

Cleco | Tame the Line

Intelligent BTi Spindle System



 **HERMES**
TOOLS



Rapid Fault Recovery

Advanced IntelliArmed™ Error Management System facilitates rapid fault recovery diagnostics.

Simplicity

Patented daisy-chain cables, spindles with on-board servo, and system modularity enables simple set up without compromising productivity.

Rapid System Restart

Upon unexpected interruptions, system can restart within ~40 seconds.

Smaller System Footprint

On-board servo, daisy-chain cable, and modular compact controller combine to deliver reduced footprint.

Lower Total Cost of Ownership

Costs are reduced due to simple set up, single cable design, system modularity, and ability for rapid line rebalancing and ease of future upgrades

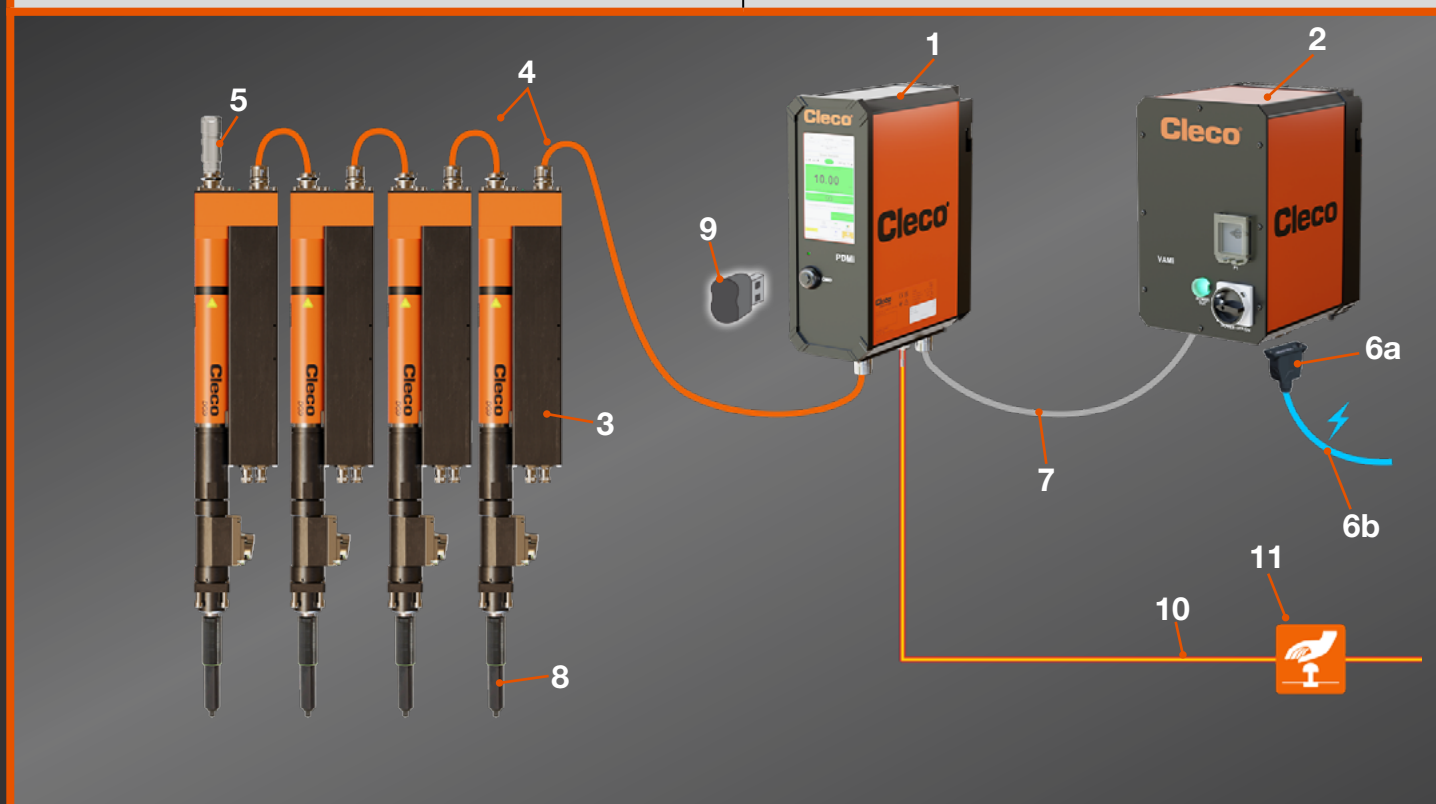
ENGINEERED SOLUTIONS

Our automated systems group provides turnkey solutions to meet your tightening requirements. Available resources include engineering, project management, installation support, service and training.

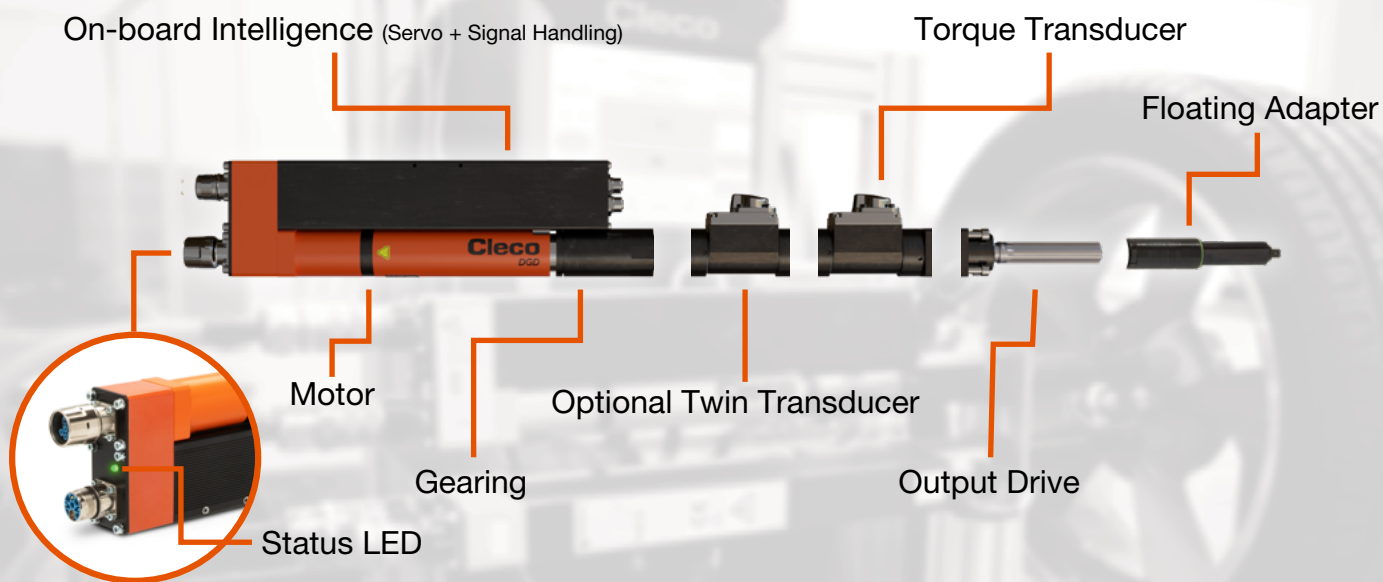


BTi System Architecture

1. PDMi (Power Distribution Module)	6b. Power supply cable (by customer)
2. VAMi (Voltage Adjusting Module)	7. Power cable VAMi to PDMi
3. Fixtured spindle	8. Spindle drive adapter
4. Spindle system cable	9. Software
5. Termination plug system bus BTi	10. STO cable
6a. Power cable housing	11. Emergency stop STO signal



INTELLIGENT SPINDLE FOR YOUR APPLICATION



SPINDLE SELECTION GUIDE

<i>Example</i>	1	BID	53	T1	S	—	A
	X	XXXX	XXXX	X	X		X
Size			Maximum Torque (Nm)				Revision
1 - 2-53 Nm			12, 53, 110, 2800...				A, B, C...
2 - 11-200 Nm							
3 - 30-300 Nm							
4 - 50-2800 Nm							
Motor with servoamplifier & measurement card			Transducer			Output Drive	
B - Brushless Motor			T1 - Single		S - Straight	O - Offset	
I - intelliArmed			T2 - Twin		A - Angle		
D - Digital							
U - Reversible gear							

Note: Floating spindle adapter must be ordered separately.



PATENTED

- Industry-first daisy chain system
- Industry-first compact on-board intelligence
- Wide variety of spindle sizes and configurations
- Twin transducer for higher accuracy by torque and angle monitoring

POWER CONTROL PACKAGE WITH INTELLIARMED™

This advanced, two-module system features components designed for easy and efficient installation.

Controller **PDMi** (Power Distribution Module)



- TSNet system Bus
- 7" color display with touch function
- Rapid start-up <40 ms after reset of emergency stop
- IP 42
- TÜV certified STO (Safe torque off)
- AnyBus® fieldbus modules available
- PROFI-safe
- Energy Save



Controller Bottom

VAMi (Voltage Adjusting Module)



- Module converts the mains voltage (3-phase) to a supply voltage (3-phase) of 3× 270 VAC for the PDMi.
- Energy save function (stand by mode). Power loss is reduced by approximately 10 watts per fixtured spindle in standby mode.
- Main switch, circuit breaker and status light on front.
- IP54
- CE



VAMi Bottom

Maximum number of fixtured spindles per system

The number can vary depending on the demands of the application.

System	Maximum number of fixtured spindles				Max. number of strings
	1BID(U)-(…)	2BID(U)-(…)	3BID(U)-(…)	4BID(U)-(…)	
1x VAMi(E) + 1x PDMi(…)	16	6	6	6	1
1x VAMi(E)-3S + 3x PDMi(…)	16	6	6	6	3

STRAIGHT DRIVE, SIZES 1-4 - SINGLE TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BID12T1S-A	2 - 12	3317	3/8"	50	43	485	4.8	922325PT	S308434
1BID35T1S-A	3.5 - 35	1255	3/8"	50	43	485	4.8	922325PT	S308434
1BID53T1S-A	5.3 - 53	737	3/8"	50	43	485	4.8	922325PT	S308434
2BID110T1S-A	11 - 110	890	1/2"	50	56	528	7.6	910609	S308435
2BID200T1S-A	20 - 200	501	3/4"	50	56	528	7.6	935552	S308450
3BID300T1S-A	30 - 300	480	3/4"	50	81	589	14.1	910613	S308436
4BID500T1S-A	50 - 500	269	3/4"	50	91	719	21	916643	-
4BID660T1S-A	66 - 660	183	1"	50	91	719	21	916642	-
4BID1250T1S-A	320 - 1250	91	1"	50	121	771	29	S976956	-
4BID1600T1S-A	400 - 1600	72	1 1/2"	50	121	771	29	S308441	-
4BID2800T1S-A	980 - 2800	39	1 1/2"	-	160	790	36.5	-	-

ANGLE DRIVE, SIZES 1-4 - SINGLE TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BID12T1A-A	2 - 12	3110	3/8"	25	52	542	5.7	-	929041
1BID35T1A-A	3.5 - 35	1176	3/8"	25	52	542	5.7	-	929041
1BID53T1A-A	5.3 - 53	691	3/8"	25	52	542	5.7	-	929041
2BID110T1A-A	11 - 110	837	1/2"	25	59	581	8.7	-	929053
2BID200T1A-A	20 - 200	472	3/4"	25	59	581	8.7	-	929061
3BID300T1A-A	30 - 300	462	3/4"	25	81	679	17.8	-	929065
4BID500T1A-A	50 - 500	259	1"	25	112	726	27.1	-	929089
4BID660T1A-A	66 - 660	177	1"	25	112	726	27.1	-	929089

OFFSET DRIVE, SIZES 1-4 - SINGLE TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BID12T10-A	2 - 12	3151	3/8"	50	35	468	5.3	922325PT	S308437
1BID35T10-A	3.5 - 35	1192	3/8"	50	35	468	5.3	922325PT	S308437
1BID53T10-A	5.3 - 53	700	3/8"	50	35	468	5.3	922325PT	S308437
2BID110T10-A	11 - 110	830	1/2"	50	44	551	9.2	910609	S308438
2BID200T10-A	20 - 200	468	3/4"	50	44	551	9.2	935552	S308475
3BID300T10-A	30 - 300	445	3/4"	50	59	585	15.2	910613	S308439
4BID500T10-A	50 - 500	252	3/4"	50	76	683	22.5	912106	S308440
4BID660T10-A	66 - 660	172	1"	50	76	683	22.5	912147	S308474
4BID750T10-A	75 - 750	143	1"	50	76	683	21	912147	S308474

STRAIGHT DRIVE, SIZES 1-4 - TWIN TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BID12T2S-A	2 - 12	3317	3/8"	50	43	565	5.4	922325PT	S308434
1BID35T2S-A	3.5 - 35	1255	3/8"	50	43	565	5.4	922325PT	S308434
1BID53T2S-A	5.3 - 53	737	3/8"	50	43	565	5.4	922325PT	S308434
2BID110T2S-A	11 - 110	890	1/2"	50	56	624	8.7	910609	S308435
2BID200T2S-A	20 - 200	501	3/4"	50	56	624	8.7	935552	S308450
3BID300T2S-A	30 - 300	480	3/4"	50	81	701	16.2	910613	S308436
4BID500T2S-A	50 - 500	269	3/4"	50	91	846	24	916643	-
4BID660T2S-A	66 - 660	183	1"	50	91	846	24	916642	-
4BID1250T2S-A	320 - 1250	91	1"	50	121	899	32	S976956	-
4BID1600T2S-A	400 - 1600	72	1 1/2"	50	121	899	32	S308441	-
4BID2800T2S-A	980 - 2800	39	1 1/2"	50	160	862	38.5	-	-

ANGLE DRIVE, SIZES 1-4 - TWIN TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BID12T2A-A	2 - 12	3110	3/8"	25	52	621	6.3	-	929041
1BID35T2A-A	3.5 - 35	1176	3/8"	25	52	621	6.3	-	929041
1BID53T2A-A	5.3 - 53	691	3/8"	25	52	621	6.3	-	929041
2BID110T2A-A	11 - 110	837	1/2"	25	59	678	9.8	-	929053
2BID200T2A-A	20 - 200	472	3/4"	25	59	678	9.8	-	929061
3BID300T2A-A	30 - 300	462	3/4"	25	81	790	19.9	-	929065
4BID500T2A-A	50 - 500	259	1"	25	112	856	30.1	-	929089
4BID660T2A-A	66 - 660	177	1"	25	112	856	30.1	-	929089

OFFSET DRIVE, SIZES 1-4 - TWIN TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BID12T20-A	2 - 12	3151	3/8"	50	35	553	5.9	922325PT	S308437
1BID35T20-A	3.5 - 35	1192	3/8"	50	35	553	5.9	922325PT	S308437
1BID53T20-A	5.3 - 53	700	3/8"	50	35	553	5.9	922325PT	S308437
2BID110T20-A	11 - 110	830	1/2"	50	44	648	10.3	910609	S308438
2BID200T20-A	20 - 200	468	3/4"	50	44	648	10.3	935552	S308475
3BID300T20-A	30 - 300	445	3/4"	50	59	696	17.3	910613	S308439
4BID500T20-A	50 - 500	252	3/4"	50	76	811	25.5	912106	S308440
4BID660T20-A	66 - 660	172	1"	50	76	811	25.5	912147	S308474
4BID750T20-A	75 - 750	143	1"	50	76	811	25.5	912147	S308474

* Floating Adapters sold separately

STRAIGHT DRIVE WITH REVERSIBLE GEARS, SIZES 1-4 - SINGLE TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BIDU12T1S-A	2 - 12	3317	3/8"	50	43	345	5.3	922325PT	S308434
1BIDU35T1S-A	3.5 - 35	1255	3/8"	50	43	345	5.3	922325PT	S308434
1BIDU53T1S-A	5.3 - 53	737	3/8"	50	43	345	5.3	922325PT	S308434
2BIDU110T1S-A	11 - 110	890	1/2"	50	56	321	8.6	910609	S308435
2BIDU200T1S-A	20 - 200	501	3/4"	50	56	321	8.6	935552	S308450
3BIDU300T1S-A	30 - 300	480	3/4"	50	81	386	16.1	910613	S308436
4BIDU500T1S-A	50 - 500	269	3/4"	50	91	515	22.5	916643	-
4BIDU660T1S-A	66 - 660	183	1"	50	91	515	22.5	916642	-
4BIDU1250T1S-A	320 - 1250	91	1"	50	121	568	31	S976956	-
4BIDU1600T1S-A	400 - 1600	72	1 1/2"	50	121	568	31	S308441	-
4BIDU2800T1S-A	980 - 2800	39	1 1/2"	-	160	587	40	-	-

ANGLE DRIVE WITH REVERSIBLE GEARS, SIZES 1-4 - SINGLE TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BIDU12T1A-A	2 - 12	3110	3/8"	25	52	321	6.2	-	929041
1BIDU35T1A-A	3.5 - 35	1176	3/8"	25	52	321	6.2	-	929041
1BIDU53T1A-A	5.3 - 53	691	3/8"	25	52	323	6.2	-	929041
2BIDU110T1A-A	11 - 110	837	1/2"	25	59	374	9.7	-	929053
2BIDU200T1A-A	20 - 200	472	3/4"	25	59	374	9.7	-	929061
3BIDU300T1A-A	30 - 300	462	3/4"	25	81	475	19.8	-	929065
4BIDU500T1A-A	50 - 500	259	1"	25	112	525	27.1	-	929089
4BIDU660T1A-A	66 - 660	177	1"	25	112	525	28.7	-	929089

OFFSET DRIVE WITH REVERSIBLE GEARS, SIZES 1-4 - SINGLE TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BIDU12T10-A	2 - 12	3151	3/8"	50	35	332	5.8	922325PT	S308437
1BIDU35T10-A	3.5 - 35	1192	3/8"	50	35	332	5.8	922325PT	S308437
1BIDU53T10-A	5.3 - 53	700	3/8"	50	35	334	5.8	922325PT	S308437
2BIDU110T10-A	11 - 110	830	1/2"	50	44	345	9.2	910609	S308438
2BIDU200T10-A	20 - 200	468	3/4"	50	44	345	9.2	935552	S308475
3BIDU300T10-A	30 - 300	445	3/4"	50	59	381	17.2	910613	S308439
4BIDU500T10-A	50 - 500	252	3/4"	50	76	480	24	912106	S308440
4BIDU660T10-A	66 - 660	172	1"	50	76	480	24	912147	S308474
4BIDU750T10-A	75 - 750	143	1"	50	76	480	24.5	912147	S308474

* Floating Adapters sold separately

STRAIGHT DRIVE WITH REVERSIBLE GEARS, SIZES 1-4 - TWIN TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BIDU12T2S-A	2 - 12	3317	3/8"	50	43	345	5.9	922325PT	S308434
1BIDU35T2S-A	3.5 - 35	1255	3/8"	50	43	345	5.9	922325PT	S308434
1BIDU53T2S-A	5.3 - 53	737	3/8"	50	43	347	5.9	922325PT	S308434
2BIDU110T2S-A	11 - 110	890	1/2"	50	56	418	9.7	910609	S308435
2BIDU200T2S-A	20 - 200	501	3/4"	50	56	418	9.7	935552	S308450
3BIDU300T2S-A	30 - 300	480	3/4"	50	81	500	18.2	910613	S308436
4BIDU500T2S-A	50 - 500	269	3/4"	50	91	643	25.5	916643	-
4BIDU660T2S-A	66 - 660	183	1"	50	91	643	25.5	916642	-
4BIDU1250T2S-A	320 - 1250	91	1"	50	121	695	34	S976956	-
4BIDU1600T2S-A	400 - 1600	72	1 1/2"	50	121	695	34	S308441	-
4BIDU2800T2S-A	980 - 2800	39	1 1/2"	-	160	714	41.5	-	-

ANGLE DRIVE WITH REVERSIBLE GEARS, SIZES 1-4 - TWIN TRANSDUCER



Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BIDU12T2A-A	2 - 12	3110	3/8"	25	52	401	6.8	-	929041
1BIDU35T2A-A	3.5 - 35	1176	3/8"	25	52	401	6.8	-	929041
1BIDU53T2A-A	5.3 - 53	691	3/8"	25	52	403	6.8	-	929041
2BIDU110T2A-A	11 - 110	837	1/2"	25	59	473	10.6	-	929053
2BIDU200T2A-A	20 - 200	472	3/4"	25	59	473	10.6	-	929061
3BIDU300T2A-A	30 - 300	462	3/4"	25	81	587	21.9	-	929065
4BIDU500T2A-A	50 - 500	259	1"	25	112	653	30.1	-	929089
4BIDU660T2A-A	66 - 660	177	1"	25	112	653	31.7	-	929089

OFFSET DRIVE WITH REVERSIBLE GEARS, SIZES 1-4 - TWIN TRANSDUCER

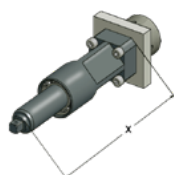


Model	Torque Range (Nm)	Max Speed (r/min)	Square Drive	Float (mm)	Min. Center to Center (mm)	Length (mm)	Weight (kg)	Floating Adapter*	Floating Adapter w/ Guide Housing*
1BIDU12T2O-A	2 - 12	3151	3/8"	50	35	332	6.4	922325PT	S308437
1BIDU35T2O-A	3.5 - 35	1192	3/8"	50	35	332	6.4	922325PT	S308437
1BIDU53T2O-A	5.3 - 53	700	3/8"	50	35	334	6.4	922325PT	S308437
2BIDU110T2O-A	11 - 110	830	1/2"	50	44	441	10.3	910609	S308438
2BIDU200T2O-A	20 - 200	468	3/4"	50	44	441	10.3	935552	S308475
3BIDU300T2O-A	30 - 300	445	3/4"	50	59	493	19.3	910613	S308439
4BIDU500T2O-A	50 - 500	252	3/4"	50	76	607	27	912106	S308440
4BIDU660T2O-A	66 - 660	172	1"	50	76	607	27	912147	S308474
4BIDU750T2O-A	75 - 750	143	1"	50	76	607	27.5	912147	S308474

FLOATING DRIVE ADAPTER



In-line and offset



In-line and offset
with guide housing



Angle drive adapter



CONTROLLER PDMi POWER DISTRIBUTION MODULE

Model	Description
PDMi	Power Distribution Module - intelliARMED
PDMiE	Power Distribution Module + Energy Save
PDMiS	Power Distribution Module + STO via PROFIsafe
PDMiSE	Power Distribution Module + Energy save + PROFIsafe



VAMi VOLTAGE ADJUSTMENT MODULE

Model	Description
VAMi-400	Voltage adjustment module intelliArmed - 400 VAC
VAMi-440	Voltage adjustment module intelliArmed - 440 VAC
VAMi-480	Voltage adjustment module intelliArmed - 480 VAC
VAMiE-400	Voltage adjustment module intelliArmed + Energy save - 400 VAC
VAMiE-440	Voltage adjustment module intelliArmed + Energy save - 440 VAC
VAMiE-480	Voltage adjustment module intelliArmed + Energy save - 480 VAC
VAMi-3S-400	Voltage adjustment module intelliArmed - 400 VAC - 3 Strings
VAMi-3S-440	Voltage adjustment module intelliArmed - 440 VAC - 3 Strings
VAMi-3S-480	Voltage adjustment module intelliArmed - 480 VAC - 3 Strings
VAMiE-3S-400	Voltage adjustment module intelliArmed + Energy save - 400 VAC - 3 Strings
VAMiE-3S-440	Voltage adjustment module intelliArmed + Energy save - 440 VAC - 3 Strings
VAMiE-3S-480	Voltage adjustment module intelliArmed + Energy save - 480 VAC - 3 Strings

SYSTEM INTERFACE CABLES & ACCESSORIES

Name	Model Number (Replace X with desired length)*	Available Length (m)
------	--	-------------------------

SYSTEM CABLES



Cable BTI Type A straight-straight	962600-XXX	0.5 - 40
Cable BTI Type F straight-90°	962602-XXX	0.5 - 30
Cable BTI Type E 90°-90°	962603-XXX	0.5 - 4
Cable BTI Type L 180°-straight	962604-XXX	0.5 - 5
Cable BTI Type H straight-180°	962605-XXX	0.5 - 25
Cable BTI Type G 180°-180°	962606-XXX	0.5 - 5

CABLES FOR SYSTEM STRUCTURE



Power Cable VAMi to PDMi	962620-XXX	0.5 - 30
Energy System Function Cable 24V In	962621-XXX	0.3 - 25
TSNet Cable	962037-XXX	0.2 - 60
Jumper STO Cable	961924-XXX	0.2 - 60
Fieldbus Cable	Provided by Customer	0.5 - 30

*To select the correct cable length, replace the "XXX" in the model number with the desired length in meters, formatted as a three-digit code.

(e.g., 0.5 m = 005, 1 m = 010, 10 meters = 100)

ACCESSORIES



Power Cable Housing with Ceiling Insert	962582PT, 962581PT, 962690PT	
Termination Plug System Bus BTi	962609PT	
Terminal Connector STO	961893PT	
USB Port Blocker	962738PT	
Cable Holder	944676PT	
Software Bundle USB	SWB-BTSW300	
Fieldbus Modules	Available Upon Request	
Power Utility Cable	Provided by Customer	

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