



- Full Colour Touchscreen Display
- 3 x Status LEDs
- 8 x Programmable LEDs
- USB Connections as Standard
- Stainless Steel Housing
- Pluggable Connections
- Multi Lingual
- Customisable Menu Screens
- Self Diagnostic
- 3 x Processors for Ultimate Reliability and Speed Off Operation
- All Protection Functions Included without Additional Costs
- Control of Circuit Breaker
- IEC61850, -103, Profibus, etc.
- SYMAP® Parameter Tool Software
- 4 x Parameter Sets
- Remote Display (optional)

SYMAP®-Compact Technical Data

Description	Specification
Dimensions (H x W x D)	210 x 210 x 87 (mm)
Cut Out (H x W)	192 x 192 (mm)
Weight	2.2 kg
Auxiliary Supply	24/48/60/110/220V DC; 110/230V AC
Power Consumption	< 20 W
Climatic Conditions	Operation -20°C to +70°C Maximum -40°C to +70°C Shipping -40°C to +70°C Rel. Humidity < 80 %
Housing	Front IP54 (IEC529) Rear IP20 (IEC529)
Max. Connections	Spring Terminals Max. 1.5 mm Current Terminals Max. 6 mm

Stucke Elektronik GmbH

Stucke Elektronik have designed and manufactured premium quality, high performance electronic devices in Hamburg since 1968. Our systems provide supervision, protection and control to ensure optimum reliability for your electrical supply. To guarantee the highest quality all our products are manufactured exclusively in Hamburg, Germany.

Stucke have been specialists in electronic protection systems for over 40 years. Our company is certified according to DIN EN ISO 9001:2008.

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Stucke Elektronik GmbH offers

- Future proof technical product solutions
- Full service support including on site commissioning
- In depth product training
- Efficient after sales support and service
- Ultra fast delivery times
- Subsidiaries and partners in key locations worldwide

Stucke Worldwide:

Düsseldorf · Stuttgart · Madrid · Lisbon · London · Treviso · Belgrade
St. Petersburg · Los Angeles · Panama City
Seoul · Ulsan · Shanghai · Singapore · Mumbai · Brisbane

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SYMAP®-Compact

Digital Protection and Control Relays
User-friendly, Flexible and Future Proof

Protection for:

- Motors and Generators
- Transformers
- Transmission & Distribution Systems
- Mains Decoupling
(incl. G59/G10/BDEW/VDN)
- Feeders

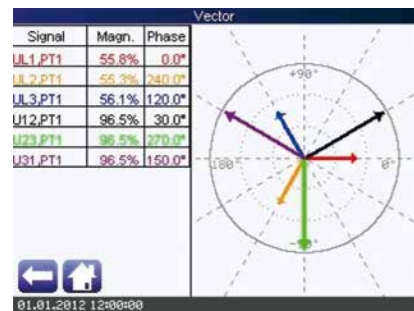
The **SYMAP®-Compact** range of relays offer flexible digital protection for a wide range of LV and HV applications.

At the heart of the SYMAP is a large, full colour, touch screen display which quickly enables complete programming of all protection and control functions. Alternatively you can do this via PC using the standard USB connection. The fully programmable nature of these relays gives you an extremely versatile and cost effective solution for all switchgear applications. All **SYMAP®-Compact** devices are made in Germany.

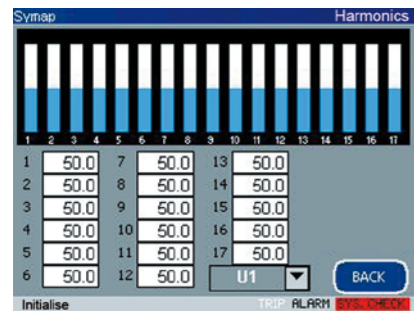




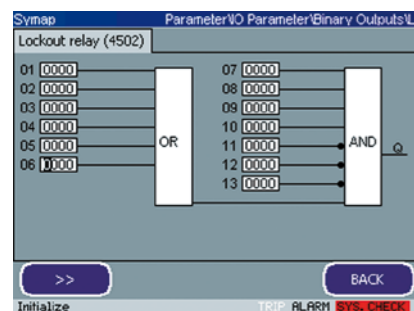
Trend Recorder



Vector Diagram



Harmonics



Programmable Logic Functions

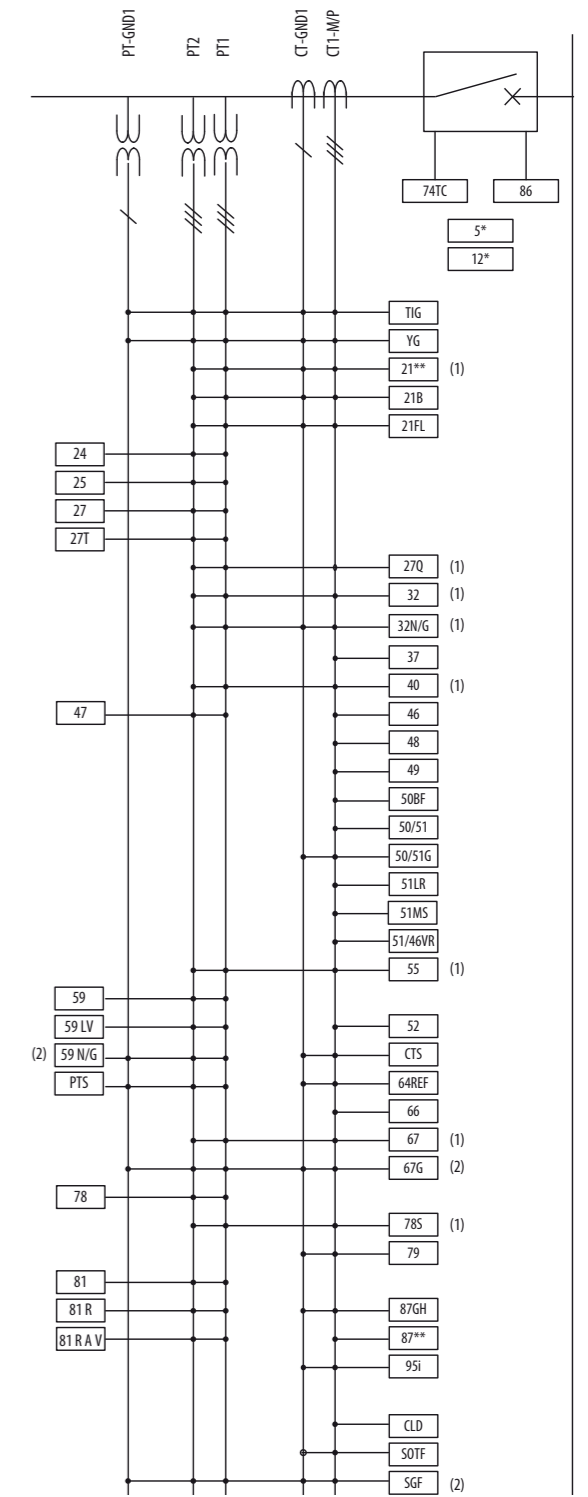
Above are examples of SYMAP®-Compact display capabilities

SYMAB®-Compact Hardware-Versions	Compact				
	F0	F1	F2	F3	F4
HMI					
Full colour touchscreen display	•	•	•	•	•
Programmable Hotkeys	•	•	•	•	•
3 x Status LEDs	•	•	•	•	•
8 x programmable LEDs	•	•	•	•	•
Communication					
PROFIBUS DP	(0)	(0)	(0)	(0)	(0)
MODBUS, RS485/422	•	•	•	•	•
IEC 60870-5-103	(0)	(0)	(0)	(0)	(0)
IEC 61850	(0)	(0)	(0)	(0)	(0)
Inputs / Outputs					
Ethernet / MiniUSB (rear)	•	•	•	•	•
USB (front)	•	•	•	•	•
Digital Inputs	5/(12)	5/(12)	5/(12)	5/(12)	5/(12)
Relay Outputs	5/(19)	5/(19)	5/(19)	5/(19)	5/(19)
Analogue Outputs					
Analogue Outputs 4-20 mA	(2)	(2)	(2)	(2)	(2)
Analogue Output PWM or +/- 10V	(1)	(1)	(1)	(1)	(1)
Analogue Inputs for Measurement and Protection					
Bus Current Inputs (x3)	-	•	•	•	•
Earth Fault Current Input (x1)	-	•	•	•	•
Feeder Voltage Input (x3)	•	-	-	-	•
BUS1 Voltage Inputs (x3)	•	-	-	-	•
BUS2 Voltage Inputs (x3)	-	-	-	-	-
Neutral Voltage Displacement Input (x1)	•	-	•	•	•
					(0) optional

SYMAB®-Compact Protective Function		Compact					avail.*
		F0	F1	F2	F3	F4	
		Scope of Supply					
21	Distance	-	-	-	(•)	(•)	○
21B	Generator backup protection	-	-	-	-	-	○
21FL	Fault locator	-	-	-	-	-	✓
24	Overexcitation (U/F)	-	-	-	-	-	✓
25	Synchronizing	•	-	-	-	-	✓
27	Undervoltage protection	•	-	-	-	-	✓
27Q	Undervoltage / Reactive power protection	-	-	-	-	-	✓
27T	Undervoltage protection, time-dependent	•	-	-	-	-	✓
32	Directional power protection	-	-	-	-	-	✓
32N/G	Zero power protection	-	-	-	-	-	✓
37	Overcurrent protection	-	-	-	-	-	○
40	Loss of Field	-	-	-	-	-	○
46	Negative Phase Sequence Current protection (NPS)	-	•	•	•	•	✓
46BC	Broken conductor: I2/I1	-	•	•	•	•	✓
47	Phase sequence / Phase Balance	•	-	-	-	-	○
48	Motor start-up monitoring: Incomplete sequence	-	•	•	•	•	○
49	Thermal replica	-	•	•	•	•	✓
50/51	Overcurrent protection	-	•	•	•	•	✓
50BF	Breaker Failure protection	-	•	•	•	•	✓
50/51G	Ground Overcurrent protection	-	•	•	•	•	✓
51LR	Locked Rotor	-	•	•	•	•	○
51MS	Motor start protection	-	•	•	•	•	○
51/46VR	Overcurrent restrained	-	-	-	-	-	✓
52	Pole disordance, e.g. phase segregated undercurrent supervision	-	•	•	•	•	○
55	Power factor protection	-	-	-	-	-	○
59	Overvoltage protection	•	-	-	-	-	✓
59N/G	Neutral Voltage Displacement (NVD)	•	-	-	-	-	✓
59LV	Low voltage: 10 minutes RMS-protection acc. to VDE-AR-N 4105	•	-	-	-	-	○
64REF	Restricted Earth Fault Protection	-	•	•	•	•	✓
66	No. Of Starts (Motor)	-	•	•	•	•	○
67	Directional Overcurrent protection	-	-	-	-	-	✓
67G	Directional Ground Overcurrent protection	-	-	-	-	-	✓
74TC	Trip Circuit Supervision	•	•	•	•	•	✓
78	Vektor Surge	•	-	-	-	-	✓
78S	Power Swing / Out-Of-Step	-	-	-	-	-	○
79	Automatic Reclose (AR)	-	•	•	•	•	✓
81	Frequenzy protection	•	-	-	-	-	✓
81R	RoCoF (df/dt)	•	-	-	-	-	✓
81RAV	Frequenzy supervised average (dF/dT)	•	-	-	-	-	○
86	Lockout relay	•	•	•	•	•	✓
87GH	High impedance restricted ground fault protection	-	•	•	•	•	○
95i	Harmonics stabilizer	-	•	•	•	•	✓
G59	for ANSI 78 and 81R	(•)	-	-	(•)	(•)	✓
CLD	Cold Load Detection	-	•	•	•	•	✓
CTS	Current Transformer Supervision	-	•	•	•	•	✓
PTS	Potential Transformer Supervision	•	-	-	-	-	✓
SGF	100% Stator Ground Fault protection	-	-	-	-	-	○
SOTF	Switch On To Fault	-	•	•	•	•	✓
TIG	Transient/Intermittent Ground Fault protection	-	-	(•)	(•)	(•)	✓
YG	Neutral Admittance Ground Fault protection	-	-	(•)	(•)	(•)	✓

* Function in development. Please request. ○ not yet available ✓ now available

SYMAB®-Compact Protective Function by ANSI



(1) depending on power measurement at common changeover
(2) measured or calculated