF	X	X	X	X	X	X	X	X	X	X	X	X	X
Boom support	RK3	ON/OFF	X	X	X	X	X	X	X	X	X	X	X	X	X
Outreach limit	RK4	ON/OFF						X	X	X	X	X	X	X	X
Outreach exceeded	RK5	ON/OFF						X	X	X	X	X	X	X	X
Chain limit	RK7	ON/OFF							X	X	X	X	X	X	X
Chain limit	RK15	ON/OFF										X	X		X
Telescope in	RK8	ON/OFF						X	X	X	X	X	X	X	X
Boom up driving limit	RK6	ON/OFF												X	X
Boom up limit	RK20	ON/OFF												X	X
Outrigger 1 on ground	RK11	ON/OFF												X	X
Outrigger 2 on ground	RK12	ON/OFF												X	X
Outrigger 3 on ground	RK13	ON/OFF												X	X
Outrigger 4 on ground	RK14	ON/OFF												X	X
Boom up	NP	ON/OFF												X	X
Boom down	NV	ON/OFF												X	X
Telescope out	ZP	ON/OFF												X	X
Telescope in	ZV	ON/OFF												X	X
Scissors up	SP	ON/OFF												X	X
Scissors down	SV	ON/OFF												X	X
Rotation	V/O	ON/OFF												X	X
Boom Proportional valve A	PA	Scaled												X	X
Boom Proportional valve B	PB	Scaled												X	X
UCB joystick Left value	JSL	mV												X	X
UCB joystick Right value	JSR	mV												X	X
Chassis Proportional valve A	17	Scaled												X	X
Chassis Proportional valve B	18	Scaled												X	X
DCB joystick Left value	JSCL	mV												X	X
DCB joystick Right value	JSCR	mV												X	X
Chassis Level Y axis	LSM	Scaled												X	X
Chassis Level X axis	LSM	Scaled												X	X
Emergency stop	S1-S2	ON/OFF	X	X	X	X	X	X	X	X	X	X	X		
Emergency stop	S4	ON/OFF												X	X
Emergency stop	S2	ON/OFF												X	X
Emergency stop	S1	ON/OFF												X	X
Emergency stop	S3	ON/OFF												X	X
Emergency stop, E-stop grounding	S44	ON/OFF					X				X		X		
Electric motor active		ON/OFF	X	X	X	X	X	X	X	X	X	X	X	X	X
Compustion engine active		ON/OFF				X		X		X		X	X	X	X
Movement active		ON/OFF								X		X	X	X	X
Electric motor CO2		g/h	X	X	X	X	X	X	X	X	X	X	X	X	X
Combustion CO2		g/h				X		X		X		X	X	X	X
Electric motor kW/h		kW/h												X	X
Combustion l/h		l/h												X	X
GPS location data		lat, lon	X	X	X	X	X	X	X	X	X	X	X	X	X
Battery voltage		V	X	X	X	X	X	X	X	X	X	X	X	X	X
Ignition		ON/OFF	X	X	X	X	X	X	X	X	X	X	X	X	X
operating hours		h	X	X	X	X	X	X	X	X	X	X	X	X	X
Trackunit Standard functions															
Battery charging		ON/OFF					X		X		X			X	X
Battery low alarm		ON/OFF					X	X	X	X	X	X	X	X	X
Service notifications		Email	X	X	X	X	X	X	X	X	X	X	X	X	X
G-force information		m/s²	X	X	X	X	X	X	X	X	X	X	X	X	X
GPS data and geofencing		Email	X	X	X	X	X	X	X	X	X	X	X	X	X

Self-propelled telematics parameters

Description	Switch	UOM	Size	220RXT	280RXT	280RXTE	230VT	230VTH
Time the machine is moving while in aerial position	TIME_AerialMovement	hour		X	X	X	X	X
Scissor down time	TIME_SCISSOR_DwMove	hour		X	X	X		
Scissor lift activated	SCISSOR_JoystickValue			X	X	X		
Scissor up time	TIME_SCISSOR_UpMove	hour		X	X	X		
Battery system current	Actual Current	A				X		X
Battery current to the machine	BMS Pack current	A				X		X
BMS system states (ok or not ok)	BMS System state					X		X
State of charge in percent	BMS SoC	%				X		X
Battery management system, system health	BMS SoH	A%				X		X
Battery total voltage	BMS Total voltage	V				X		X
How much the boom is angled upwards	BOOM_ANGLE_ActualCh1	deg			X	X	X	X
How much the boom is angled upwards	BOOM_ANGLE_ActualCh2	deg			X	X	X	X
Time the boom is lowered?	TIME_BOOM_DwMove	hour		X	X	X	X	X
Boom movement	BOOM_JoystickValue			X	X	X	X	X
Time it has moved the boom up?	TIME_BOOM_UpMove	hour		X	X	X	X	X
Cage up/down angle?	CAGE_ANGLE_ActualCh1	deg					X	X
Cage up/down angle?	CAGE_ANGLE_ActualCh2	deg					X	X
Cage leveling	CAGE_LEV_JoystickValue			X	X	X	X	X
counter how many times cage load limiter has stopped the machine	COUNTER_CLOAD_Stop			X	X	X		
How long bas Cage load between 0-90%	TIME_CLOAD_Swl_0_90	hour		X	X	X		
Time cage load is between 100-120%	TIME_CLOAD_Swl_100_120	hour		X	X	X		
Time cage load is between 120-150%	TIME_CLOAD_Swl_120_150	hour		X	X	X		
Time cage load is between 90-100%	TIME_CLOAD_Swl_90_100	hour		X	X	X		
Cage to the sides angle	CAGE_ROT_ANGLE_Ch1_Actual	deg					X	X
Cage to the sides angle	CAGE_ROT_ANGLE_Ch2_Actual	deg					X	X
Cage rotation	CAGE_RO_JoystickValue						X	X
How level is the complete machine (x-axis)	CHASSIS_X1_ANGLE_Actual	deg		X	X	X	X	X
How level is the complete machine (x-axis)	CHASSIS_X2_ANGLE_Actual	deg		X	X	X	X	X
How level is the complete machine (y-axis)	CHASSIS_Y1_ANGLE_Actual	deg		X	X	X	X	X
How level is the complete machine (y-axis)	CHASSIS_Y2_ANGLE_Actual	deg		X	X	X	X	X
How many times has boom movement been stopped due to stability loss	COUNTER_STAB_LIM_Stop			X	X	X	X	X
Time diesel has been running	Total Engine running time	hour		X	X	X	X	X
Engine RPM (only Diesel)	Engine_RPM_Actual	rpm		X	X	X	X	X
Time the machine has been moving	TIME_DriveMovement	hour		X	X	X		
Time electric motor has been running	TIME_ELMOT_Running	hour		X	X	X		X
Counter of times emergency stop has been activated	COUNTER_Emergency			X	X	X	X	X
Error codes	FaultCode			X	X	X	X	X
Error codes	FaultCodeList00			X	X	X	X	X
Error codes	FaultCodeList01			X	X	X	X	X
Error codes	FaultCodeList02			X	X	X	X	X
Engine running but no movement	TIME_partialSeconds	hour		X	X	X	X	X
Seconds the machine has been powered on (unknown about engine status)	TIME_totalSeconds	hour		X	X	X	X	X
Time the last section of the boom is moved	TIME_JIB_DwMove	hour		X	X	X		
Jib is the last section that can be lifted up and down	JIB_JoystickValue			X	X	X		
Time spent Jip moving it up	TIME_JIB_UpMove	hour		X	X	X		
Lifting cylinder upper side (retracting)	TP1H_Actual	bar		X	X	X	X	X
Lifting cylinder upper side (retracting)	TP2H_Actual	bar		X	X	X	X	X
Lifting cylinder lower side (extending)	TP1L_Actual	bar		X	X	X	X	X
Lifting cylinder lower side (extending)	TP2L_Actual	bar		X	X	X	X	X
Pressure difference in lifting cylinder between upper and lower side	PDIFF1_Actual	bar		X	X	X	X	X
Pressure difference in lifting cylinder between upper and lower side	PDIFF2_Actual	bar		X	X	X	X	X
Steering oscilating axil angle	STEERING_OSC_Actual	deg		X	X	X		
How long has the machine been between 0-90% outreach	TIME_LMI_Swl_0_90	hour		X	X	X	X	X
How many times the outreach limit system has stopped them Machine	COUNTER_LMI_Stop				X	X	X	X
How long has the outreach been between 100-120%	TIME_LMI_Swl_100_120	hour			X	X	X	X
How long has the outreach been between 120-150%	TIME_LMI_Swl_120_150	hour			X	X	X	X
How long has the outreach been between 90-100%	TIME_LMI_Swl_90_100	hour			X	X	X	X
Time spent moving outriggers up and down	TIME_StabMovement	hour		X	X	X	X	X
Platform load cell actual value	MRW_Ch1_Actual	kg		X	X	X		
Platform load cell actual value	MRW_Ch2_Actual	kg		X	X	X		
How long has either electric or diesel been running	TIME_Running	hour		X	X	X	X	X
Steering rigid is permanently fixed (not able to move)	STEERING_RIG_Actual			X	X	X		
Battery between 0 and 20%	TIME_BMS_STATUS_SoC_0_20	hour				X		X
Battery between 20 and 40%	TIME_BMS_STATUS_SoC_20_40	hour				X		X
Battery level	TIME_BMS_STATUS_SoC_40_60	hour				X		X
Battery level	TIME_BMS_STATUS_SoC_60_80	hour				X		X
Battery level	TIME_BMS_STATUS_SoC_80_100	hour				X		X
Time telescope is moving in	TIME_TELE_InMove	hour		X	X	X	X	X
Boom is telescoped out	BOOMTELE_JoystickValue			X	X	X	X	X

Self-propelled telematics parameters

Description	Switch	UOM	Size	220RXT	280RXT	280RXTE	230VT	230VTH
How long has the machine been between 0-90% telescope length	TIME_LMI_Length_Swl_0_90	hour			X	X	X	X
How long the telescope is operating between 100-120% (very overloaded)	TIME_LMI_Length_Swl_100_120	hour			X	X	X	X
How long the telescope is operating between 120-150% (overloaded)	TIME_LMI_Length_Swl_120_150	hour			X	X	X	X
How long the telescope is operating between 90-100%	TIME_LMI_Length_Swl_90_100	hour			X	X	X	X
Difference between this and Telescope out length?	BOOM_LENGHT_Ch1_Actual	mm			X	X	X	X
Difference between this and Telescope out length?	BOOM_LENGHT_Ch2_Actual	mm			X	X	X	X
Time telescope is moving out?	TIME_TELE_OutMove	hour		X	X	X	X	X
Rotator angle (angle to sides)	ROT_ANGLE_Ch1_Actual	deg					X	X
Rotator angle (angle to sides)	ROT_ANGLE_Ch2_Actual	deg					X	X
Time it has moved cloclwise?	TIME_RO_CwMove	hour		X	X	X	X	X
Time it has moved counter clockwise?	TIME_RO_CcwMove	hour		X	X	X	X	X
Rotating the machine	RO_JoystickValue			X	X	X	X	X
Outrigger 1 down (RK11)		ON/OFF		X	X	X	X	X
Outrigger 2 down (RK12)		ON/OFF		X	X	X	X	X
Outrigger 3 down (RK13)		ON/OFF		X	X	X	X	X
Outrigger 4 down (RK14)		ON/OFF		X	X	X	X	X
Outrigger 1 up (RK21)		ON/OFF					X	X
Outrigger 2 up (RK22)		ON/OFF					X	X
Outrigger 3 up (RK23)		ON/OFF					X	X
Outrigger 4 up (RK24)		ON/OFF					X	X
Outrigger 1 wide (RK31)		ON/OFF					X	X
Outrigger 2 wide (RK32)		ON/OFF					X	X
Outrigger 3 wide (RK33)		ON/OFF					X	X
Outrigger 4 wide (RK34)		ON/OFF					X	X
Outrigger 1 narrow (RK41)		ON/OFF					X	X
Outrigger 2 narrow (RK42)		ON/OFF					X	X
Outrigger 3 narrow (RK43)		ON/OFF					X	X
Outrigger 4 narrow (RK44)		ON/OFF					X	X
Front axle wheels up (RK51)		ON/OFF					X	X
Rear axle right wheel up (RK53)		ON/OFF					X	X
Rear axle left wheel up (RK54)		ON/OFF					X	X
Boom on support (RK3)		ON/OFF		X	X	X	X	X
Turret rotated towards rigid axle (S1)		ON/OFF		X	X	X		
Turret rotated towards oscillating axle (S2)		ON/OFF		X	X	X		