LAFERTGROUP
Member of Sumitomo Drive Technologies

BATTERY-POWERED SOLUTIONS

LOW VOLTAGE BRUSHLESS SERVO MOTORS AND BATTERY POWERED DRIVES

BROCHURE 2026

MAIN ADVANTAGES OF BATTERY-POWERED SOLUTIONS

- **Integrated motor + drive + cabling package**
- **48–96 Vdc battery-powered architecture**
- Carefully controllable **start and stop ramps (S-curve)**
- Reduced energy consumption thanks to **Permanent Magnet efficiency**
- Compact design for space-constrained mobile platform
- Safety features:
  Safe Torque Off (STO): SIL3-Ple, Safe Brake Control (SBC): SIL3PLe

INTEGRATED ARCHITECTURE FOR BATTERY-POWERED MOBILITY

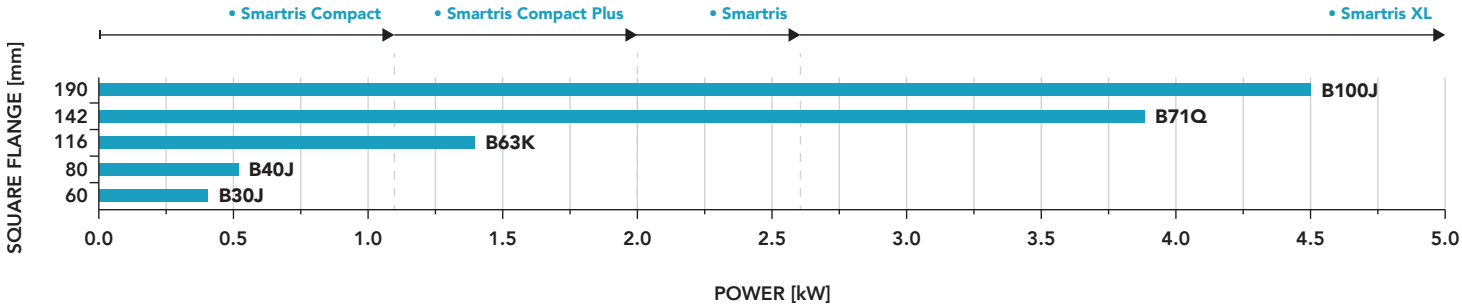
Battery-Powered Solutions are engineered for industrial equipment powered by onboard batteries, where energy efficiency, compact integration and controlled motion are essential.

The system integrates three core elements into a coordinated architecture:

- **Low-voltage Permanent Magnet AC Brushless Servo Motor (48–96 Volt, high current)**
- **Dedicated battery-powered Servo Drive – Smartris**
- **Optimized connection and cabling configuration**

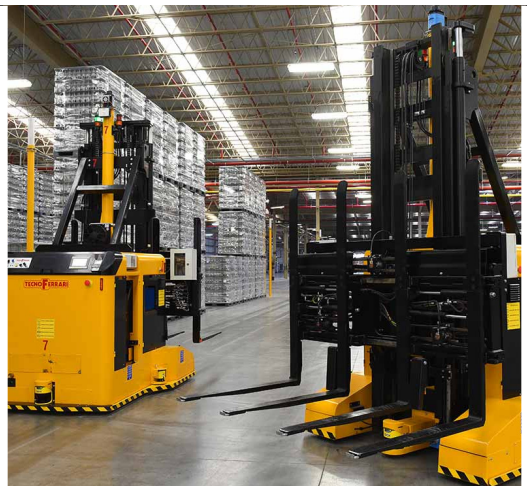
This integrated design ensures compatibility between motor and drive, simplifying selection and commissioning while delivering optimized motion performance.

RANGE OVERVIEW



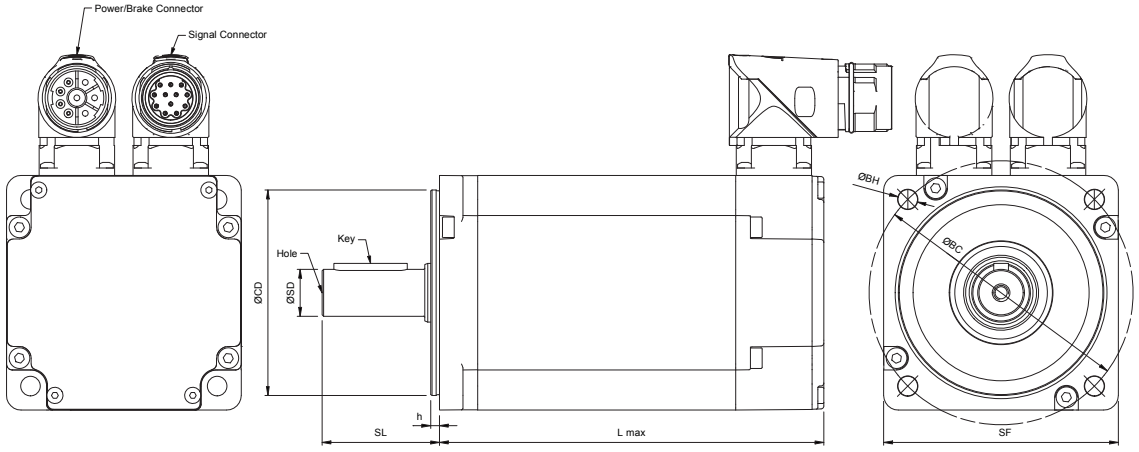
TARGET APPLICATIONS

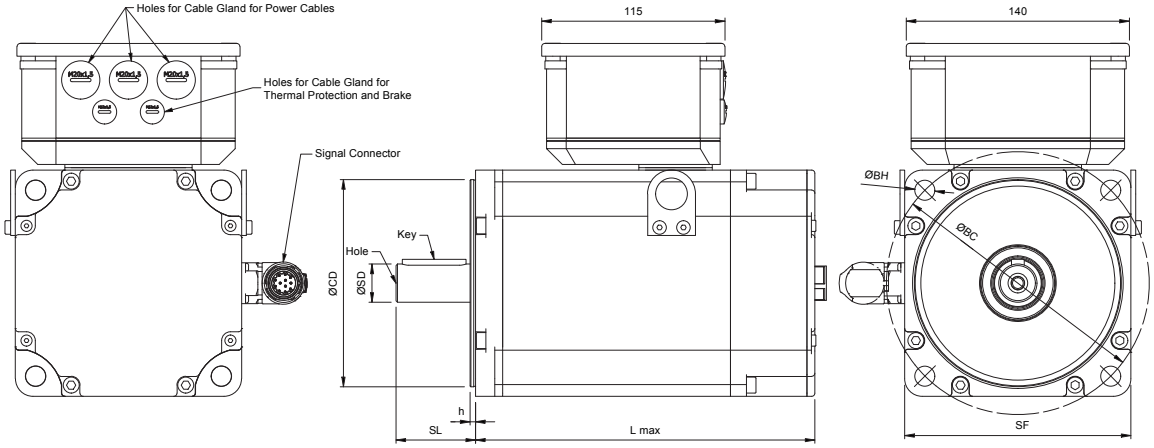
Material Handling & Intralogistics
Industrial Automation
Hydraulic Systems
Industrial Cleaning & Utility Equipment
Food & Beverage
Packaging
Paper
Ceramics



- Automated Guided Vehicles (AGV)
- Autonomous Mobile Robots (AMR)
- Laser Guided Vehicles (LGV)
- Vertical AGVs for automated warehouses
- Forklifts
- Automated forklifts
- Lift trucks
- Traction systems
- Steering systems
- Drive wheels applications

CONNECTORS DESIGN





TERMINAL BOX DESIGN

Type	Square flange [mm]	Torque [Nm]	Rated speed [rpm]	Centring diameter ø - CDxh [mm]	Bolt circle diameter ø - BC [mm]	Shaft diameter ø - SD [mm]	Shaft length [mm]	Shaft key [mm]	Shaft hole [mm]
B30J	60	0.7 to 1.4	2000-3000-4000-6000	50h7x3	70	14h6	25/30	5x5x20	M5x12
B40J	80	1.4 to 2.7	2000-4500	70h7x3	90	16h6	35/40	5x5x12	M5x12
B63K	116	4 to 6	1500-2500-4000	110j6x3	130	19j6	40	6x6x32	M6 DIN332-D
B71Q	142	4 to 20	2000-2500-3000-4500	130j6x3.5	165	24j6	50	8x7x40	M8 DIN332-D
B100J	190	20 to 42	1000-1500-2500	180j6x4	215	32k6	58	10x8x45	M12 DIN332-D

BRAKE DATA

	Symbol	B30J	B40J	B63K	B71Q	B100J	Unit Nm
Holding torque 100°C	Mrb	2.1	3.2	17	33	60	Nm
Voltage	Urb	24	24	24	24	24	Vdc ±10%
Resistance	Rbr	70.6	53.2	30.8	24	28.3	Ohm
Electrical Power	Pbr	8.2	10.8	18.7	24	20.4	W
Current	Ibr	0.34	0.45	0.78	1	0.85	Adc
Additional* rotor inertia	Jbr	0.07	0.4	3.7	10.1	32.7	$Kgcm^2$
Opening (release) time	to max	30	60	75	110	155	ms
Closing (fall in) time	tc mac	15	10	25	70	65	ms

* Additional values are related to motor data when the brake is mounted on the motor of the respective size. These values differ from the brake data in unmounted condition. The brakes are intended to be used only as a parking device.

ELECTRICAL DATA FOR MAINS VOLTAGE 48 VDC

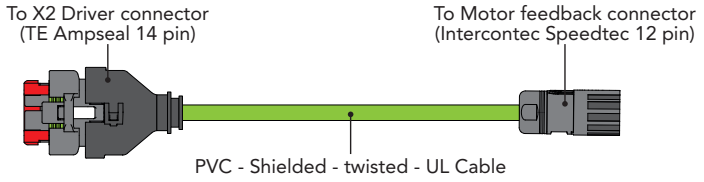
Possible solutions available at 96Vdc

Type	Stall torque (Δt=105°C)	Rated speed	Output rated power	Rated torque (Δt=105°C)	Voltage costant	Stall Current	Rated Current	Power connector	Length with resolver		Max length with encoder Sick*	
									Without brake L	With brake L	Without brake L	With brake L
	M_o Nm	n rpm	P_n W	Mn Nm	K_e Vs	I_o Arms	I_o Arms		mm	mm	mm	mm
B30D7J	0.7	6000	377	0.60	0.04	10.1	8.7	Y-tec	90.5	117.5	114	141
B30D7J	0.7	4000	264	0.63	0.06	6.7	6.1	Y-tec	90.5	117.5	114	141
B30E4J	1.4	3000	399	1.27	0.08	10.1	9.2	Y-tec	111	138	134.5	161.5
B30E4J	1.4	2000	276	1.32	0.12	6.7	6.4	Y-tec	111	138	134.5	161.5
B40E4J	1.4	4500	518	1.1	0.05	15.2	11.9	M23	108.5	138.5	131.5	161.5
B40F7J	2.7	2000	524	2.5	0.12	13.0	12.0	M23	131	161	154	184
B6304K	4	2500	969	3.7	0.10	24.1	22.3	M23	168	204.5	168	204.5
B6304K	4	4000	1424	3.4	0.06	38.5	32.7	TB	168	204.5	168	204.5
B6306K	6	1500	911	5.8	0.16	21.7	20.9	M23	183	219.5	183	219.5
B6306K	6	2500	1440	5.5	0.10	36.1	33.1	TB	183	219.5	183	219.5
B7104Q	4	4500	1838	3.9	0.05	43.3	42.2	TB	188	223	188	223
B7108Q	8	4500	3440	7.3	0.05	86.6	79.0	TB	213	243	213	243
B7112Q	12	3000	3644	11.6	0.08	86.6	83.7	TB	238	268	238	268
B7116Q	16	2500	3691	14.1	0.10	96.2	84.8	TB	263	288	263	288
B7120Q	20	2000	3875	18.5	0.12	96.2	89.0	TB	288	313	288	313
B1020J	20	2500	4503	17.2	0.10	120.3	103.4	TB	233.5	263.5	233.5	263.5
B1028J	28	1500	4037	25.7	0.16	101.0	92.7	TB	256	286	256	286
B1036J	36	1000	3424	32.7	0.24	86.6	78.7	TB	278.5	308.5	278.5	308.5
B1042J	42	1000	4084	39.0	0.24	101.0	93.8	TB	301	331	301	331

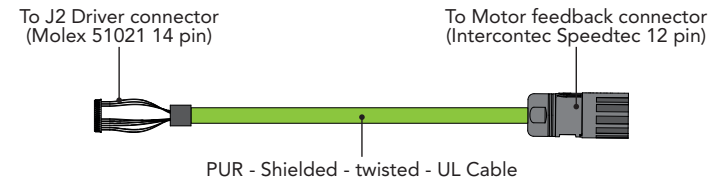
* Encoder Type (Sick): Encoder EKS36 – EKM36 – EES37 – EEM37; Encoder SKS36S – SKM36S - safety execution

FEEDBACK CABLES

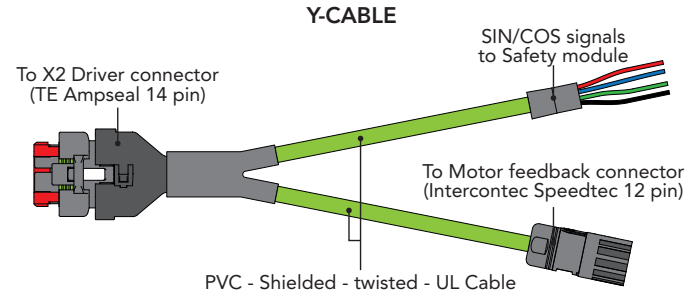
FOR SMARTRIS DRIVE



FOR SMARTRIS COMPACT DRIVE



Y-CABLE



Feedback cables connect motor transducer directly to our Smartris Drives.

Main Features:

- Insulating material: PVC/PUR
- Shielded and Twisted in pair
- Extra flexible

Y-cable is meant to split our safety encoder Sin/Cos signals both to our drive and Safety module in order to achieve highest safety level without using any additional encoder in the vehicle.

BATTERY POWERED DRIVES | RANGE OVERVIEW

	Smartris Compact	NEW Smartris Compact Plus
SUPPLY (V)	48	48
CURRENT (A_{RMS})	26/96	46/140
DIMENSION (mm)	120x92x36	130x100x36
IP GRADE	IP20	IP20

	Smartris	NEW Smartris XL
SUPPLY (V)	48/96	48/96
CURRENT (A_{RMS})	60/180 @48V 20/60 @96V	200/400 @48V 120/240 @96V
DIMENSION (mm)	186x116x84	206x136x84
IP GRADE	IP54	IP54

BATTERY POWERED DRIVES | MAIN SPECIFICATIONS

MOTOR TRANSDUCER	SK Sin/Cos (Single Turn, MultiTurn) SAFETY - Resolver
FIELDBUS	ModBUS RTU, CANOpen (DS402), EtherCAT (CoE)
CONTROL MODE	Torque, Speed (S-Ramp Profile or Trapezoidal Profile), Position
BRAKE MANAGEMENT	Manual or Automatic
AUXILIARY POWER SUPPLY FOR CONTROL	$24V_{DC}$ or $48V_{DC}$
DIGITAL OUTPUT	4 Optical Isolated Output (@24V – 100 mA)
DIGITAL INPUT	4 Optical Isolated Input (@24V – 7mA NPN or PNP type)
ANALOG INPUT	1 Analog Input ± 10V or Singled Ended 0-10V (10 KΩ)
ANALOG OUTPUT	1 Analog Output 0-10V RLOAD ≥ 1K Ω
SAFETY FEATURES	STO (SiL3 – Ple), SBC (SiL3 – PLe on Compact Plus & XL)
OPTIONS	HeatSink available
IP GRADE	IP20 – IP54
CERTIFICATIONS	CE, UL, KC

CE UL KC Modbus EtherCAT CANopen PROFINET

USER TOOL FOR COMMISSIONING

The SmartrisApp can:

- set parameter user friendly
- generate CANOpen and/or Modbus commands to be implemented in master
- measure real time values
- read diagnostic error
- move the motor with bench test
- upload/download file parameters and firmware

smartris TOOLS

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