

**Annexure – I**

**List of Items**

Sl. No	Description of item/equipment including detailed specifications and summary	Make	Qty
1.	Hmi;4PPC70.0702-20W;C70	B&R Make	1 No.
2.	CommunicationModule;PowerLink;X20BC0083;		1 No.
3.	CommunciationModule;PowerSupplyModule;24V;X20PS9400;		1 No.
4.	BaseModule;X20BB80;		1 No.
5	TerminalBlock;X20TB12;		6 Nos.
6	IOModule;Digital;16Inputs;X20DIF371;		5 Nos.
7	IOModule;Digital;16Outputs;X20DOF322;		3 Nos.
8	BaseModule;X20BM11;		13 Nos.
9	TerminalBlock;X20TB1F;		8 Nos.
10	IOModule;Analog;4Outputs;X20AO4622;		1 No.
11	CommunicationModule;DSPModule;24V;X20DS1319;		4 Nos.
12	Motor;Servo;8LSA46.DB030S100-3;2419W;7.7NM;4.7A;3000RPM		2 Nos.
13	Drive;AcoposMulti;11.19Kw;7.6A;DualAxes;8BVI0055HWD0.000-1;		1 No.
14	InterfaceModule;8BAC0120.001-2;MultiPlug-In-Module		5 Nos.
15	StandardCables;8BCH0007.1111A-0;7Mtr;InterfaceCable		2 Nos.
16	StandardCables;8BCH0003.1111A-0;3Mtr;InterfaceCable		1 No.
17	Motor;Servo;3000rpm;2.7Nm;1.9A;848W;8LSA36.DB030S000-3		2 Nos.
19	Drive;Acoposmulti;8BVI0014HWD0.000-1		1 No.
20	StandardCables;8BCH0005.1111A-0;5Mtr;InterfaceCable		2 Nos.
21	Motor;Servo;327W;0.52Nm;0.71A;6000Rpm;8LSA25.D9060S100-3;		1 No.
22	Drive;AcoposMulti;1.4kW;1.9A;SingleAxes;8BVI0014HWS0.000-1;-		1 No.
23	StandardCables;X20CA0E61.00020;PowerLink;RJ45		4 Nos.
24	StandardCables;X20CA0E61.00500;PowerLink;RJ45		2 Nos.
25	Tools;0TG1000.02;TechnologyGuard(HID)		1 No.
26	Tools;1TG8CNC0000.01-01;PathControlForCNC		1 No.
25	PowerSupply;ACOPOSMulti;500VAC;22A;8B0P0220HW00.001-1		1 No.
27	PowerSupply;8B0C0160HW00.000-1;750VAC;16A		1 No.
28	MachineAccessories;8B0M0070HW00.000-1;Mtg Plate with back plane;HV		1 No.
29	Choke;AcoposMulti;22A;8BVR0220H000.100-1		1 No.
30	LineFilter;Passive;3Phase;30A;520V;8B0F0300H000.000-1;		1 No.
31	MachineAccessories;8BZ0P044000.000-1A;Screw Clamp		1 No.
32	MachineAccessories;8BZ0C032000.000-1A;Screw Clamp		1 No.
33	PanelAccessories;8BZVI0055S0.000-1A;Screw Clamp		1 No.
34	MachineAccessories;8BZVI0055D0.000-1A;Screw Clamp		2 Nos.

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## Annexure II

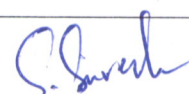
### Detailed Technical specification

Make: B & R

Sl. No	Technical Specifications
1	Hmi;4PPC70.0702-20W;C70 <ul style="list-style-type: none"><li>• Power Panel C70, 7.0", landscape format.</li><li>• CPU and memory: Intel Atom 333 MHz (compatible), 256 MB DDRAM, 32 kB FRAM, 2 GB onboard flash drive.</li><li>• Display and touch screen: 7.0", 800 x 480 (WVGA) resolution, analog resistive touch screen, landscape format, aluminum white pinstripe.</li><li>• Interfaces: 1x POWERLINK, 1x Ethernet 10/100 Mbit/s, 1x X2X Link, 2x USB 2.0.</li></ul>
2	<b>CommunicationModule;PowerLink;X20BC0083;</b> <ul style="list-style-type: none"><li>• POWERLINK</li><li>• I/O configuration and firmware update via the field bus</li><li>• Integrated hub for economical wiring</li></ul>
3	<b>CommunciationModule;PowerSupplyModule;24V;X20PS9400;</b> <ul style="list-style-type: none"><li>• Supply for the bus controller, X2X Link and internal I/O supply</li><li>• Feed and bus controller / X2X Link supply electrically isolated</li><li>• Redundancy of bus controller / X2X Link supply possible by operating multiple supply modules simultaneously</li><li>• Service interface (RS232)</li></ul>
4	<b>BaseModule;X20BB80;</b> <ul style="list-style-type: none"><li>• Bus base</li></ul> The following modules are used on the bus module: <ul style="list-style-type: none"><li>• Base module (BC, HB, etc.)</li><li>• Supply module</li></ul>
5	<b>TerminalBlock;X20TB12;</b> <ul style="list-style-type: none"><li>• Tool-free wiring with push-in technology</li><li>• Simple wire release using lever</li><li>• Ability to label each terminal</li><li>• Plain text labeling also possible</li><li>• Test access for standard probes</li><li>• Can be customer-coded</li></ul>
6	<b>IOModule;Digital;16Inputs;X20DIF371;</b> <ul style="list-style-type: none"><li>• 16 digital inputs</li><li>• Sink connection</li><li>• 1-wire connections</li><li>• Software input filter can be configured for entire module</li></ul>
7	<b>IOModule;Digital;16Outputs;X20DOF322;</b> <ul style="list-style-type: none"><li>• 16 digital outputs</li><li>• Source connection</li><li>• 1-wire connections</li><li>• Integrated output protection</li></ul>
8	<b>BaseModule;X20BM11;</b> <ul style="list-style-type: none"><li>• Bus module for 24 VDC I/O modules</li></ul>

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	<ul style="list-style-type: none"> <li>The internal I/O power supply is connected through.</li> </ul>
9	<b>TerminalBlock;X20TB1F;</b> <ul style="list-style-type: none"> <li>Tool-free wiring with push-in technology</li> <li>Simple wire release using a screwdriver</li> <li>Ability to label each terminal</li> <li>Plain text labeling also possible</li> <li>Test access for standard probes</li> <li>Can be customer-coded</li> </ul>
10	<b>IOModule;Analog;4Outputs;X20AO4622;</b> <ul style="list-style-type: none"> <li>4 analog outputs</li> <li>Either current or voltage signal possible</li> <li>13-bit digital converter resolution</li> </ul>
11	<b>CommunicationModule;DSPModule;24V;X20DS1319;</b> <ul style="list-style-type: none"> <li>4 digital input channels</li> <li>4 digital channels, configurable as inputs or outputs</li> <li>1 universal counter pair (2 event counters, AB counters or up/down counters)</li> <li>Linear movement generator (A/B, direction/frequency) with up to 2 reference pulses</li> <li>SSI absolute encoder</li> <li>NetTime timestamp: Input data, target position, position change, edge change, counter change</li> </ul>
12	<b>Motor;Servo;8LSA46.DB030S100-3;2419W;7.7NM;4.7A;3000RPM</b> <ul style="list-style-type: none"> <li>Synchronous motor, number of pole pairs: 5 pairs, nominal speed: 3000 rpm stall torque: 10.000 Nm, without brake, shaft key, single-cable solution angled (swivel), centering diameter 95 mm, j6 fit self-cooling, type A construction, IP64 protection, without oil seal, 560 VDC, holding torque of brake: 0.00 Nm, DB 2.2 ind. 32-line multi-turn.</li> </ul>
13	<b>Drive;AcosposMulti;11.19Kw;7.6A;DualAxes;8BVI0055HWD0.000-1;</b> <ul style="list-style-type: none"> <li>Integrated uncontrolled standstill and safe stop</li> <li>Integrated connection for motor holding brake and temperature sensor</li> <li>2 slots for ACOPOS multi plug-in modules</li> <li>Two fully independent power inverters in one inverter module contained in 2-axis modules</li> <li>ACOPOS multi inverter module, 7.6 A, AS, wall mounting, 2 axes</li> </ul>
14	<b>InterfaceModule;8BAC0120.001-2;MultiPlug-In-Module</b> <ul style="list-style-type: none"> <li>EnDat 2.2 encoder interface for installation in ACOPOS multi modules</li> <li>Encoder monitoring</li> <li>Embedded parameter chip when used with B&amp;R motors</li> </ul>
15	<b>StandardCables;8BCH0007.1111A-0;7Mtr;InterfaceCable</b> <ul style="list-style-type: none"> <li>Can be used in cable drag chains</li> <li>Motor and encoder wires in one cable</li> <li>Assembled specifically for use with ACOPOS multi drive systems and B&amp;R servo motors with option "Single-cable solution (hybrid)"</li> <li>speedtec - Innovative connector system for secure connections</li> <li>Integrated shield plate</li> </ul>
16	<b>StandardCables;8BCH0003.1111A-0;3Mtr;InterfaceCable</b> <ul style="list-style-type: none"> <li>Can be used in cable drag chains</li> </ul>



	<ul style="list-style-type: none"> <li>• Motor and encoder wires in one cable</li> <li>• Assembled specifically for use with ACOPOS multi drive systems and B&amp;R servo motors with option "Single-cable solution (hybrid)"</li> <li>• speedtec - Innovative connector system for secure connections</li> <li>• Integrated shield plate</li> </ul>
17	<b>Motor;Servo;3000rpm;2.7Nm;1.9A;848W;8LSA36.DB030S000-3</b>
18	<b>Drive;Acoposmulti;8BVI0014HWD0.000-1</b> <ul style="list-style-type: none"> <li>• Uncontrolled stops and safe stop integrated</li> <li>• Integrated connection for motor motor holding brake and temperature sensor</li> <li>• 2 slots for ACOPOS multi plug-in modules</li> <li>• Double axis modules contain two complete standalone inverters in an inverter module</li> </ul>
19	<b>StandardCables;8BCH0005.1111A-0;5Mtr;InterfaceCable</b> <ul style="list-style-type: none"> <li>• UL/CSA certified</li> <li>• Can be used in cable drag chains</li> <li>• Motor and encoder lines in one cable</li> <li>• Assembled specifically for use with ACOPOS multi drive systems and B&amp;R servo motors with option "Single-cable solution (hybrid)"</li> <li>• Speed tec - Innovative connector system for secure connections</li> <li>• Integrated shield plate</li> </ul>
20	<b>Motor;Servo;327W;0.52Nm;0.71A;6000Rpm;8LSA25.D9060S100-3;</b> Synchronous motor, number of pole pairs: 4 pairs, nominal speed: 6000 rpm stall torque: 0.600 Nm, without brake, shaft key, single-cable solution angled (swivel), centering diameter 40 mm, j6 fit self-cooling, type A construction, IP64 protection, without oil seal, 560 VDC, holding torque of brake: 0.00 Nm, D9 2.2 ind. multi-turn.
21	<b>Drive;AcoposMulti;1.4kW;1.9A;SingleAxes;8BVI0014HWS0.000-1;-</b> <ul style="list-style-type: none"> <li>• Integrated uncontrolled standstill and safe stop</li> <li>• Integrated connection for motor holding brake and temperature sensor</li> <li>• 2 slots for ACOPOS multi plug-in modules</li> </ul>
22	<b>StandardCables;X20CA0E61.00020;PowerLink;RJ45</b> POWERLINK/Ethernet connection cable, RJ45 to RJ45, 0.2 m
23	<b>StandardCables;X20CA0E61.00500;PowerLink;RJ45</b> POWERLINK/Ethernet connection cable, RJ45 to RJ45, 5 m
24	<b>Tools; 0TG1000.02;TechnologyGuard(HID)</b> Technology Guard (HID)
25	<b>Tools;1TG8CNC0000.01-01;PathControlForCNC</b> <ul style="list-style-type: none"> <li>• Path control for one CNC or robotic channel with up to 9 axes.</li> <li>• Configurable syntax interpreter for CNC programs in accordance with DIN/ISO 66025 as well as robotics programs based on ST, macros, subroutines, step-by-step processing, etc.</li> <li>• Various interpolation types (point-to-point, rapid, linear, circular, spline, etc.), tool data correction, workspace monitoring, automatic tangential axes handling, dynamic look-ahead for movement profiles with optimal contour precision, restart functions.</li> <li>• Export approval required, ECCN:2D002</li> </ul>
26	<b>PowerSupply;ACOPOSMulti;500VAC;22A;8BOP0220HW00.001-1</b> <ul style="list-style-type: none"> <li>• Wide input voltage range</li> </ul>

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	<ul style="list-style-type: none"> <li>• Integrated connection for external braking resistor</li> <li>• Passive motor short circuit brake</li> </ul>
27	<p><b>PowerSupply;8B0C0160HW00.000-1;750VAC;16A</b></p> <ul style="list-style-type: none"> <li>• Extensive protective measures</li> </ul> <p>ACOPOS multi auxiliary supply module, 16 A, AS, wall mounting</p>
28	<p><b>MachineAccessories;8B0M0070HW00.000-1;Mtg Plate with back plane; HV</b></p> <ul style="list-style-type: none"> <li>• Pioneering power distribution system</li> <li>• Integrated distribution of power and auxiliary power supply</li> <li>• Shockproof</li> <li>• Option slots possible</li> <li>• ACOPOS multi mounting plate with backplane, 7 slots, AS, wall mounting, 75 mm<sup>2</sup> and 22 mm<sup>2</sup>, complete</li> </ul>
29	<p><b>Choke;AcoposMulti;22A;8BVR0220H000.100-1</b></p> <ul style="list-style-type: none"> <li>• Connection for temperature sensor</li> <li>• Optimally suited for ACOPOS multi 8BVP power supply modules</li> <li>• ACOPOS multi regeneration choke, 22.5 A, 480 V, terminal blocks</li> </ul>
30	<p><b>LineFilter;Passive;3Phase;30A;520V;8B0F0300H000.000-1;</b></p> <ul style="list-style-type: none"> <li>• Wide mains input voltage range</li> <li>• Optimally suited for ACOPOS multi 8B0P power supply modules</li> <li>• Compliance with limit values per CISPR11, group 2, class A</li> <li>• Line filter, passive, 30 A, 3x 520 VAC, 50/60 Hz, IP20</li> </ul>
31	<p><b>MachineAccessories;8BZ0P044000.000-1A;Screw Clamp</b></p> <ul style="list-style-type: none"> <li>• Screw clamp terminal block set for ACOPOS multi 8B0P0220Hx00.00x-1 and 8B0P0440Hx00.00x-1 modules: 1x 8TB4104.202L-10, 1x 8TB4103.202A-00, 1x 8TB2106.2010-00</li> </ul>
32	<p><b>MachineAccessories;8BZ0C032000.000-1A;Screw Clamp</b></p> <ul style="list-style-type: none"> <li>• Screw clamp terminal block set for ACOPOS multi 8B0C0xx0Hx00.000-1 modules: 1x 8TB2106.2010-00</li> </ul>
33	<p><b>PanelAccessories;8BZVI0055S0.000-1A;Screw Clamp</b></p> <ul style="list-style-type: none"> <li>• Screw clamp terminal block set for ACOPOS multi 8BVI00xxHxS0 modules: 1x 8TB3104.204G-11, 1x 8TB2104.203L-00, 1x 8TB2106.2010-00, 1x 8TB2108.2010-00</li> </ul>
34	<p><b>MachineAccessories;8BZVI0055D0.000-1A;Screw Clamp</b></p> <ul style="list-style-type: none"> <li>• Screw clamp terminal block set for ACOPOS multi 8BVI00xxHxD0 modules: 1x 8TB2112.2010-00, 1x 8TB2108.2010-00, 1x 8TB2104.203L-00, 1x 8TB2104.203F-00, 1x 8TB3104.204G-11, 1x 8TB3104.204K-11</li> </ul>

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