

TECHNICAL SPECIFICATION

Sewerage Pump Station Electrical Control Panel — Summary

1. Scope

The panel shall be a factory-assembled electrical control panel for a sewerage pump station, controlling two submersible pumps rated between 1.2 kW and 12.5 kW, with Automatic and Manual modes of operation, PLC-based control logic, 4-level float switch water-level sensing, and alternating (duty/standby) pump operation.

2. Summary of Panel Components

Category	Key Components	Specification Highlights	Qty
Enclosure & Housing	Legrand Marina cabinet, internal door, plain/gland plate	820×610×300 mm, IP66, IK10, glazed outer door, plastic internal door, industrial plain plate	30 pcs
Control & Automation	Siemens LOGO! 230RCE PLC, 3-phase multifunction energy meter (SPM72), hour meter/counter (HC77), waterdrop float switches	PLC 8DI/4DO, 800 blocks; 4-level float switch control; duty/standby alternation	110 pcs
Motor Protection	TeSys GV2 thermal-magnetic circuit breakers with auxiliary contact blocks	1.6–18A adjustable range, screw-clamp terminals	77 pcs
Motor Control	TeSys D contactors, LRD thermal overload relays, star-delta starter kits, time-delay auxiliary blocks, modular 3-phase control relay	Contactors 25–32A AC-3; overload relays 1.6–18A, class 10A	231 pcs
Operator Interface	Harmony push buttons, 3-position selector switches, 8mm LED panel indicator lamps	22mm flush-mount units; LED indicators — red/green/yellow/blue	290 pcs
Auxiliary & Metering	Interface plug-in relays, RXG2 relay sockets, tropicalised current transformer	5A/2CO plug-in relays, 250V; CT 100/5A, DIN mount, for cables ø21mm	140 pcs
Terminal & Wiring Accessories	Onka MTK/MRK terminal blocks, end brackets, IP68 PG cable glands, insulated cord-end and fork terminals	1.5–6mm ² rail terminals; PG9/PG21/PG42 glands; 0.5–16mm ² colour-coded ferrules	≈19,105 pcs

Note: quantities are aggregated totals per category from the supplier's 66-line material list (as per BOQ); wiring accessories (terminal blocks, cable glands, ferrules) account for the large majority of total piece count due to the high volume of colour-coded cord-end terminals (0.5mm² to 16mm²) required for panel wiring.

3. Applicable Standards & Ratings

- Motor circuit breakers, contactors and overload relays (TeSys GV2/D/LRD): IEC 60947-2 / IEC 60947-4-1.
- Enclosure ingress/impact protection: IP66, IK10.
- Cable glands: IP68 rated, polyamide construction.
- All components shall be new, unused, and sourced from the brands specified (Legrand, Siemens, Schneider Electric, Kubler) or an approved equivalent.

4. Documentation

The supplier shall provide manufacturer datasheets, compliance/test certificates, and the full itemised bill of materials (Annex A) confirming part numbers, brands and quantities for every component listed above.



Sewerage Control Panel – Material List

Below is a professional material list for a **Sewerage Pump Station Electrical Control Panel** designed for 2 pumps × 1.2 kW to 12.5 Kw submersible pumps with Automatic/Manual operation, PLC control, 4-level float switches, and alternating duty.

#	Description & Specification		BRAND		Qty
1	Marina 820x610x300mm - IP66 IK10 - glass door	REF. 036281 EAN. 3245060362812	LEGRAND		10
2	Internal door - for cabinets height 800 x width 600 - height 742 x width 536 mm (Plastic)	REF. 036363 EAN. 3245060363635	LEGRAND		10
3	Plain plate - for industrial cabinets Atlantic, Atlantic stainless steel and Marina 800x600 or 600x800 mm	REF. 036059 EAN. 3245060360597	LEGRAND		10
4	Siemens LOGO! PLC LOGO!230RCE, 8DI/4DO, 800 Blocks	6ED1052-1FB08-0BA3	Siemens		15
5	Push button, Harmony XB5N XB7N, plastic, flush, black, 22mm, spring return, unmarked, 1 NO	XB5AA21N	Schneider		25
6	Selector switch, Harmony XB5N XB7N, plastic, black, 22mm, short handle, 3 position , spring return to middle, 2 NO	XB5AD83N	Schneider		50
7	AC Panel Three Phase Multifunction Energy Meter SPM72	SPM72			10
8	TeSys D contactor - 3P(3 NO) - AC-3 - <= 440 V 32 A - 230 V AC 50/60 Hz coil	LC1D32P7	Schneider		30
9	TeSys D contactor - 3P(3 NO) - AC-3 - <= 440 V 25 A - 220 V AC coil	LC1D25M7	Schneider		30
10	TeSys LRD thermal overload relays - 1.6...2.5 A - class 10A	LRD07	Schneider		18
11	TeSys LRD thermal overload relays - 2.5...4 A - class 10A	LRD08	Schneider		26
12	TeSys LRD thermal overload relays - 4...6 A - class 10A	LRD10	Schneider		26



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13	TeSys LRD thermal overload relays - 5.5...8 A - class 10A	LRD12	Schneider		26
14	TeSys LRD thermal overload relays - 9...13 A - class 10A	LRD16	Schneider		13
15	TeSys LRD thermal overload relays - 12...18 A - class 10A	LRD21	Schneider		13
16	TeSys GV2-Circuit breaker-thermal-magnetic - 1.6...2.5 A - screw clamp terminals	GV2ME07	Schneider		8
17	TeSys GV2-Circuit breaker-thermal-magnetic - 2.5...4 A - screw clamp terminals	GV2ME08	Schneider		10
18	TeSys GV2-Circuit breaker-thermal-magnetic - 4...6.3 A - screw clamp terminals	GV2ME10	Schneider		10
19	TeSys GV2-Circuit breaker-thermal-magnetic - 6...10 A - screw clamp terminals	GV2ME14	Schneider		10
20	TeSys GV2-Circuit breaker-thermal-magnetic - 9...14 A - screw clamp terminals	GV2ME16	Schneider		5
21	TeSys GV2-Circuit breaker-thermal-magnetic - 13...18 A - screw clamp terminals	GV2ME20	Schneider		8
22	TeSys GV2 & GV3 - auxiliary contact block - 1 NO + 1 NC	GVAN11	Schneider		26
23	Modular 3-phase control relay, 8 A, 2 CO, 380...480 V AC	RM22TR33	Schneider		15
24	Kit for assembling star delta starters, for 3 x contactors LC1D09-D38 star identical, with time delay block	LAD91217	Schneider		20
25	TeSys D - time delay auxiliary contact block - 1 NO + 1 NC screw clamp terminals	LADS2	Schneider		14



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26	Hour meter and totaling counter in one device	HC77	Kubler		35
27	Socket, separate contact, 5 A, relay type RXG2, screw connector, 250 V AC	RGZE1S48M	Schneider		50
28	Interface plug-in relay, 5 A, 2 CO, clear cover, 230 V AC	RXG25P7	Schneider		50
29	current transformer tropicalised DIN mount 100 5 for cables d. 21	METSECT5CC010	Schneider		40
30	8mm LED Indicator Light 3V-220V Pre-wired for Panel Signal DIY Indicator Lamp FILN (RED)				80
31	8mm LED Indicator Light 3V-220V Pre-wired for Panel Signal DIY Indicator Lamp FILN (GREEN)				65
32	8mm LED Indicator Light 3V-220V Pre-wired for Panel Signal DIY Indicator Lamp FILN (YELLOW)				50
33	8mm LED Indicator Light 3V-220V Pre-wired for Panel Signal DIY Indicator Lamp FILN (BLUE)				20
34	Onka MTK 2,5mm ² SCREW CONNECTION GROUND RAIL TERMINAL BLOCK				80
35	Onka MTK 4mm ² SCREW CONNECTION GROUND RAIL TERMINAL BLOCK				80
36	MTK 6mm ² SCREW CONNECTION GROUND RAIL TERMINAL BLOCK				70
37	Onka MRK 4mm ² SCREW CONNECTION RAIL TERMINAL BLOCK				160
38	Onka MRK 2,5mm ² SCREW CONNECTION RAIL TERMINAL BLOCK				300
39	Onka MRK 1,5mm ² SCREW CONNECTION RAIL TERMINAL BLOCK				300

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40	Onka MRK AND OPK SERIES MINI END BRACKET			110
41	PG 9 CABLE GLAND (IP-68 POLYAMIDE) GREY			65
42	PG 21 CABLE GLAND (IP-68 POLYAMIDE) GREY			25
43	PG 42 CABLE GLAND (IP-68 POLYAMIDE) GREY			15
44	INSULATED CORD END TERMINAL 16mm2 (RED)			200
45	INSULATED CORD END TERMINAL 16mm2 (YELLOW)			200
46	INSULATED CORD END TERMINAL 16mm2 (BLUE)			200
47	INSULATED CORD END TERMINAL 16mm2 (BLACK)			200
48	INSULATED CORD END TERMINAL 10mm2 (RED)			200
49	INSULATED CORD END TERMINAL 10mm2 (YELLOW)			200
50	INSULATED CORD END TERMINAL 10mm2 (BLUE)			200
51	INSULATED CORD END TERMINAL 10mm2 (BLACK)			200
52	INSULATED CORD END TERMINAL 6,mm2 (RED)			500
53	INSULATED CORD END TERMINAL 6,mm2 (YELLOW)			500
54	INSULATED CORD END TERMINAL 6,mm2 (BLUE)			500
55	INSULATED CORD END TERMINAL 4,mm2 (RED)			500
56	INSULATED CORD END TERMINAL 4,mm2 (YELLOW)			500
57	INSULATED CORD END TERMINAL 4,mm2 (BLUE)			500
58	INSULATED CORD END TERMINAL 4,0mm2 (BLACK)			500
59	INSULATED CORD END TERMINAL 2.5mm2 (RED)			2000
60	INSULATED CORD END TERMINAL1,5mm2 (Red)			2000
61	INSULATED CORD END TERMINAL1,5mm2 (BLACK)			2000



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62	INSULATED CORD END TERMINAL1mm2 (RED)			2000
63	INSULATED CORD END TERMINAL0.75mm2 (RED)			2000
64	INSULATED CORD END TERMINAL0.5mm2 (RED)			2000
65	INSULATED FORK TYPE TERMINALS (0,5 - 1,5 mm2)			800
66	Waterdrop float switch			50

