# Auswahltabelle Mittelspannungsschutz

ABB AG
Calor Emag Mittelspannungsprodukte
Distribution Automation
Oberhausener Straße 33
D-40472 Ratingen

Tel: 02102/ 12-1274
Fax: 02102/ 12 1255
www.abb.de/mittelspannung
Netzautomatisierung.deabb@de.abb.com

**Bitte beachten !**

**Anzahl=** Anzahl der Stufen, Versuche , Ein- oder Ausgänge
**X =** Funktion unterstützt
**O =** Funktion als Option verfügbar
**S =** Sekundärfunktion /-Applikation

**Auswahl zeigen =** filtert Geräte aus , die die gewünschte Funktion nicht bieten
**Alle Geräte zeigen =** zeigt alle verfügbaren Geräte
**Auswahl löschen =** löscht alle ausgewählten Funktionen

**Meine Auswahl =** Markieren Sie die gewünschten Funktionen mit einem "x"

**Anleitung**
Document

Auswahl zeigen | Alle Geräte zeigen | Auswahl löschen

| ANSI Code | IEC Symbol | IEC 61850 LN Class | Definition | Meine Auswahl | SPAM 150 C | SPAJ 140 C | SPAJ 160 C | SPAU 130 C | SPAU 140 C | SPAF 140 C | REA 101 | REC 501 | REU 610 | REM 610 | REF 610 | SPAU 341 C | SPAD 346 C | REF615 (std conf A) | REF615 (std conf B) | REF615 (std conf C) | REF615 (std conf D) | REF615 (std conf E) | REF615 (std conf F) | RED615 (std conf A) | REX 521B01 | REX 521B02 | REX 521M01 | REX 521M02 | REX 521H01 | REX 521H02 | REX 521H03 | REX 521H04 | REX 521H05 | REX 521H06 | REX 521H07 | REX 521H08 | REX 521H09 | REX 521H50 | REX 521H51 | REM 543 MOTOR | REM 543 GENERATOR | REM 545 MOTOR | REM 545 GENERATOR | RET 54_ CONTROL | RET 54_ BASIC | RET 54_ MULTI | REF 54_ CONTROL | REF 54_ BASIC | REF 54_ MULTI | REC 523 | REF 542plus BASIC LOW | REF 542plus BASIC | REF 542plus MULTI LOW | REF 542plus MULTI | REF 542plus DIFFERENTIAL | REF 542plus DISTANCE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Basic Range | | | | | | | | | | | Middle Range | | | | | | | | | | | | | | | | | | | | | | | | High Range | | | | | | | | | | | | | | | | |
| **Applications** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Einspeisefeld | | S | X | | X | X | | | | X | S | X | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | S | | X | X | X | | | | | | | | | | X | X | | X | X | X | X | | X |
| | | | Abgangsfeld | | S | X | | X | X | | | | X | S | X | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | S | | X | X | X | | | | | | | | | | X | X | | X | X | X | X | | X |
| | | | Messfeld | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | X | X | | X | X | X | X | | X |
| | | | Feldsteuerung und -messung | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | | X | X | X | X | X | X |
| | | | Schutz von Kondensatorbänken | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | | | | | X | | X |
| | | | Motorschutz | | X | | | | | X | | | | X | | | X | | | | | | | | | | | | | | | | | | X | | | | X | X | X | X | X | | | | | X | X | | | | | X | | X |
| | | | Generatorschutz | | | | | | | X | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | X | | X | | | | | | | | | | | | | |
| | | | Transformator Schutz | | S | | | | | | | | | S | | | X | | | | | | | | | | | | | | | | S | | S | | | | S | | | | | | X | X | | | | | | | | | X | X |
| | | | Spannungsregelung | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | | | | | | | | | | |
| | | | Reserveschutz | | | X | | | | | | | | | X | | | | | | | | | | S | S | S | S | S | S | S | S | S | | | S | S | | | | | | | | | | | X | X | | | | | | | X |
| | | | Lichtbogenschutz | | | | | | | | X | | | | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Feldautomation | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | | | | | |
| **Protection functions** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50/51/51B | 3I > | PHLPTOC | Dreiphasiger Überstromzeitschutz, ungerichtet | | 2 | 2 | | | | | S | | | 2 | 3 | | 3 | 4 | 4 | 4 | 4 | 4 | 1 | 4 | 3 | 3 | 3 | 3 | 1 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | 4 | 4 | | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 |
| 67 | 3I > -> | PTOC, PDIR | Dreiphasiger Überstromzeitschutz, gerichtet | | | | | | | | | | | | | | | | | | | | 3 | | | | | | 2 | 2 | | 1 | | | | | | 2 | 1 | | 3 | | 3 | | | 3 | | 3 | 3 | 2 | | 2 | 2 | 2 | 2 | 2 |
| 51V | I(U) > | PVOC | Spannungsabhängiger Überstromschutz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 2 | 2 | 2 | | | | | | | | | | | | | |
| 87G/87M | 3ΔI > | PDIF | Hochimpedanz-/ flussbasierter Differentialschutz für Motoren und Generatoren | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | | | | | | | | | | | | | |
| 87G | 3ΔI >, 3ΔI >> | PDIF | Stabilisierter , dreiphasiger Differentialschutz für Generatoren | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | X | | | | | | | | | | | | | |
| 87T | 3ΔI >, 3ΔI >> | PDIF, PHAR | Stabilisierter , dreiphasiger Differentialschutz für Transformatoren | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | | | | | | | | | X | |
| 87L | 3ΔI > | PDIF | Leitungsdifferentialschutz | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21G | Z< | - | Stabilisierter , dreiphasiger Differentialschutz für Transformatoren | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | 2 | | | 2 | | | | | | | | | | |
| 50N / 51N | $I_0$ > | EFLPTOC | Erdschlusschutz, ungerichtet | | 1 | 2 | | | | | S | | | 2 | 2 | | 2 | | | 3 | 3 | | | | 3 | 3 | | | | | | 3 | 3 | | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | | 3 | 3 | | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 51N | $I_0$ > | EFLPTOC | Non-directional earth-fault sensitive | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 51N-2 | $I_0$ >> | EFLPTOC | Non-directional (cross country) earthfault, using calculated I | | | | | | | | | | | | | | | X | X | | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 67N-IEF | $I_0$ > -> IEF | INTRPTEF | Transient / intermittent earth-fault | | | | | | | | | | | | | | | X | X | | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 67N/51N | $I_0$ > SEF -> | PTOC, PDIR | Directional earth-fault | | | | | | | | | | | | | | | 3 | 3 | | | 3 | 3 | | | | 3 | 3 | 3 | 3 | 3 | 3 | | | 2 | | | 2 | 2 | 2 | 2 | 2 | 2 | | | 2 | | 2 | 2 | 2 | | 2 | 2 | 2 | 2 | 2 |
| 67N | $I_0$ > SEF -> | PSDE | Sensitiver Erdschlusschutz, gerichtet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | | | X | | X | X | | | X | X | X | X | X |
| 87N | $DI_0$ >, REF | PDIF | Hochimpedanz basierter "restricted earth-fault" Schutz | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | X | | X | | X | X | | | | | | | | | | |
| 87N | $DI_0$ >, REF | PDIF | Niedrigimpedanz basierter "restricted earth-fault" Schutz | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 2 | | | | | | | | | 1 | 1 |
| 59N | $U_0$ > | PTOV | Verlagerungsspannungsschutz | | | | | | | | | | 2 | | | | | | | | | | 3 | | | | | | | | | | 3 | 3 | | 3 | 3 | 2 | 1 | 3 | 3 | 3 | 3 | | | 3 | | 3 | 3 | | | 2 | 2 | 2 | 2 | 2 |
| 46 | I2 > | PTOC | Schieflastschutz | | | | | | | | | | | X | | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | | | | | | | | | 2 | | | | 1 | 2 | 2 | 2 | 2 | | 2 | 2 | | | | | | | 1 | 1 | 1 | 1 |
| 46 | DI > | PTOC | Phasenunterbrechungsschutz | | X | | | | | | | | | X | X | | X | X | X | X | X | X | X | | X | X | X | X | X | X | X | X | | | | | | | | | | | | | | | | X | X | X | | | | | | |
| 46R | 3I↶ , 3I↷ | PTOC | Drehrichtungsschutz | | X | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | X | | | | | X | X | X | X | | | | | | | | | | | | | |
| 59 | 3U > | PTOV | Dreiphasiger Überspannungsschutz | | | | | 1 | | | | | 2 | | | | | | | | | | 3 | | | | | | | | | | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | | | 2 | | | 2 | | | | 3 | 3 | 3 | 3 |
| 27 | 3U < | PTUV | Dreiphasiger Unterspannungsschutz | | | | | 1 | | | | | 2 | | | | | | | | | | 3 | | | | | | | | | | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | | | 2 | | | 2 | 2 | | | 3 | 3 | | 3 |
| 21 | Z < | PDIS | Distanzschutz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X |
| 81U/81O | f< / f> / df/dt | PTUF, PTOF, PFRC | Unterfrequenz- oder Überfrequenzschutz inkl. Frequenzgradient | | | | | | | 4 | | | | | | | | | | | | | | | | | | | | 1 | | 1 | | 2 | 1 | | 2 | 2 | 2 | | 5 | | 5 | | | 5 | | | 5 | | | | | 6 | | 6 |
| 32P/32Q | P> -> / Q > -> | PDOP | Dreiphasiger Leistungsrichtungsschutz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | 3 | | | | | | | | | | | 1 | | 1 |
| 32 | P< / P> <- | PDUP | Dreiphasiger Unterlastschutz, gerichtet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | 3 | | | | | | | | | | | | | |
| 24 | U/f> | PVPH | Übererregungsschutz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | 2 | | | 2 | | | | | | | | | | |
| 40 | X< | PDUP | Dreiphasiger Untererregungsschutz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | 2 | | | | | | | | | | | | | |
| 79 | O -> I | RREC | Automatische Wiedereinschaltung (AWE, KU) | | | | | | | | | | | | 3 | | | O | O | O | O | O | O | | | 5 | | 5 | 5 | 5 | 5 | 5 | | | | | 5 | 5 | | | | | | | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | | 5 |
| 25 | SYNC | RSYN | Synchrocheck/Parallelschaltüberwachung | | | - | | | X | | | | | | | | | | | | | | | | | | | | 1 | | 1 | | | | | | | | | | 2 | | 2 | | | | 2 | 2 | 2 | | 1 | 1 | 1 | 1 | | 1 |
| 68 | 3I2f > | PHAR | Dreiphasige Inrushblockierung | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | X | X | X | | X | X | X | X | | X | X | | X | X | X | X | X | X | X | X | X |
| 60 | FUSEF | - | Sicherungsüberwachung | | | | | | | | | | | | | | | | | | | X | X | | | | | | | | | | | | X | | | | X | | X | | X | | | X | X | X | X | | | | | | | |
| 37 | 3I< | PTUC | Dreiphasiger Unterlastschutz, ungerichtet | | 1 | | X | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | 2 | 2 | 2 | 2 | | | | | | | | | | | 1 | 1 | 1 |
| 62BF | CBFP | RBRF | Leistungsschalterversagerschutz | | X | X | | | | | X | | X | X | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X | | | | X | X | X |
| 66 | | - | Anzahl der Anläufe | | X | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | X | | | | | X | X | X | X | | | | | | | | | | | X | X | X |
| 49F | 3⚐ | PTTR | Dreiphasiger Thermischer Überlastschutz (Abgänge und Kabel) | | X | | | | | | | | | X | X | | | X | X | X | X | X | X | | X | X | X | X | X | X | X | X | | | | | | | | | | | | | | | | X | X | | | | | X | X | X |
| 49G | 3⚐ | PTTR | Dreiphasiger Thermischer Überlastschutz für Generatoren | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | X | X | | | X | X | X | X | X | | | | | X | X | | | | | X | X | X |
| 49M | 3⚐ | PTTR | Dreiphasiger Thermischer Überlastschutz für Motoren | | X | | | | | | | | | X | | | | | | | | | | | | | | | | | | | X | | X | X | | | X | X | X | X | X | | | | | X | X | | | | | X | X | X |
| 49T | 3⚐ | PTTR | Dreiphasiger Thermischer Überlastschutz für Transformatoren | | S | | | | | | | | | S | | | | | | | | | | | | | | | | | | | X | | X | X | | | X | X | X | X | X | | X | X | | X | X | | | | | X | X | X |
| 49/38 | | PTTR | Anschluss von RTDs oderr Thermistoren (z.B. PT 100) | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | O | O | O | O | | | | | O | O | | | | | | | |
| 48/14 | | PMRI, PMSS | Motoranlaufstromüberwachung, Is2 x ts | | X | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | X | | | | X | X | X | X | X | | | | | X | X | | | | | X | X | X |
| 14 | | - | Einbindung der Motorgeschwindigkeitsüberwachung | | X | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | | | | | X | X | | | | | X | | X |
| 51LR | | PMSS | Schutz gegen blockierten Rotor | | X | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | | | | | X | X | | | | | X | X | X |
| 51MS | | PMRI | Motoranlaufstromüberwachung | | X | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | | | | | X | X | | | | | X | X | X |
| 27, 47, 59 | U1< & U2> & U1> | PTUV, PTOV, PTOV | Dreiphasiger Spannungsschutz im Mit- und Gegensystem | | | | | | | | | | X | | | | | | | | | | X | | | | | | | | | | | | X | | | X | X | 2 | 2 | 2 | 2 | | | 2 | | 2 | 2 | | | | | | | |
| 86 | | - | Wiedereinschaltsperre (lock-out) | | X | X | X | | | | | | X | X | X | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | X | X | X | X |
| | | - | Motornotstart | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | PTOC | Dreiphasiger Überlastschutz für Kondensatorbänke | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | O | O | | | | | | | |
| | | PTOC | Schieflastschutz für Kondensatorbänke | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | O | O | | | | | | | |
| | | PTOC | Dreiphasiger U/B Stromschutz für H-Brücken- Kondensatorbänke | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | O | O | | | | | | | |
| | | - | Schaltresonanzschutz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | X |
| 21FL | | | Fehlerorter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | O | O | | | | | | | |
| | | - | Oberwellenschutz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | X |
| BST | | | Binärsignalübetragung | | | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Lichtbogenschutz | | | | | | | | | | | | | | | O | O | O | O | O | O | | | | | | | | | | | | | | | | | | | | | | | | | O | O | | | | | | | |
| **Control functions** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | CSWI | Leistungsschalter 1 (2 Statuseingänge / 2 Steuerausgänge) | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | CSWI | Leistungsschalter 2 (2 Statuseingänge / 2 Steuerausgänge) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | CSWI | Trenner (2 Statuseingänge / 2 Steuerausgänge) | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | CSWI | 3-Stellungsschalter (3 Statuseingänge / 4 Steuerausgänge) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | | - | Objektstatusanzeige (2 Statuseingänge) | | | | | | | | | X | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | - | Dynamisches Einstrichschema auf dem Display | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | | - | Alarm LEDs am Display (Alarm Anzeige) | | | | | | | | | | 8 | 8 | 8 | | | | | | | | | | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 21 | 32 | 32 | 32 | 32 | 32 | 32 |
| | | - | An/Aus Schalter im Einstrichschema | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | | | | | | |
| | | - | Direkter LS Aus über Display | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | | - | Ort/Fern-Schaltung am Display | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | - | Programmierbare Verriegelungsfunktionen | | | | | | | | | | | | | | | | X | | X | X | X | X | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | - | SPS Funktionen (UND, ODER, Timer usw.) nach IEC 61131-3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | - | Umschaltbarer Parametersatz für Schutzfunktionen | | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | - | Fernparametrierung | | X | X | X | X | X | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | - | Selbstüberwachung | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | - | Meldeanzeige, Ereigniserzeugung Richtung Leittechnik, Meßwerterfassung | | X | X | X | X | X | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | - | Grafikdisplay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | | ARCO | Blindleistungsregler | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | O | O | O | X | X | X | X | X | X | X |
| 90V | | ATCC | Spannungsregler | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | O | O | | | | | | | | | | |
| **Measurement functions** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3I | MMXU | Strom, dreiphasig | | X | X | X | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | 3I | MMXU | Strom, dreiphasig, System 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | $I_0$ | MMXU | Nullstrom | | X | X | | | | | | | | X | X | | X | X | X | X | X | X | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | $I_0$ | MMXU | Nullstrom, System 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | | Diffenrentialstrom ???? | | | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Symmetrische Komponenten der Ströme ??? | | | | | | | | | | | | | | | X | X | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3U | MMXU | Spannung, dreiphasig | | | | | | | | | | X | | | X | | | | | | X | X | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | 3U | MMXU | Spannung, dreiphasig, System 2 | | | | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | $U_0$ | MMXU | Verlagerungsspannung | | | | | | | | | | X | | | | | X | X | | | X | X | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | $U_0$ | MMXU | Verlagerungsspannung, System 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | | Symmentrische Komponenten der Spannungen ??? | | | | | | | | | | | | | | | X | X | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | E / P / Q / pf | MMXU | Leistung und Energie, dreiphasig, inkl. cos phi | | | | | | | | | | | | | | | | | | | X | X | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | f | MMXU | Frequenz | | | | | | | X | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | RDRE | Störschreiber | | | | | | | | | | X | X | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | - | Messungen über RTD oder 20mA Eingänge, allgemeine Messungen | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | | - | 20mA Messwert-Ausgänge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | | | Batteriespannung | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | | | | | |
| | | | Temperatur | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | O | O | O | O | O | O | | O | O | | X | | | | | | |
| **Condition monitoring functions** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CBCM | - | LS Abnutzung 1 | | | | | | | | | | | | | | | | X | | X | X | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | CBCM | - | LS Abnutzung 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | CBCM | - | LS Schaltspielzähler 1 | | | | | | | | | | | | | | | | X | | X | X | X | | | | | | | | | | | | X | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | CBCM | - | LS Schaltspielzähler 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | CBCM | SIMG | Gasdrucküberwachung | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | CBCM | SIMG | Gasdrucküberwachung, dreiphasig | | | | | | | | | | | | | | | | X | | X | X | X | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | CBCM | - | Steuerung des LS-Aufzugmechanismus | | | | | | | | | | | | | | | | X | | X | X | X | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | CBCM | - | LS Ausschaltzeit | | | | | | | | | | | | | | | | X | | X | X | X | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | CBCM | - | LS Wartungshilfe | | | | | | | | | | | | | | | | X | | X | X | X | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | TCS | - | Auskreisüberwachung 1 | | | | | | | | | | X | X | X | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | TCS | - | Auskreisüberwachung 2 | | | | | | | | | | | | | | | X | X | X | X | X | X | X | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | MCS | - | Überwachung der Stromwandlereingänge | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | MCS | - | Überwachung der Spannungswandlereingänge | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | - | Leiterströme der Leitungsdifferentialschutzgeräte an beiden Endem | | | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PCS | PCS | - | Schutzkommunikationsüberwachung | | | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Power quality Funktionen** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Spannungseinbrüche und-anstiege | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | O | O | O | | | | | | | |
| | | MHAI | Messung der Verzerrung der Stromsignals | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | | | | O | O | O | X | | | | | | |
| | | MHAI | Messung der Verzerrung der Spannunsgsignals | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | | | | | | | | O | O | O | X | | | | | | |
| **Kommunikationsprotokolle** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | SPA bus | | X | X | X | X | X | X | | X | X | X | X | X | X | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | | LON bus | | | | | | | | | X | | | | S | X | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | | IEC 60870-5-103 | | | | | | | | | | X | X | X | | | X | X | X | X | X | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | X | X | X | X | X | X | | X | X | X | X | X | X |
| | | | IEC 61850-8-1 | | O | O | O | O | O | O | | O | O | O | O | O | O | X | X | X | X | X | X | X | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | X | X | X | X | X | X |
| | | | Modbus RTU/ASCII | | | | | | | | | X | X | X | X | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | | PROFIBUS | | O | O | O | O | O | O | | O | O | O | O | O | O | | | | | | | | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O |
| | | | DNP 3.0 | | | | | | | | | X | X | | X | | | X | X | X | X | X | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | X | X | X | X | X | X | X | | | | | | |
| | | | IEC 60870-5-101 | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | | | | | |
| | | | Modbus überTCP/IP | | | | | | | | | O | O | O | O | | | X | X | X | X | X | X | X | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | X | X | X | X | X | X |
| | | | SPA über TCP/IP | | O | O | O | O | O | O | | O | O | O | O | O | O | | | | | | | | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | O | | | | | | |
| **Eingänge / Ausgänge** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Analoge Sensor Eingänge | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | 6 | 6 | 6 | 6 | 6 | 6 | - | - | - | - | 9 | 9 | 9 | 9 | - | - | - | 9 | 9 | 9 | 9 | 0-8 | 0-8 | 0-8 | 0-8 | 0-8 | 0-8 |
| | | | Analoge Eingänge (1/5A) | | 4 | 4 | 4 | - | - | - | 3 | - | - | 4 | 4 | 3 | 8 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4-8 | 4-8 | 4-8 | 4-8 | 6-8 | 6-8 | 6-8 | 4 | 4 | 4 | 3-6 | 0-8 | 0-8 | 0-8 | 0-8 | 0-8 | 0-8 |
| | | | Analoge Eingänge (0,2/1A) | | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0-1 | 0-1 | 0-1 | 0-1 | - | - | - | 1 | 1 | 1 | - | 0-2 | 0-2 | 0-2 | 0-2 | 0-2 | 0-2 |
| | | | Analoge Eingänge (100V) | | - | - | - | 3 | 3 | 1 | - | - | 4 | - | - | 1 | - | 1 | 1 | - | - | 5 | 5 | - | - | - | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1-4 | 1-4 | 1-4 | 1-4 | 1-3 | 1-3 | 1-3 | 4 | 4 | 4 | 3-6 | 0-6 | 0-6 | 0-6 | 0-6 | 0-6 | 0-6 |
| | | | RTD/mA Eingänge (Option) | | - | - | - | - | - | - | - | | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 8 | 8 | 8 | 8 | 8/8/- | 8/8/- | 8/8/- | 8/8/- | 8/8/- | 8/8/- | - | 6 | 6 | 6 | 6 | 6 | 6 |
| | | | mA Ausgänge (Option) | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 | 4 | 4 | 4 | 4/4/- | 4/4/- | 4/4/- | 4/4/- | 4/4/- | 4/4/- | - | 4 | 4 | 4 | 4 | 4 | 4 |
| | | | Digitale Eingänge | | 1 | 1 | 1 | 1 | 4 | 4 | 1 | 5 | 5 | 5 | 5 | 7 | 5 | 3 | 10-16 | 4 | 11-17 | 16 | 16 | 11-17 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 15 | 15 | 25 | 25 | 15/25/34 | 15/25/34 | 15/25/34 | 15/25/34 | 15/25/34 | 15/25/34 | 15 | 42 | 42 | 42 | 42 | 42 | 42 |
| | | | Auskreisüberwachung | | - | - | - | - | - | - | - | - | 1 | 1 | 1 | - | - | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | 3 | 3 | 3 | 3 | 3 | 3 |
| | | | Leistungsausgänge | | 2 | 2 | 2 | 2 | 2 | 2 | 3 | - | 3 | 3 | 3 | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 11 | 11 | 5/11/14 | 5/11/14 | 5/11/14 | 5/11/14 | 5/11/14 | 5/11/14 | 2 | 18 | 18 | 18 | 18 | 18 | 18 |
| | | | Signalausgänge | | 3 | 3 | 3 | 2 | 2 | 1 | - | 4 | 5 | 5 | 5 | 4 | 4 | 2 | 5-8 | 2 | 5-8 | 6 | 6 | 5-8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7/7/12 | 7/7/12 | 7/7/12 | 7/7/12 | 7/7/12 | 7/7/12 | 7 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | | Selbstüberwachende Ausgänge | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | | Batterieladeausgang (24V) | | - | - | - | - | - | - | - | X | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | X | - | - | - | - | - | - |
| **Sprachen** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Englisch | | | | | | | | | | X | X | X | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | | | Deutsch | | | | | | | | | | X | X | X | | | X | X | X | X | X | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X |
| | | | Französisch | | | | | | | | | | X | X | X | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | | | | | | | | | | | | | |
| | | | Italienisch | | | | | | | | | | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Spanisch | | | | | | | | | | X | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | X | X | X | X | X | X | | | | | | | |
| | | | Portugiesisch | | | | | | | | | | X | X | X | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | X | X | X | X | X | X | | | | | | | |
| | | | Russisch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | | X | X | X | X | X | X |
| | | | Polnisch | | | | | | | | | | X | X | X | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | X | X | X | X | X | X | | | | | | | |
| | | | Tschechisch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | | | | | | | |
| | | | Schwedisch | | | | | | | | | | X | X | X | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | | | |
| | | | Finnisch | | | | | | | | | | X | X | X | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | | | |
| | | | Chinesisch | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | | | | | | | | X | X | X | X | X | X |
| **Zertifikate** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Det Norske Veritas (DNV) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | | | | X | X | X | | X | X | X | X | X | X |
| | | | Registro Italiano Navale (RINA) | | X | X | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | | | | X | X | X | | | | | | | |
| | | | Germanischer Lloyd (GL) | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | | | | X | X | X | | | | | | | |
| | | | Lloyd's Register of Shipping (LR) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | | | | X | X | X | | | | | | | |
| | | | UL Recognition | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | | | | X | X | X | | | | | | | |
| | | | ATEX | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X |
| | | | Russian Maritime Register of Shipping | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | | | | | | | |
| **Allgemeines** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Höhe (in Höheneinheiten) | | 4 | 4 | 4 | 4 | 4 | 4 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 4 |
| | | | Internet Link (Klicken Sie auf das zugehörige "x", um den Link zu aktivieren) | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

My choice | SPAM 150C | SPAJ 140 C | SPAJ 160 C | SPAU 130 C | SPAU 140 C | SPAF 140 C | REA 101 | REC 501 | REU 610 | REM 610 | REF 610 | SPAU 341 C | SPAD 346 C | REF615 (std conf A) | REF615 (std conf B) | REF615 (std conf C) | REF615 (std conf D) | REF615 (std conf E) | REF615 (std conf F) | RED615 (std conf A) | REX 521B01 | REX 521B02 | REX 521M01 | REX 521M02 | REX 521H01 | REX 521H02 | REX 521H03 | REX 521H04 | REX 521H05 | REX 521H06 | REX 521H07 | REX 521H08 | REX 521H09 | REX 521H50 | REX 521H51 | REM 543 MOTOR | REM 543 GENERATOR | REM 545 MOTOR | REM 545 GENERATOR | RET 54_ CONTROL | RET 54_ BASIC | RET 54_ MULTI | REF 54_ CONTROL | REF 54_ BASIC | REF 54_ MULTI | REC 523 | BASIC LOW | BASIC | MULTI LOW | MULTI | DIFFERENTIAL | DISTANCE (REF 542plus)
Basic Range | Middle Range | High Range