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## ➤ TABLE OF STANDARD PROPERTIES OF USE AND MEASUREMENT

The properties defined in the table below, are set up according to the technical conditions of use and measurement. These properties are warranted within their variation range and in compliance with the standard technical conditions of use.

| Properties<br>LA75C              | Standard technical conditions | Unit  | Nominal values           | Min.<br>values | Max.<br>values |
|----------------------------------|-------------------------------|-------|--------------------------|----------------|----------------|
| Notes                            |                               |       | -                        |                |                |
| Function                         |                               |       | Linear amplifier         |                |                |
| Max. number of channels          |                               |       | 1                        |                |                |
| Cooling                          |                               |       | Forced air               |                |                |
| Protection                       |                               |       | Thermal<br>Short circuit |                |                |
| Negative supply voltage          | Standard environment          | V     | -36                      | -30.0          | -40.0          |
| Positive supply voltage          | Standard environment          | V     | 165                      | 164            | 182            |
| Min. input voltage               | Standard environment          | V     | -1.2                     | -1.1           | -1.3           |
| Max. input voltage               | Standard environment          | V     | 7.7                      | 7.6            | 7.9            |
| Min. output voltage              | Standard environment          | V     | -20                      | -19.0          | -22.0          |
| Max. output voltage              | Standard environment          | V     | 150                      | 145.0          | 160.0          |
| Gain                             | Standard environment          | V/V   | 20                       | 19.0           | 21.0           |
| Max. output current              |                               | A     | 2.40                     | 2.20           | 2.60           |
| Max. output load capacitance     |                               | µF    | 400                      | 360.0          | 440.0          |
| Signal to noise ratio            | Noise measurement conditions  | dB    | 85                       | 70.0           | 100.0          |
| Unloaded output bandwidth (-3dB) |                               | Hz    | 33000                    | 29700          | 36300          |
| Loaded Output bandwidth (-3dB)   | Standard load                 | Hz    | 4107                     | 3697           | 4518           |
| Input impedance                  |                               | kOhms | 10                       | 9.5            | 10.5           |
| Mass                             |                               | g     | 860                      | -              | -              |
| Dimensions                       |                               | mm    | 18F wide, 4H high        |                |                |

| Option<br>UC45                  | Standard technical conditions                            | Unit | Nominal values  | Min.<br>values | Max.<br>values |
|---------------------------------|--|------|---|----------------|----------------|
| Notes                           |  |      |   |                |                |
| Function                        |  |      | Option on amplifier board -<br>Numerical servo controller |                |                |
| Size                            |  | mm   | 50*70   |                |                |
| Max. number of control channels |  |      | 1 per channel   |                |                |
| Sampling frequency              |  | Hz   | 10000   |                |                |
| A/D converters                  |  |      | 16 bit @ +/-10V   |                |                |
| D/A converters                  |  |      | 16 bit @ +/-10V   |                |                |
| Computer interface              |  |      | USB   |                |                |
| Filter cells                    | 2nd order low-pass or stop-band filter<br>@ [150 2000]Hz |      | Selectable by the GUI<br>HDPM45                           |                |                |

\*Bandwidth settled according to your specifications; by default 1 Hz.

| Properties LC75C        | Standard technical conditions | Unit | Nominal values                        | Min. values | Max. values |
|-------------------------|-------------------------------|------|---------------------------------------|-------------|-------------|
| Notes                   |                               |      | -                                     |             |             |
| Function                |                               |      | Bipolar AC/DC linear converter        |             |             |
| Cooling                 |                               |      | Forced air                            |             |             |
| Protection              |                               |      | Thermal<br>Overcurrent<br>Overvoltage |             |             |
| Main voltage            | Standard main supply          | VAC  | 230                                   | 190         | 250         |
| Main frequency          | Standard main supply          | Hz   | 50                                    | 45          | 65          |
| Negative output voltage | Standard environment          | VDC  | -35                                   | -32.0       | -38.0       |
| Positive output voltage | Standard environment          | VDC  | 170                                   | 160.0       | 180.0       |
| Current limitation      | Standard environment          | A    | 2.40                                  | 2.28        | 2.52        |
| Mass                    |                               | g    | 680                                   | -           | -           |
| Dimensions              |                               | mm   | 12F wide, 3H high                     | -           | -           |

| Properties SG75-x        | Standard technical conditions | Unit | Nominal values            | Min. values | Max. values |
|--------------------------|-------------------------------|------|---------------------------|-------------|-------------|
| Notes                    |                               |      | x : number of channel     |             |             |
| Function                 |                               |      | Strain Gauges conditioner |             |             |
| Max. number of channels  |                               |      | 3                         |             |             |
| Min. supply voltage      |                               | VDC  | -15                       | -14.3       | -15.8       |
| Max. supply voltage      |                               | VDC  | 15                        | 14.3        | 15.8        |
| Min. output voltage      |                               | VDC  | -12                       | -11.4       | -12.6       |
| Max. output voltage      |                               | VDC  | 12                        | 11.4        | 12.6        |
| Signal to noise ratio    | Noise measurement conditions  | dB   | 70                        | 56.0        | 84.0        |
| Output bandwidth (-3dB)* |                               | Hz   | 2000                      | 1600        | 2400        |
| Mass                     |                               | g    | 180                       | -           | -           |
| Dimensions               |                               | mm   | 6F wide, 3H high          |             |             |

\*Bandwidth settled according to your specifications

| Properties ECS75-x       | Standard technical conditions   | Unit | Nominal values                  | Min. values | Max. values |
|--------------------------|---|------|---------------------------------|-------------|-------------|
| Notes                    |   |      | x : number of channel           |             |             |
| Function                 | Coupled with a planar coil with a stroke range of 500 $\mu$ m or 1500 $\mu$ m |      | Eddy current sensor conditioner |             |             |
| Max. number of channels  |   |      | 3                               |             |             |
| Min. supply voltage      |   | VDC  | -15                             | -14.3       | -15.8       |
| Max. supply voltage      |   | VDC  | 15                              | 14.3        | 15.8        |
| Min. output voltage      | adjusted with the nominal stroke of the mechanism                             | VDC  | -10                             | -9.5        | -10.5       |
| Max. output voltage      | adjusted with the nominal stroke of the mechanism                             | VDC  | 10                              | 9.5         | 10.5        |
| Signal to noise ratio    | Noise measurement conditions  | dB   | 85                              | 80          | 90          |
| Output bandwidth (-3dB)* |   | Hz   | 10000                           | 8000        | 12000       |
| Measurement range        | Target is aluminium alloy (steel on request)                                  | mm   | 0.5 or 1.5                      |             |             |
| Linearity                |   | %    | +/- 1.5                         |             |             |
| Mass                     |   | g    | 200                             | -           | -           |
| Dimensions               |   | mm   | 6F wide, 3H high                |             |             |

Bandwidth settled according to your specifications

## ➤ PROPERTIES STANDARD TECHNICAL CONDITIONS OF USE AND MEASUREMENT

|                               |  |
|-------------------------------|--|
| <b>Quasistatic excitation</b> | : AC voltage between -20 and 150 V at 1 Hz   |
| <b>Environment</b>            | : Ambient temperature (15-25°C) and dry air (Humidity < 50 % rH)   |
| <b>Standard main supply</b>   | : Main according to directive HD472; could be adapted to 110 VAC on request (full performances may not be attained below 95 VAC) |

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**Noise measurement conditions** : Reading bandwidth 1 Hz to 1 kHz -- Full range of measurement of the sensor  
**Standard load** : Actuator APA from series S or SM : 1.55  $\mu$ F (load test may be different)

Any technical conditions of use, different from those defined above, can lead to temporary or definitive alterations of properties. Thank you to contact CEDRAT TECHNOLOGIES before using actuators under non standard technical conditions.

➤ **FACTORY TESTS CARRIED OUT**

- Test 1: Load and discharge time
- Test 2: Linearity output voltage vs. input voltage

➤ **EXTRA FACTORY TESTS**

- Test 3: Gain and linearity in closed loop
- Test 4: Step response in closed loop (sensor output voltage versus command voltage)
- Test 5: Bode diagram

➤ **AVAILABLE OPTIONS**

- [ UC ] Servo controller
- [ PP ] Push-pull
- [ SG ] Strain Gauges conditioner
- [ ECS ] Eddy Current Sensor conditioner