



Interoperability List IEC 60870-5-103

REG-PE(X)

History of document

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Document changes/updates

(The overview contains only the changes concerning the released/distributed document)

Changed chapters /pages	Responsibility	Version	Reason of change / change request
All chapters	Borchers	1.0	Review
All chapters	Borchers	1.1	Baud rate corrected, increased set-point types, measurand type 11 and 12, new company profile

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1. Interoperability list

1.1 Physical layer

1.1.1 Electrical Interface

- EIA RS-485
- EIA RS-232
- 10-20mA

1.1.2 Optical interface

- Glass fibre
- Plastic fibre ,please order separately
- F-SMA type connector
- ST type connector

1.1.3 Transmission speed

- 100 bit/s
- 200 bit/s
- 300 bit/s
- 600 bit/s
- 1200 bit/s
- 2400 bit/s
- 4800 bit/s
- 9600 bit/s
- 19200 bit/s

1.2 Application layer

1.2.1 Transmission mode for application data

Mode 1 (least significant octet first), as defined in 4.10 of IEC 60870-5-4, is used exclusively in this companion standard.

1.2.2 COMMON ADDRESS of ASDU

One COMMON ADDRESS OF ASDU (identical with station address)

1.2.3 Selection of standard information numbers in monitor direction

System functions in monitor direction

INF	Semantics
<input checked="" type="checkbox"/>	<0>:= End of general interrogation
<input checked="" type="checkbox"/>	<1>:= Time synchronization
<input checked="" type="checkbox"/>	<2>:= Reset FCB
<input checked="" type="checkbox"/>	<3>:= Reset CU
<input checked="" type="checkbox"/>	<4>:= Start/restart
<input checked="" type="checkbox"/>	<5>:= Power on

Status indications in monitor direction

INF	Semantics
<input checked="" type="checkbox"/>	<16:= Auto/Man, Rückmeldung Hand/Auto
<input type="checkbox"/>	<17:= Teleprotection active
<input type="checkbox"/>	<18:= Protection active
<input type="checkbox"/>	<19:= LED reset
<input type="checkbox"/>	<20:= Monitor direction blocked
<input type="checkbox"/>	<21:= Test mode
<input type="checkbox"/>	<22:= Local parameter setting
<input type="checkbox"/>	<23:= Characteristic 1
<input type="checkbox"/>	<24:= Characteristic 2
<input type="checkbox"/>	<25:= Characteristic 3
<input type="checkbox"/>	<26:= Characteristic 4
<input type="checkbox"/>	<27:= Auxiliary input 1
<input type="checkbox"/>	<28:= Auxiliary input 2
<input type="checkbox"/>	<29:= Auxiliary input 3
<input type="checkbox"/>	<30:= Auxiliary input 4
<input checked="" type="checkbox"/>	<31:= running tap, Laufflampe

Supervision indications in monitor direction

INF	Semantics
<input checked="" type="checkbox"/>	<32:= 24V Automat
<input checked="" type="checkbox"/>	<34:= Lauflampe MaxZeit
<input checked="" type="checkbox"/>	<35:= Parallelprogramm läuft j/n
<input checked="" type="checkbox"/>	<36:= >U j/n
<input checked="" type="checkbox"/>	<37:= <U j/n
<input checked="" type="checkbox"/>	<38:= Schnellschaltung j/
<input checked="" type="checkbox"/>	<39:= Auslösung j/n
<input checked="" type="checkbox"/>	<40:= Stillsetzung j/n
<input type="checkbox"/>	<47:= Group alarm

Fault indications in monitor direction

INF	Semantics
<input type="checkbox"/>	<44>:= U >
<input type="checkbox"/>	<45>:= U <
<input type="checkbox"/>	<46>:= I >
<input type="checkbox"/>	<49>:= Error regulator
<input type="checkbox"/>	<50>:= Verzögerungsart linear/integral
<input type="checkbox"/>	<51>:= Regelverzögerung2 ein/aus
<input type="checkbox"/>	<52>:= Anzeige V/kV
<input type="checkbox"/>	<53>:= Meßschaltung A/C
<input checked="" type="checkbox"/>	<54>:= Stufenstellung / Tap position (wird im Meßwertblock übertragen)

REG-P specifics in control direction

INF	Semantics
<input checked="" type="checkbox"/>	<55:= Rated value 1, Sollwert 1
<input checked="" type="checkbox"/>	<56:= Rated value 2, Sollwert 2
<input type="checkbox"/>	<57:= Rated value 3
<input type="checkbox"/>	<59:=
<input type="checkbox"/>	<60:= Delay 1
<input type="checkbox"/>	<61:= Delay 2
<input type="checkbox"/>	<62:= U <

Fault indications in monitor direction

INF Semantics

- <64>:= U>
- <65>:= Überspannung max.
- <66>:= Unterspannung max.
- <67>:= Schnellregelung rück
- <68>:= Schnellregelung vor
- <69>:= Kreisblindstrom max.
- <70>:=
- <71>:=
- <72>:= K-factor
- <73>:= Factor adjust-kv
- <74>:= UX
- <75>:= UR
- <76>:= Loadshedding 1
- <77>:= Loadshedding 2
- <78>:= Loadshedding 3
- <79>:=
- <80>:= Zone 3
- <81>:= Zone 4
- <82>:= Zone 5
- <83>:= Zone 6
- <84>:= General start/pick-up
- <85>:= Breaker failure
- <86>:= Trip measuring system L₁
- <87>:= Trip measuring system L₂
- <88>:= Trip measuring system L₃
- <89>:= Trip measuring system E
- <90>:= Trip I>
- <91>:= Trip I>>
- <92>:= rip IN>
- <93>:= Trip IN>>

Auto-reclosure indications in monitor direction

INF Semantics

- <128>:= CB 'on' by AR
- <129>:= CB 'on' by long-time AR
- <130>:= AR blocked

Measurands in monitor direction

INF Semantics

- <144>:= Measurand
- <145>:= Measurands I, V
- <146>:= Measurands I, V, P, 0
- <147>:= Measurands I_N, V_{EN}
- <148>:= Measurands $I_{L1,2,3}, V_{L1,2,3}, P, Q, f$

Generic functions in monitor direction

INF Semantics

- <240>:= Read headings of all defined groups
- <241>:= Read values or attributes of all entries of one group
- <243>:= Read directory of a single entry
- <244>:= Read value or attribute of a single entry
- <245>:= End of general interrogation of generic data
- <249>:= Write entry with confirmation
- <250>:= Write entry with execution
- <251>:= Write entry aborted

1.2.4 Selection of standard information numbers in control direction

System functions in control direction

INF Semantics

- <0>:= Initiation of general interrogation
- <0>:= Time synchronization

General commands in control direction

INF Semantics

- <16>:= Auto/Man, Umschaltung Hand / Auto
- <17>:= higher tap, Trafo höher
- <18>:= lower tap, Trafo tiefer
- <55>:= Rated value 1 select, Sollwert1 aktivieren
- <56>:= Rated value 2 select, Sollwert2 aktivieren
- <57>:= Rated value X select, X= 1..4, Sollwertanwahl als Messwert
- <65>:= Grenzwert Überspannung

1.2.5 Basic application functions

- Test mode
- Blocking of monitor direction
- Disturbance data
- Generic services
- Private data

1.2.6 Miscellaneous

Measurands are transmitted only in case of a modification of any measurand of described block.

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